MODERATING ROLE OF TECHNOLOGY OPTIMISM IN SHAPING TAX COMPLIANCE INTENTION AMONG UNIVERSITY STUDENTS IN E-COMMERCE SETTINGS

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ABSTRACT

The study examined the moderating effect of technology optimism on the relationship between perceived e-commerce behaviour and tax compliance intention. A self-administered questionnaire was used to collect data from 427 e-commerce platform users. A partial least squares structural equation model was used to test the conceptual model and hypotheses using SmartPLS 4. This study found that attitudes, subjective norms, tax awareness, and technology optimism, but not behavioural control, significantly influence tax compliance intention. Additionally, technology optimism was found to moderate the relationship between attitude and subjective norms with tax compliance intention but did not moderate behavioural control and tax awareness with tax compliance intention. Finally, this study highlights the practical and theoretical importance of understanding the implications of perceived e-commerce behaviour and tax compliance intention in the presence of technology optimism.

Keywords: E-commerce, User behaviour, Technology optimism, Tax, Tax compliance intention

JEL classification: H26; M41; D83; L81

1. Background of the Study

Tax compliance intention is a key factor in reducing the cost of revenue generation for government expenditure. It is people's readiness, tendency, and willingness to comply with legal tax obligations. Furthermore, tax compliance intention can predict and explain compliance behaviour in an economic setting through the interaction of individuals on social networks (Hashimzade & Myles, 2018; Mu et al., 2022). Increasing tax compliance intention can assist the government in generating more tax revenue for a country's economic growth and development, especially through e-commerce, which is directly linked to an increase in online sales, tax collection, and revenue generation in many countries worldwide (Argilés-Boschet al., 2020; Baozhuang et al., 2021).

E-commerce has revolutionized and improved the connections between sellers, manufacturers, and consumers using vital tools of financial incentives. For instance, Coppola (2021) reported worldwide e-commerce net sales of 4.28 trillion USD from over two billion online purchases and 5.2 billion online visitors, primarily via mobile devices during the COVID-19 pandemic. Additionally, e-commerce greatly promotes the connection of different nations' economies as more developing countries are now moving towards becoming digital economies (Juswanto & Abiyunus, 2023; Tofan & Bostan, 2022; Yumin & Liu, 2023). Moving developing nations' economies and tax systems to digital revenue administration increases their digital presence and tax revenue generation (Andikara et al., 2023; Dom et al., 2022; Lucas-Mas et al., 2021).

University students form part of the global users who have embraced e-commerce platforms for online trading (Lucas et al., 2023; Kesuma et al., 2020; Nursyirwan & Ardaninggar, 2020). They prefer e-commerce using mobile applications to offline markets, and their willingness to continue using e-commerce is due to their emerging knowledge and skills in information systems, electronic taxation, modern financial and business technology, entrepreneurship, and online shopping behaviour and intention (Beatson et al., 2020; Kesuma et al., 2020; Russell et al., 2020). An increase in e-commerce users' level of technology optimism and the utilization of online business technologies have paved the way for the generation of more tax

revenue through users' tax compliance intention (Mu et al., 2022; Soon et al., 2020).

Consequently, e-commerce technology presents several issues for tax compliance intention. The lack of physical presence of e-commerce digital platforms presents significant challenges to different governments and tax administrators regarding online revenue generation and tax compliance (Lucas-Mas et al., 2021; Yumin & Liu, 2023). E-commerce technology has not been efficiently utilized for tax filing and returns by many online users at different levels because of the lack of computer literacy and tax awareness, which leads to low tax compliance intention (Asrinanda, 2018; Bestaria et al., 2019; Bornman & Ramutumbu, 2019; Lestari & Wicaksono, 2017). Low tax awareness and conscience are also part of online tax challenges in e-commerce leading to low tax compliance.

Furthermore, low tax compliance intention, especially in Nigeria, has badly affected tax revenue generation by the tax authorities. In recent years, the portion of taxes as part of Nigeria's total income decreased from 7.3% to 5.5%, with the highest at 9.6% in 2011 and the lowest at 5.3% in 2016, despite aiming for an 18% increase in the tax-to-GDP ratio (OECD, 2023; Nwokoma et al., 2022). In 2022, Nigeria had a low tax-to-GDP ratio of 5%, while the average for 31 African countries was higher at 16% (OECD, 2023). Hence, Nigeria faces a big tax challenge, with a huge tax gap of ₦20 trillion, mainly because of low tax compliance intentions (Olaniyi, 2023). Therefore, Nigeria needs to expand its domestic tax sources (Ogunkola & Olakojo, 2021). Low tax compliance intention can thus be seen as a significant threat to the nation’s economy.

Moreover, in recent studies that examined tax compliance intention in e-commerce, very little attention was given to the same issues in the African context and developing countries such as Nigeria (Kumar et al., 2021; Saidu et al., 2021a; Villa et al., 2018). Existing studies have also stressed the need for more research on the technology optimism of university students as e-commerce users (Haryanti & Pribadi, 2019). However, limited studies have examined how university students’ optimism about new business technologies influences their behavioural intentions (Chao & Yu, 2019). There is also the need for more studies on e-commerce users’ behaviour and

related technology (Musyaffi et al., 2021; Park & Zhang, 2022). Furthermore, even less research consideration has been given to tax compliance intention (Bani-Khalid et al., 2022), despite many calls to integrate technology optimism as a moderating variable on the relationship between e-commerce users' behaviour and their intentions (Chang & Chen, 2021; Hussain & Raghavan, 2021) in universities (Haryanti & Pribadi, 2019; Saidu et al., 2021a). To address these issues and gaps, this study examines the moderating effect of technology optimism on the relationship between university students' perceived e-commerce behaviour and tax compliance intention.

To achieve the study's objective, we developed a research model that extends the understanding of perceived e-commerce behaviour, tax compliance intention, and technology optimism, resulting in new theoretical contributions. The study's novelty and theoretical contributions are three-fold. Firstly, this study examines the moderating effect of technology optimism on the relationship between perceived e-commerce behaviour and tax compliance intention among university students in a developing country, using a new moderating variable that has not been previously utilized in measuring this relationship. Secondly, this study extends the Theory of Planned Behaviour (TPB). The extension is due to the recent calls for the inclusion of tax awareness as an additional predictor beyond the existing three predictors (attitude, subjective norms and behaviour control) in the TPB. It was based on the suggestions and limitations of Solichin and Astuti (2021) and Taing and Chang (2020). Thirdly, this study considers the integration of the aspects of TPB, Income Tax Evasion Theory (ITET), and the Technology Readiness model (T.R. Model) from the perspectives of users of e-commerce platforms in the university context.

2. Theoretical Background

2.1 Theory of Planned Behaviour (TPB)

Previous scholars have postulated several theories on e-commerce and tax compliance intention from different dimensions and perspectives. Specifically, Ajzen (1985; 1991) postulated the TPB. The theory explains that the behaviour produced by an individual emanates because of the intention to

behave (Ajzen, 1985; Ajzen, 1991; Andreas & Savitri, 2015). Earlier researchers mostly used the TPB to explain people's behavioural intention to accept and use I.T. for personal or competitive advantage, making it a simple model with excessive explanatory power (Grandón et al., 2011; Herrero Crespo & Rodríguez del Bosque, 2008). In support of this view, TPB was concluded to be the best framework for examining the e-commerce users' behaviour and tax compliance intention using a behavioural aspect of attitudes, subjective norms, and behavioural control as used by Saidu et al. (2021b); Sharif and Naghavi (2021); Solichin et al. (2021); and Taing and Chang (2020). Researchers also use it to respond to social influence when intending to shop online, start an entrepreneurial business, pay e-taxes, or execute banking transactions (Herrero Crespo & Rodríguez del Bosque, 2008; Nursyirwan & Ardaninggar, 2020; Shankar & Rishi, 2021; Sharif & Naghavi, 2021; Solichin & Astuti, 2021; Solichin et al., 2021; Soon et al., 2020; Taing & Chang, 2020). Thus, TPB is generally known for its application in behavioural research studies, e-commerce and other related I.T. services.

2.2 Tax compliance theory

Tax compliance behaviour or intention is affected by economic and non-economic factors such as deterrence, social psychology, fiscal exchange, comparative treatment, political legitimacy and trust in government (Bello & Danjuma, 2014; Krieger, 2021). Nevertheless, the most popular theory is the Income Tax Evasion Theory (ITET), also known as the Economic Deterrence Theory (EDT) (Bello & Danjuma, 2014; Devos, 2014; Fjeldstad, Schulz-Herzenberg, & Hoem Sjursen, 2012; Krieger, 2021). Allingham and Sandmo (1972) founded the ITET. Tax administrators broadly adopted the theory when developing enforcement strategies based on penalties and the fear of detection (Allingham & Sandmo, 1972; Bello & Danjuma, 2014; Fjeldstad et al., 2012). In the 1980s, extensive research studies used ITET on tax evasion and non-tax compliance (Devos, 2014). In addition, some recent studies also used the ITET elements to determine the tax compliance intention of users (De Simone, Lester, & Markle, 2020; Tanya, 2020; Vincent, 2021; Vincent & Ntim, 2021).

The ITET holds that tax compliance intention influences the tax rate, penalties for fraud and probability of detecting the tax evader (Bello & Danjuma, 2014; Devos, 2014; Lewis, 1982). The ITET further examined the connections between the motivation to avoid paying taxes and the work effort to detect and prevent tax evasion (Allingham & Sandmo, 1972; Devos, 2014). Conversely, under low likelihoods of a tax audit, detection and low penalties, the tendency to tax evasion is high among taxpayers and vice versa (Abuamria, 2019; Alm, Cox, & Sadiraj, 2019; Devos, 2014; Fjeldstad et al., 2012). The ITET critically looks into the economic variable of deterrence, which explains the likelihood of being caught, along with penalties to be applied to the defaulters, as well as the psychological aspect of moral values, equity and fairness held by taxpayers (Abuamria, 2019; Alm et al., 2019; Devos, 2014; Krieger, 2021).

2.3 Technology Readiness Model (T.R. Model)

Researchers widely use the Technology Readiness Model (T.R. Model) derived from the Technology Readiness Index (TRI). The T.R. model checks the overall readiness to adopt new technology, focusing on an individual's personality, traits, cultural beliefs, and behavioural intentions to use the new technology (Acheampong et al., 2017). Parasuraman transformed and reduced the model's measurement items to recognize several emerging technologies, including e-commerce, social media, and cloud computing, effective in people's lives and well-being (Parasuraman & Colby, 2015). Besides, the T.R. model measures an individual's generally positive and negative beliefs and thoughts about new technology (Hussain & Raghavan, 2021; Parasuraman, 2000a, 2000b; Syamfithriani et al., 2021; Vik, Melås, Stræte, & Søraa, 2021).

Several researchers have applied the T.R. model in different areas like e-commerce and online business services (Hussain & Raghavan, 2021; Jafari-Sadeghi, Garcia-Perez, Candelo, & Couturier, 2021; Richardson et al., 2021; Syamfithriani et al., 2021), online taxation systems (Blut & Wang, 2019), e-payment (Acheampong et al., 2017; Deufel, Kemper, & Brettel, 2019; Edward, 2022), education (Chao & Yu, 2019; Cruz-Cárdenas, Guadalupe-Lanas, Ramos-Galarza, & Palacio-Fierro, 2021; Haryanti & Pribadi, 2019), e-learning and health (Adegore & Adegbore, 2021; Nwagwu, 2019), I.T.

(Değerli, Aytekin, & Değerli, 2015), SMEs (Ariani et al., 2018; Astuti & Nasuon, 2014), culture and tourism (Matthew, Walford, & Jimenez-Bescos, 2018; Mishra, Maheswarappa, & Colby, 2018; Ying, So, & Sparks, 2016), manufacturing firms (Aboelmaged, 2014), and agriculture (Vik et al., 2021). Additionally, some researchers combined the TPB and TRI models to examine university students' readiness to use online technology (Chao & Yu, 2019).

2.4 Integration of the TPB, ITET and T.R. model

The current study is grounded in three theoretical frameworks: the Theory of Planned Behaviour (TPB), the Informational Tax Evasion Theory (ITET), and the Technology Readiness model (T.R. model). The TPB forms the primary framework for the study's independent variables, including perceived attitudes, subjective norms, individuals' behavioural control, and other behavioural variables of tax awareness. The ITET is a supporting theory that explains how individual taxpayers comply with tax obligations due to tax rates, penalties for defiance, and the probability of detection by tax authorities. The other supporting theory is the T.R. model which explains the user's psychology toward adopting new technology to derive benefits, satisfaction, continuous usage, and intention. By utilizing these three theories, the study provides a robust theoretical foundation for understanding e-commerce users' behaviours, technology optimism and tax compliance intentions.

While the four e-commerce behavioural constructs (attitude, subjective norms, behaviour control and tax awareness) used in the current study provide insight into tax compliance intention, the TPB construct failed to justifiably explain the users' behaviour fully toward tax compliance intention. Similarly, the ITET has been widely adopted but has failed to consider critical factors such as attitudes, perceptions, social context and moral judgments, with a focus on the coercive side of tax compliance (Bello & Danjuma, 2014; Fjeldstad et al., 2012; Lewis, 1982). Fjeldstad et al. (2012) noted the ITET's limitations and called for a more comprehensive framework that incorporates psychological and behavioural aspects. Likewise, the conventional tax theory is insufficient to support income taxation of e-commerce and needs further

development (Lucas-Mas et al., 2021). Moreover, the need to integrate technology readiness as a moderating variable on the relationship between e-commerce users' behaviour and their intentions has been suggested by some prior researchers (Chang & Chen, 2021; Hussain & Raghavan, 2021). In light of these limitations, the current study adopts a theoretical integration that accounts for the missing behavioural variables and explanations, building on the TPB and incorporating the ITET and T.R. model. These variables aim to enhance the understanding of tax compliance intention among e-commerce technology users. The integration of these theories and variables provides a comprehensive framework for the study and fills the gaps in existing literature, ultimately contributing to tax compliance literature development.

3. Hypotheses Development

3.1 Attitudes and tax compliance intention

The psychological literature on tax behaviour encompasses studies relating to attitudes toward tax compliance (Kogler & Kirchler, 2020). Perceived attitude is an individual's appraisal of a given object, people, group or behaviour (Onu, 2016). A person's general attitude toward an object influences the personal values or evaluation of the qualities associated with the object and is expected to correlate with the person's intentional behaviour. Recent attitude survey studies have examined taxpayers' behaviour to predict tax compliance or non-compliance (Onu, 2016). A taxpayer who supports a positive attitude towards tax will likely comply with tax obligations and vice versa (Solichin et al., 2021). With regard to the use of e-commerce platforms, the issue is different. One of the e-commerce platform users contributing to non-tax compliance intentions is university students. Recently, university students were found to contribute to non-tax compliance intentions due to negative attitudes, inadequate social support, negative behavioural influence, simplicity of social and virtual environment, and obsolete government tax policies and implementations (Beatson et al., 2020; Gou & Zhang, 2021; Kesuma et al., 2020; Oyekunle, 2019; Pratama & Jin, 2019; Russell et al., 2020).

Attitude as an aspect of human behaviour toward tax compliance intention is full of difficulties that affect tax compliance behaviour and

intention (Bani-Khalid et al., 2022). Similarly, experts noted that many people have a negative attitude toward tax compliance (Onu, Oats, Kirchler, & Hartmann, 2019). Researchers have also noted that the attitude to comply with tax obligations contributes to non-tax compliance intention (Rahman, Puteh & Manap, 2021). It negatively affects tax compliance intention (Campbell, 2018), as found among university students (Goksu & Sahpaz, 2015; Russell et al., 2020; Shaari, Ali, & Ismail, 2015). Kiconco, Gwokyalya, Sserwanga, and Balunywa (2019) also found a negative influence of taxpayers' attitudes on intentions to comply with tax regulations. Therefore, we hypothesize that:

H1a: *University students' attitude negatively influences tax compliance intention*

3.2 Behavioural control and tax compliance intention

Perceived behavioural control produces positive and negative attitudes towards an object (Solichin et al., 2021). The more behavioural control produced by a taxpayer in a given direction (positive or negative), the more likely they will intend to comply or not comply with the tax obligations of a given nation. Ajzen (2008) noted that behavioural intentions account for a large proportion of variance in the actual behaviour and, at the same time, are influenced by behavioural control. A high taxpayer perception of control and ability to comply significantly promotes the intention of the taxpayer to comply with tax obligations. Solichin et al. (2021) found that behavioural control has a significant positive influence on tax payment intention. Pratama and Jin (2019) found that behavioural control intention significantly influences international students' online payment intention using the Alipay platform. Kiconco et al. (2019) also established that behavioural control intention significantly and positively influences the intention to comply with tax payments. Therefore, we hypothesize that:

H1b: *University students' behavioural control positively influences tax compliance intention*

3.3 Subjective norms and tax compliance intention

Subjective or social norms are an individual's moderate actions, shaped by understanding the environment and its relationship (Ushchev & Zenou, 2020). Subjective norms play a vital role in predicting people's behaviour through intentions arising from the social pressure of displaying or not displaying a behaviour (Ajzen, 2008; Smith, González, & Frigolett, 2021). Subjective norms on tax compliance intention are part of people's norms (Jimenez & Iyer, 2016) from a general balance of effect that leads to an indirect relationship between tax compliance and individual intended efforts (Ushchev & Zenou, 2020). Similarly, Solichin et al. (2021) and Kiconco et al. (2019) found that subjective norms influence tax payment intention significantly. Moreover, Hallsworth, List, Metcalfe, and Vlaev (2017) found that the subjective norm messages of tax payment reminder letters increased tax intention rates for overdue tax and tax compliance. Therefore, we hypothesize that:

H1c: *University students' subjective norms positively influence tax compliance intention*

3.4 Tax awareness and tax compliance intention

Perceived tax awareness is taxpayers' sincerity, willingness, and desire to fulfil their tax responsibilities (Asrinanda, 2018; Nurlis & Ariani, 2020). An individual taxpayer can comprehend the meaning, function and rationale of paying taxes and implement the tax regulations willingly and promptly to fulfil the required tax obligations (Lestari & Wicaksono, 2017). Building such responsibilities of paying online and offline taxes relies on the effort of the tax authorities, government and citizens. To increase tax revenues, the government needs to increase taxpayers' level of awareness (Andreas & Savitri, 2015).

Additionally, tax awareness can influence taxpayers' intention to comply positively and significantly among individuals. That is to say, the more aware a taxpayer is of tax responsibility, the higher the chances of having a positive intention to comply with tax obligations. In support of this empirically, Shaari et al. (2015) reported that students were aware of the government's tax policies but had partial knowledge about them. In another study, some

researchers found that tax awareness significantly and positively influenced tax compliance (Asrinanda, 2018; Ay, Humta, & Ghafourzay, 2021; Savitri & Musfialdy, 2016). Similarly, some researchers found that tax awareness directly and significantly relates to tax compliance intention (Haryati & Tambun, 2022). Therefore, we hypothesize that:

H1d: *University students' tax awareness positively influences tax compliance intention*

3.5 Technology optimism and tax compliance intention

Perceived technology optimism is a positive view of technology with a firm belief that it provides increased control, flexibility and efficiency to people's lives and work (Na, Lee, & Yang, 2021; Syamfithriani et al., 2021). It can promote flexibility, control, and work efficiency (Chang & Chen, 2021). Technology optimism is one of the four dimensions of the T.R. model, including innovativeness, insecurity and discomfort (Hussain & Raghavan, 2021; Syamfithriani et al., 2021). The use of technology optimism as a unidimensional construct is because of its single power to moderate students' behavioural control, attitudes and social influences on behavioural intention (Chao & Yu, 2019). Ming Ling and Muhammad (2006) found that technology optimism positively contributes to tax compliance among tax officers. Cruz-Cárdenas et al. (2021) also found technology optimism to have a significant and positive relationship with consumers' intention to use technology-based services. In particular, technology optimism strongly influenced the relationship between online business users' behaviour and intentions.

In addition, technology optimism was noted to moderate the relationship between the factors determining technology usage and consumer attitudes (Meng, Kyung-Soo, & Oh, 2017; Tsourela & Roumeliotis, 2015). Some researchers noted the possibility of using technology optimism on an individual characteristic to moderate the relationships between online users' motivations and behavioural intentions (Chao & Yu, 2019; Tsourela & Roumeliotis, 2015; Ying et al., 2016). For example, technology optimism alone can moderate university students' behavioural control, attitudes and social influences on behavioural intention related to online learning (Chao &

Yu, 2019). People with high values of optimism and innovativeness contribute to the increase in overall technology readiness, whereas a high level of discomfort and insecurity leads to a decline (Parasuraman, 2000b; Parasuraman & Colby, 2015). That is to say, technology optimism has a positive moderating effect in shaping the behaviour of taxpayers toward tax compliance intention. Therefore, we hypothesize that:

H2a: *University students' technology optimism positively influences tax compliance intention*

H2b: *Technology optimism moderates the association between university students' attitudes and tax compliance intention*

H2c: *Technology optimism moderates the association between university students' behavioural control and tax compliance intention*

H2d: *Technology optimism moderates the association between university students' subjective norms and tax compliance intention*

H2e: *Technology optimism moderates the association between university students' tax awareness and tax compliance intention*

4. Research Method

The researchers employed a cross-sectional research design and gathered data by administering survey questionnaires. This study was conducted in six public state universities in the Northeastern part of Nigeria, with the approval of the respective departmental heads. The universities include Adamawa State University in Mubi, Bauchi State University in Bauchi, Borno State University in Maiduguri, Gombe State University in Gombe, Taraba State University in Jalingo and Yobe State University in Damaturu.

4.1 Participants

The study population comprised 65,218 undergraduate students within the six (6) state universities in Nigeria's North-eastern states, as obtained from data available at the National Universities Commission (2022). After the final data cleaning and screening, 427 valid responses, from 243 (57%) male and 184 (43%) female respondents, were finally used for the data analysis. On age categorization, 214 respondents representing 50 percent, were within the 15-

25 years age bracket. 175 (41%) were in the 26-35 years bracket, 30 (7%) were within the 36-45 years bracket, while the final age category, that is those above 45 years, had 9 respondents, representing only 2%. This result reflects the fact that the vast majority of the respondents are undergraduate students, accounting for 50% of the respondents being in the 15-25 years age group.

4.2 Procedure

The primary researchers administered the questionnaires and explained the research aims to ensure voluntary participation. The researchers limited their sample to undergraduate students with practical experience in e-commerce, specifically those who recently made online purchases on any e-commerce platform, to ensure the selection of only relevant respondents. The researchers used a snowballing technique to directly distribute the questionnaires to the respondents. The study specifically targeted undergraduate students who had practical experience in both formal and informal e-commerce platforms. Formal e-commerce platforms were operationalized as registered and globally recognized online trading platforms, while informal e-commerce platforms were defined as non-registered platforms recognized and used by some online business users.

4.3 Measures

The questionnaire includes 23 items and two respondent demographic information items. The questionnaire measurement items were adapted from prior researchers on a 5-point Likert scale. The attitude and tax awareness items were adapted from Taing and Chang (2020). The behavioural control and subjective norms items were adapted from Pratama and Jin (2019) and Taing and Chang (2020) respectively. The tax compliance items were adapted from Pratama and Jin (2019) and Nurlis and Ariani (2020). Finally, the items for technology optimism were adapted from Parasuraman and Colby (2015). Table 4 under Appendix I provides full details of all the adapted measurement items and their sources.

4.4 Data analysis

The main data analysis for the study involved several steps and techniques. Firstly, descriptive statistics were used to examine the distribution of the collected data. Secondly, a correlation matrix was calculated to ascertain the relationships between the study's constructs and indicators. Thirdly, the analysis utilized partial least squares structural equation modelling (PLS-SEM). Fourthly, convergent validity and discriminant validity were evaluated. Fifthly, internal consistency was assessed using measures namely Cronbach's Alpha and composite reliability. Finally, the analysis involved evaluating the R^2 (in-sample predictive power).

The descriptive statistics of the constructs were measured using SPSS version 26. Second, SmartPLS 4 version 4.0.7.7 was later used by the researchers to assess the conceptual model and the proposed hypotheses using the partial least squares structural equation modelling (PLS-SEM). PLS-SEM examines the parameters of a given equation in a structural equation model by merging principal component analysis with a regression-based path analysis using a flexible multifaceted model relationship estimation (Sarstedt et al., 2020; Sarstedt, Ringle, & Hair, 2021). Moreover, the researchers later tested the study's measurement and structural models in the PLS-SEM analysis. For each construct, the researchers calculated discriminant validity, internal consistency: Cronbach's alpha (α) and composite reliability (ρ), as well as average variance extracted (AVE). Discriminant validity is obtained when correlations among study variables are below the benchmark value of 0.90 (Tabachnick & Fidell, 2019). For internal consistency, it is established at any value above 0.6 (Hair, Risher, Sarstedt, & Ringle, 2019) and for AVE, at a value above 0.50 (Hair, Hult, Ringle, & Sarstedt, 2017; Hair et al., 2019).

The researchers further measured the moderating effect using a simple moderation analysis. According to Memon et al. (2019), a simple moderation analysis is suitable when the moderator is expected to apply its effect on a given structural path(s) with the contribution of a relevant theory. As such, moderating effects are noted on variables whose variance affects the strength or the direction of a relationship between an exogenous and an endogenous variable (Baron & Kenny, 1986). Moreover, the researchers also presented a simple slope plot for the visual inspection of the result to further depict the

direction and strength of the moderating effect. Experts recommend researchers execute and report the result of a simple slope plot to visually examine the direction and strength of the moderating effect (Memon et al., 2019). Only the statistically significant moderating effect is considered to be plotted using Dawson's 2-way linear interactions tool (Dawson, 2014; Ramayah et al., 2018), i.e., the binary moderator excel tool.

5. Results

5.1 Descriptive statistics

The descriptive statistics are presented in Table 1.

Table 1: Descriptive Statistics of the Constructs

Constructs	A	Mean	Std. Deviation	Excess kurtosis	Skewness
Attitude	0.857	2.969	0.708	-0.582	-0.110
Behavioural Control	0.913	3.646	0.692	0.144	-0.232
Subjective Norms	0.733	3.020	0.762	-0.679	-0.099
Tax Compliance Intention	0.868	3.873	0.557	0.424	-0.208
Technology Optimism	0.866	4.109	0.523	0.047	-0.146
Tax Awareness	0.768	3.923	0.483	0.277	0.098

The table presents the results for the six constructs with high internal consistency ranging from 0.733 to 0.913 and average response between 2.969 and 4.109. It also shows that the excess kurtosis from all the constructs has values ranging from -0.679 to 0.424 and the values for the skewness range from -0.232 to 0.098. It indicates that both values for the excess kurtosis and skewness are closer to zero (0) and are normally distributed. Experts assert that normally distributed data is supposed to have a statistical threshold value of $\leq \pm 2.0$ for skewness and $\leq \pm 3$ for kurtosis (Cheng, Lay, Hsu, & Tsai, 2021). Therefore, the descriptive results of all six constructs are within the normal thresholds and have satisfied the normal distribution condition of a descriptive data set.

5.2 Measurement model evaluation

The evaluation of the PLS-SEM measurement model depicted reasonable outcomes. First, all the indicators as contained in Table 2 met the satisfactory requirements of factor loadings, as their outer loadings were above 0.70 (Hair, Black, Babin, & Anderson, 2019; Hair, Hult, Ringle, & Sarstedt, 2022; Ramayah et al., 2018), ranging from 0.710 to 0.922. Similarly, the constructs satisfied the minimum requirement of composite reliability (ρ) index, with values above 0.6, ranging from 0.850 to 0.935 along with convergent validity, having AVE values greater than 0.5, falling between 0.587 to 0.786 (Chin & Marcoulides, 1998). Finally, **Error! Reference source not found.**the discriminant validity was established based on all the correlational matrix values being below 0.9 (Tabachnick & Fidell, 2019).

5.3 Structural model evaluation

The result of the structural model evaluation is presented in Figure 1 and Table 3. This follows the guides proposed by Aguirre-Urreta and Rönkkö (2018); Shmueli et al. (2019), for path analysis to use a 10,000 resamples bootstrapping technique to assess the proposed path relationships hypothesized in a conceptual model using the standard errors, t-statistics, p-values and at 95% bias-corrected confidence intervals (BCCI) for the attainment of the presence of statistical significance or not. The results in Figure 1 indicate that the structural model has a direct path R^2 value of 0.450 and an interactive path R^2 value of 0.457. In addition, the results shown in Figure 1 further summarize the direct and interactive path coefficients (β values) and the explained variances for the conceptual model. It shows that the explained variance of some outcomes (e.g. attitude and subjective norms) strengthens slightly with technology optimism. However behavioural control and tax awareness were not strengthened in any way with technology optimism on tax compliance intention.

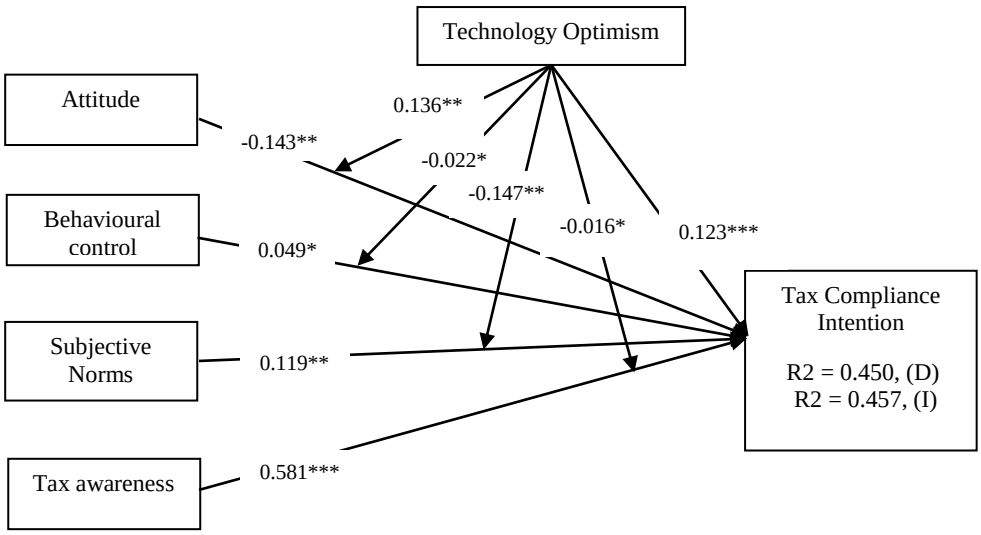

Figure 1: Summary of the Structural Model Results.

Note: ***p<0.001, **p<0.05, *p>0.05, D=direct path, I=Interactive Path

In addition, the findings of the hypothesized conceptual model in Table 3 showed that attitude negatively predicted tax compliance intention (β =-0.144, 95% BCCI [-0.258; -0.032], p = 0.020), and was not significant for behavioural control (β = 0.048, 95% BCCI [-0.056; 0.147], p = 0.217). Subjective norms (β = 0.122, 95% BCCI [0.012; 0.237], p = 0.038), Tax awareness (β = 0.574, 95% BCCI [0.490; 0.645], p = 0.000) and Technology optimism (β = 0.142, 95% BCCI [0.073; 0.214], p = 0.000) all have a positive and significant influence on tax compliance intention.

For the interactive path, the results in Figure 1 and Table 3 indicate that the effect of the technology optimism was significant and effective on the relationship between attitude (β = 0.136, 95% BCCI [0.008; 0.276], p = 0.048), subjective norms (β = -0.147, 95% BCCI [-0.281; -0.021], p = 0.032) and tax compliance intention. However, there was no significant interactive effect relationship between behavioural control (β = -0.022, 95% BCCI [-0.130; 0.078], p = 0.364), tax awareness (β = -0.016, 95% BCCI [-0.080; 0.049], p = 0.343) and tax compliance intention.

Table 2: Measurement Model Evaluation

Constructs	**1**	**2**	**3**	**4**	**5**	**6**	***ρ***	**AVE**	**Loadings range**
1. Attitude	1						0.903	0.700	0.796-0.878
2. Behavioural Control	0.476 ***	1					0.935	0.741	0.822-0.883
3. Subjective Norms	0.750 ***	0.426 ***	1				0.880	0.786	0.849-0.922
4. Tax Compliance Intention	0.204 ***	0.321 ***	0.248***	1			0.910	0.717	0.805-0.892
5. Technology Optimism	0.232 ***	0.374 ***	0.223***	0.426***	1		0.908	0.712	0.824-0.869
6. Tax Awareness	0.350 ***	0.412 ***	0.317***	0.649***	0.474***	1	0.850	0.587	0.710-0.806

Note: N = 427, *** Correlation is significant at the 0.01 level (1-tailed).

Table 3: Direct and Interactive Path Relationship

Hypotheses	**Path Relationship**	**β**	**Standard Errors**	**T statistics**	**P values**	**95% BCCI**	**Supported**
H_{a1}	ATT -> TCI	-0.144	0.070	2.054	0.020	[-0.258; -0.032]	Yes
H_{a2}	BHC -> TCI	0.048	0.061	0.782	0.217	[-0.056; 0.147]	No
H_{a3}	SJN -> TCI	0.122	0.069	1.776	0.038	[0.012; 0.237]	Yes
H_{a4}	TXA -> TCI	0.574	0.047	12.159	0.000	[0.490; 0.645]	Yes
H_{a5}	TEO -> TCI	0.142	0.042	3.360	0.000	[0.073; 0.214]	Yes
H_{a6}	TEO x ATT -> TCI	0.136	0.082	1.665	0.048	[0.008; 0.276]	Yes
H_{a7}	TEO x BHC -> TCI	-0.022	0.063	0.347	0.364	[-0.130; 0.078]	No
H_{a8}	TEO x SJN -> TCI	-0.147	0.079	1.855	0.032	[-0.281; -0.021]	Yes
H_{a9}	TEO x TXA -> TCI	-0.016	0.039	0.404	0.343	[-0.080; 0.049]	No

Note: β: Path coefficient: 95% BCCI: Bootstrapping at 95% bias-corrected confidence intervals based on 10,000 subsamples.

Moreover, using Dawson's (2014) 2-way linear interactions tool, the direction and strength of the moderating effect were also established. In particular, the interactive effect between attitude and tax compliance as depicted in Figure 2 further indicates that the line labelled high technology optimism (High TEO) has a steeper gradient than low technology optimism (Low TEO) navigation and is statistically significant. Similarly, the interactive effect between subjective norms and tax compliance intention as depicted in the interaction plots shown in Figure 3 further indicates that the linear line labelled High TEO and Low TEO both have a slightly steeper gradient at high subjective norm (High SJN). At a low subjective norm (Low SJN), the Low TEO was steeper than the High TEO for tax compliance intention. Thus, technology optimism has an interactive and significant effect on attitude and subjective norms but does not on behavioural control and tax awareness with tax compliance intention.

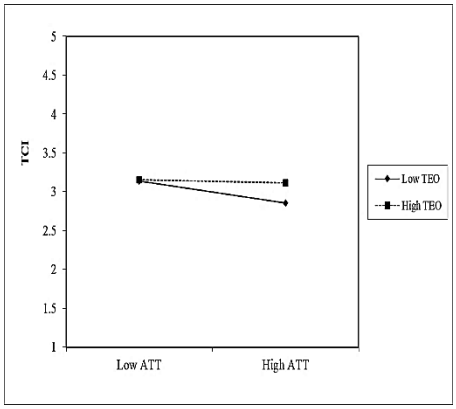

Figure 2: Interactive Path with Attitude.

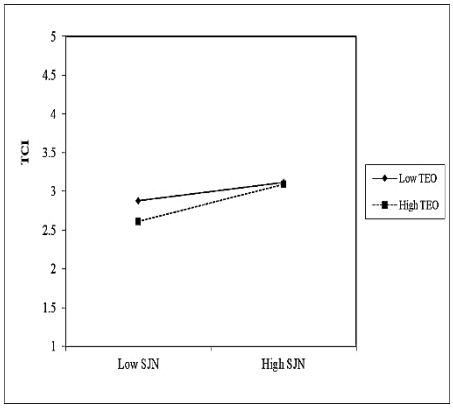

Figure 3: Interactive Path with Subjective Norms.

5.4 Discussion of findings: Determinants of tax compliance intention

This research examines the moderating effect of technology optimism on the relationship between university students' perceived e-commerce behaviour and tax compliance intention. Research on the need to understand people's behaviour that promotes compliance intention is very recent (Kupoluyi, Oloyede & Oyedokun, 2022; Vissaro, 2023). Hence, focusing on e-commerce

technology to promote tax compliance intention, especially among university students is highly essential to provide a better understanding of students' roles in e-commerce and tax compliance intention. In a similar vein, the inclusion of technology optimism greatly assists in increasing online users' intention, especially among students (Cruz-Cárdenas et al., 2021; Flavián, Pérez-Rueda, Belanche & Casaló, 2021; Park & Zhang, 2022; Putri, Novia & Nurwiyanta, 2021).

In line with the study's hypotheses, we found that attitude has a significant and negative relationship with tax compliance intention. The finding corroborates what previous studies have examined in similar direct path relationships. For instance, Kiconco et al. (2019) revealed a negative influence of taxpayers' attitudes on intentions to comply with tax regulations. It is also in line with the assertions that attitude negatively influences tax compliance intention (Campbell, 2018), as was recently noted among university students by Goksu and Sahpaz (2015) and Shaari et al. (2015). Remarkably, these studies all note the negative influence of attitude on tax compliance intention among taxpayers and students in university settings. However, a negative attitude as an aspect of human behaviour toward tax compliance intention is full of problems that may affect tax compliance behaviour and intention (Bani-Khalid et al., 2022). Nonetheless, if properly expressed, attitude can be a useful tool for encouraging students in universities to fulfil their tax obligations as required by law.

The obtained empirical result did not support the proposed hypothesis that behavioural control would have a significant and positive influence on tax compliance intention. Although, the finding validates some previous studies that found similar direct path relationships. For instance, Saad (2012) found that behavioural control partly influenced low tax compliance behaviour among taxpayers in New Zealand and concluded that behavioural control is part of the critical reasons for non-compliance behaviour. Similarly, in 2014, Saad again found behavioural control as one of the factors influencing low tax compliance behaviour among taxpayers in New Zealand. It shows that behavioural control has repetitively been found not to influence tax compliance intention fully but rather to influence non-tax compliance. Additionally, Wichmann, Leyer, & Altmüller (2024) found that perceived

behavioural control had no significant influence on the intention to comply with tax preparation services. Nevertheless, this finding disconfirms the research by Bin-Nashwan et al. (2020); Kiconco et al. (2019) and Taing and Chang (2020) who found a positive and statistically significant relationship between behavioural control and tax compliance intention. The reason could be that many university students previously have not felt obliged to follow the tax laws during their advanced studies. That signifies that when students perceive their behavioural control below expectations toward tax, the intention to comply with tax provisions will diminish, resulting in low tax compliance intention.

In addition, subjective norms, tax awareness and technology optimism were all found to have a positive and significant influence on tax compliance intention. The findings are consistent with prior research on similar relationships. As evidence, Solichin et al. (2021) found that taxpayers' subjective norms significantly and positively relate to tax compliance intention and increase inquisitiveness about paying taxes. Similarly, in their study, Soon et al. (2020) found that subjective norms, as an aspect of normative belief, significantly and positively influence taxpayers' tax compliance. For tax awareness, the finding affirms what previous studies have examined in similar direct path relationships. To exemplify, a study by Ay et al. (2021) revealed that tax awareness significantly and positively influences tax compliance intention. Similarly, Adam, Suleman & Thalib (2021) found that tax awareness significantly and positively influences tax compliance intention; so also, was the result obtained by Lixuan, Smith, and Gouldman (2020). The findings from this study align with prior research on the positive relationship between subjective norms and tax awareness with tax compliance intention, which emphasizes the importance of these factors in promoting tax compliance among taxpayers.

To further clarify technology optimism, a study by Chang and Chen (2021) revealed that technology optimism significantly and positively increases the intention to shop online using the smart shop. So did the study conducted by Cruz-Cárdenas et al. (2021) who found technology optimism to have a significant and positive relationship and to contribute to consumers' intention to use technology-based services. In direct line with tax compliance,

Ming Ling and Muhammad (2006) found that technology optimism positively and significantly contributes to tax compliance among tax officers, thereby increasing their technology readiness. This makes technology optimism essential in fostering and increasing the level of e-commerce users' compliance intention and readiness. Thus, it is evident that technology optimism is an important factor in promoting and increasing the level of e-commerce users' compliance intention and readiness, as well as contributing to consumers' intention to use technology-based services.

On the hypotheses for interactive effect, we found technology optimism having a moderating effect between attitude and subjective norms with tax compliance intention. The finding is consistent with that of Chao and Yu (2019), who found that technology optimism alone moderates university students' attitudes and subjective norms toward behavioural intention related to online activities. Such interaction infers that e-commerce users in universities with strong attitudes should adopt new e-commerce technology to increase their tax compliance intention when engaging in an online business transaction. The result further reveals that the effect of technology optimism on tax compliance intention for low-attitude university students is normal. Likewise, the effect of technology optimism is somewhat larger for high-attitude students toward their tax compliance intention. Therefore, it implies that when interacting with a high level of technology optimism, university students with a high attitude are more likely to increase their tax compliance intention.

Correspondingly, the finding further reveals that the interactive effect of technology optimism on tax compliance intention for high subjective norms university students is normal. The effect of technology optimism is somewhat smaller for low subjective norms students toward their tax compliance intention. It implies that when interacting with a high level of technology optimism, university students with high subjective norms may increase their tax compliance intention. Such notions can be attributed to the advanced knowledge, skills and simplicity of e-commerce platforms that university students use while studying at the university (Beatson et al., 2020; Kesuma et al., 2020; Olokundun et al., 2018; Russell et al., 2020). Likewise, social

pressure shapes their intention to be tax-obedient and not evaders (Bethencourt & Kunze, 2020; Solichin et al., 2021).

On the contrary, we found that there was no moderating effect of technology optimism between behavioural control and tax awareness with tax compliance intention. The finding is contrary to the result obtained by Chao and Yu (2019). However, it also does not support the likelihood of technology optimism on an individual basis to moderate the relationships between online users' motivations and intentions (Chao & Yu, 2019; Tsourela & Roumeliotis, 2015; Ying et al., 2016). It also opposes the view of technology optimism from the Technology Readiness Model that measures an individual's generally positive beliefs about new technology and how it increases intention in online activities (Hussain & Raghavan, 2021; Parasuraman, 2000a, 2000b; Syamfithriani et al., 2021; Vik et al., 2021). The finding depicts that the technological optimism of e-commerce cannot play a strong interactive effect when the users have low or weak behavioural control and strong tax awareness. It is because behavioural control of individuals produced in a given direction (positive or negative) significantly relates to their intention to comply with a given provision. Low or weak behavioural control also serves as a substance of concern to tax authorities from a social-psychological perspective (Bornman & Ramutumbu, 2019).

For tax awareness, it indicates that the students are aware of the existing taxes and technology but do not consider harmonizing the two for tax compliance intention. Consequently, some university students were also reported to be aware of the existing tax provisions but negatively believed not to be affected directly by the tax law provisions (Goksu & Sahpaz, 2015; Shaari et al., 2015). This invariably contributes to a significant rise in non-tax compliance intention (Areo & Gershon, 2020). Thus, the result reveals that university students' perception of tax awareness is not strengthened by their level of technology optimism. Their level of tax awareness is different from their perception of technology optimism despite its contribution to an increase in tax compliance behaviour.

Moreover, the interpretation of these findings could be supported by evidence from the established TPB, which holds that the blending of attitudes toward behaviour, subjective norms and perception of behavioural control led

to the development of a behavioural intention (Ajzen, 1985; Ajzen, 1991, 2002; Ajzen, 2008). Further support is the TR model which stipulates that an individual's generally positive beliefs and thoughts about new technology are influenced by optimism about the technology (Parasuraman & Colby, 2015). In terms of tax compliance intention, it would require a connection between the motivation to avoid paying taxes and the work effort to detect and prevent tax evasion intention based on the ITET (Allingham & Sandmo, 1972; Devos, 2014). These findings indicate that the TPB, TR model and ITET are useful frameworks for understanding the determinants influencing tax compliance intention and can guide the development of relevant interventions aimed at increasing students' compliance intention and reducing tax evasion.

6. Conclusions

The study's main purpose was to examine the moderating effect of technology optimism on the relationship between university students' perceived e-commerce behaviours and tax compliance intention. An extended conceptual model was developed and proposed; alongside its direct and interactive paths were analysed using the new version of SmartPLS 4. The researchers concluded that most independent variables, including perceived attitudes, subjective norms, tax awareness, and technology optimism, have a strong influence on tax compliance intention except for behavioural control among e-commerce users in universities. The researchers also concluded that technology optimism has an interactive effect in strengthening the relationship between perceived attitude and subjective norms with tax compliance intention. However, it does not strengthen the relationship between behavioural control and tax awareness with tax compliance intention among university students in Northeast Nigeria.

6.1 Theoretical implications

The study examined the relationship between e-commerce behaviour and tax compliance intention, with the moderating effect of technology optimism. It extended the TPB by adding a new predictive variable, tax awareness, and integrated the TPB, ITET, and TR model to develop the proposed conceptual model. This study provided new insights into e-commerce and tax compliance

intention, with a focus on university students' perspectives that have been limited in previous empirical studies. The findings point out that technology optimism and tax awareness are crucial factors that affect e-commerce users' behaviour and tax compliance intention. The integration of the three theories provides a comprehensive understanding of the determinants of tax compliance intention in the e-commerce context. Although previous studies have not examined that, but called for the need for such studies on e-commerce users' behaviour and related technology (Musyaffi et al., 2021; Park & Zhang, 2022) and tax compliance intention (Bani-Khalid et al., 2022). In particular, the study adds to the literature on e-Commerce users' behaviour on the need for more understanding of online users' behaviour in using new e-commerce technology to increase their tax compliance intention.

6.2 Practical implications

In encouraging e-commerce and tax compliance intention, recent tax practitioners encourage a better understanding of people's behavioural factors (Kupoluyi, Oloyede & Oyedokun, 2022; Vissaro, 2023). As a result, the current study has made an important contribution to the understanding of the factors that influence tax compliance intention among e-commerce users, particularly university students. The empirical evidence presented in this study provides tax authorities with valuable insights into e-Commerce users' behavioural factors that contribute to tax compliance intention, which can be used to corroborate the newly assented e-commerce laws. The study also sheds light on university students' technology optimism as e-Commerce users and their influence on tax compliance intention. The results indicate that when university students have a high level of technology optimism, their tendency to comply with tax obligations increases. These findings can be used by e-commerce stakeholders and researchers to differentiate between e-Commerce users' behaviours and tax compliance intentions, especially between general users and those from universities.

Additionally, the study highlights the importance of developing new regulatory policies to boost e-commerce revenue remittance from university e-commerce users. This is because government public policy also plays an essential role in promoting students' understanding of the online tax system

and obtaining vital information concerning tax and tax payment mechanisms when using e-commerce platforms in schools (Bestaria et al., 2019). The evidence presented here provides a mechanism for tax authorities to identify highly concealed e-commerce transactions, particularly those using informal e-commerce platforms not officially registered with government regulatory agencies. The new regulatory policies will boost e-commerce revenue remittance from university students as e-commerce users operating on both formal and informal e-commerce platforms in developing countries. This knowledge is essential for tax administrators to identify areas of mass tax evasion by e-commerce users and to take appropriate action to combat this issue. Therefore, the findings of this study have significant implications for the tax industry and policymakers, and they can help shape regulatory policies that enhance e-commerce revenue remittance and compliance among e-commerce users.

6.3 Limitations and future research

Despite the current study's contributions to understanding e-commerce users' behaviours, technology optimism and tax compliance intention, some limitations need to be addressed in future research. Firstly, the study's scope was limited to a few predictive variables but suggested other variables such as tax knowledge, tax education, tax more, e-commerce ease of use, usefulness and adoption. Secondly, the study only considered technology optimism as a moderating variable, leaving out the remaining three dimensions of the technology readiness index model: innovativeness, insecurity and discomfort. Future research can examine the effects of these dimensions on e-commerce users' behaviours and tax compliance intention, as well as a moderating variable such as trust. Thirdly, the study's methodology was limited to cross-sectional data collection through primary data. Future researchers can consider employing the longitudinal technique, online survey instruments, secondary data or mixed-method design, which can provide more information on e-commerce users' behaviours, technology optimism and tax compliance intention. Fourthly, the study's target population only included undergraduate students of state universities, leaving out part-time and post-graduate students, and teaching and non-teaching staff of state, private and federal

universities which future studies can consider. Future research can also determine the e-commerce industry in other geographical regions to obtain a better understanding of e-Commerce users' behaviours and tax compliance intentions in developing nations.

References

Aboelmaged, M. G. (2014). Predicting e-readiness at firm-level: An analysis of technological, organizational and environmental (TOE) effects on e-maintenance readiness in manufacturing firms. *International Journal of Information Management, 34*(5), 639-651. doi:10.1016/j.ijinfomgt.2014.05.002

Abuamria, F. M. J. (2019). The effect of deterrence factors on discourage shadow economy level and tax evasion. *International Journal of Academic Research in Accounting, Finance and Management Sciences, 9*(1). doi:10.6007/IJARAFMS/v9-i1/5725

Acheampong, P., Zhiwen, L., Antwi, H. A., Otoo, A. A. A., Mensah, W. G., & Sarpong, P. B. (2017). Hybridizing an extended technology readiness index with technology acceptance model (TAM) to predict E-payment adoption in Ghana. *American Journal of Multidisciplinary Research (AJMUR), 5*(2), 172-184.

Adam, N., Suleman, N., & Thalib, M. K. (2021). Can tax knowledge, tax awareness and socialisation increase taxpayer compliance? *Jurnal Economic Resources*, *3*(2), 9 - 15. https://doi.org/10.33096/jer.v3i2.664

Adegore, A. M., & Adegbore, A. K. (2021). E-learning readiness of Nigerian universities amid COVID-19 Era. *Journal of Applied Information Science and Technology, 14*(1), 73-84.

Aguirre-Urreta, M. I., & Rönkkö, M. (2018). Statistical inference with PLSc using Bootstrap Confidence Intervals. *MIS Quarterly, 42*(3), 1001-1020. doi:10.25300/misq/2018/13587

Ajzen, I. (1985). From intentions to actions: A theory of planned behaviour. In J. Kuhl et al. (Ed.), *Action Control* (pp. 11-39). Berlin: Springer-Verlag Berlin Heidelberg.

Ajzen, I. (1991). The theory of planned behaviour. *Organizational Behaviour and Human Decision Processes, 50*, 179-211.

Ajzen, I. (2002). Perceived behavioral control, self-efficacy, locus of control, and the Theory of Planned Behavior. *Journal of Applied Social Psychology, 32*(4), 665-683. doi:10.1111/j.1559-1816.2002.tb00236.x

Ajzen, I. (2008). Consumer attitudes and behavior. In C. P. Haugtvedt, P. M. Herr, & F. R. Cardes (Eds.), *Handbook of Consumer Psychology* (pp. 525-548). New York: Lawrence Erlbaum Associates.

Allingham, M. G., & Sandmo, A. (1972). Income tax evasion: A theoretical analysis. *Journal of Public Economics, 1*, 323-338.

Alm, J., Cox, J. C., & Sadiraj, V. (2019). Audit state-dependent taxpayer compliance: Theory and evidence from Colombia. *Economic Inquiry, 58*(2), 819-833. doi:10.1111/ecin.12864

Andikara, B., Astuti, D., & Hanum, I. U. (2023). Cross-border digital taxation challenges Indonesia's practices and perspectives. In N. Hendriyetty, C. Evans, C. J. Kim, & F. Taghizadeh-Hesary (Eds.), *Taxation in the Digital Economy: New Models in Asia and the Pacific* (pp. 221-239). New York: Taylor & Francis Group.

Andreas, A. & Savitri, E. (2015). The effect of tax socialisation, tax knowledge, expediency of tax ID number and service quality on taxpayers compliance with taxpayers awareness as mediating variables. *Procedia - Social and Behavioral Sciences, 211*, 163-169. doi:10.1016/j.sbspro.2015.11.024

Areo, O. S., & Gershon, O. (2020). Personal income tax compliance in Nigeria: A generalised ordered logistic regression. *Research in World Economy, 11*(3), 261-283. doi:10.5430/rwe.v11n3p261

Argilés-Bosch, J. M., Somoza, A., Ravenda, D., & García-Blandón, J. (2020). An empirical examination of the influence of e-commerce on tax avoidance in Europe. *Journal of International Accounting, Auditing and Taxation, 41*(100339), 1-16. doi:10.1016/j.intaccaudtax.2020.100339

Ariani, A. F., Napitupulu, D., Jati, R. K., Kadar, J. A., & Syafrullah, M. (2018). Testing of technology readiness index model based on exploratory factor analysis approach. *Journal of Physics: Conference Series, 1007*(012043), 1-9. doi:10.1088/1742-6596/1007/1/012043

Asrinanda, Y. D. (2018). The effect of tax knowledge, self assessment system, and tax awareness on taxpayer compliance. *International Journal of Academic Research in Business and Social Sciences, 8*(10), 539-550. doi:10.6007/IJARBSS/v8-i10/4762

Astuti, N. C., & Nasuon, R. A. (2014). Technology readiness and E-commerce adoption among entrepreneurs of SMEs in Bandung City, Indonesia. *Gadjah Mada International Journal of Business, 16*(1), 69-88.

Ay, M., Humta, H., & Ghafourzay, H. (2021). Examining the effect of tax understanding and tax awareness on taxpayer compliance in Kabul-Afghanistan. *Third Sector Social Economic Review: Üçüncü Sektör Sosyal Ekonomi Dergisi, 56*(1), 148-162. doi:10.15659/3.sektor-sosyal-ekonomi.21.02.1445

Bani-Khalid, T., Alshira'h, A. F., & Alshirah, M. H. (2022). Determinants of tax compliance intention among Jordanian SMEs: A focus on the Theory of Planned Behavior. *Economies, 10*(2), 30. doi:10.3390/economies10020030

Baozhuang, N., Mu, Z., Cao, B., & Gao, J. (2021). Should multinational firms implement blockchain to provide quality verification? *Transportation Research Part E: Logistics and Transportation Review, 145*(102121), 1-20. doi:10.1016/j.tre.2020.102121

Baron, R. M., & Kenny, D. A. (1986). The moderator-mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. *Journal of Personality and Social Psychology, 51*(6), 1173-1182.

Beatson, N., Gabriel, C.-A., Howell, A., Scott, S., van der Meer, J., & Wood, L. C. (2020). Just opt-in: How choosing to engage with technology impacts business students' academic performance. *Journal of Accounting Education, 50*, 100641. doi:10.1016/j.jaccedu.2019.100641

Bello, K. B., & Danjuma, I. (2014). Review of Models/Theories Explaining Tax Compliance Behavior. *Sains Humanika*, *2*(3). https://doi.org/10.11113/sh.v2n3.432

Bestaria, P., Sinagab, O., & Saudi, M. H. M. (2019). Implementation of online system: Development of a public course implications for tax the policy. *International Journal of Innovation, Creativity and Change, 6*(7), 159-171.

Bethencourt, C., & Kunze, L. (2020). Social norms and economic growth in a model with labour and capital income tax evasion. *Economic Modelling, 86*, 170-182. doi:10.1016/j.econmod.2019.06.009

Bin-Nashwan, S. A., Abdul-Jabbar, H., Dziegielewski, S. F., & Aziz, S. A. (2020). Moderating effect of perceived behavioral control on Islamic tax (Zakah) compliance behavior among businessmen in Yemen. *Journal of Social Service Research*, *47*(2), 292-302. https://doi.org/10.1080/01488376.2020.1767260

Blut, M., & Wang, C. (2019). Technology readiness: a meta-analysis of conceptualizations of the construct and its impact on technology usage. *Journal of the Academy of Marketing Science, 48*(4), 649-669. doi:10.1007/s11747-019-00680-8

Bornman, M., & Ramutumbu, P. (2019). A conceptual framework of tax knowledge. *Meditari Accountancy Research, 27*(6), 823-839. doi:10.1108/medar-09-2018-0379

Campbell, A. L. (2018). Tax designs and tax attitudes. *The Forum*, *16*(3), 369-397. https://doi.org/10.1515/for-2018-0031

Chang, Y.-W., & Chen, J. (2021). What motivates customers to shop in smart shops? The impacts of smart technology and technology readiness. *Journal of Retailing and Consumer Services, 58*, 102325. doi:10.1016/j.jretconser.2020.102325

Chao, C.-M., & Yu, T.-K. (2019). The moderating effect of technology optimism: How it affects students' weblog learning. *Online Information Review*, *43*(1), 161-180. doi:10.1108/oir-11-2016-0316

Cheng, C., Lay, K.-L., Hsu, Y.-F., & Tsai, Y.-M. (2021). Can Likert scales predict choices? Testing the congruence between using Likert scale and comparative judgment on measuring attribution. *Methods in Psychology, 5*, 100081. doi:10.1016/j.metip.2021.100081

Chin, W. W., & Marcoulides, G. A. (1998). The partial least squares approach to structural equation modeling. *Modern Methods for Business Research, 295*(2), 295-336.

Coppola, D. (2021). E-commerce worldwide – Statistics & facts. Retrieved Dec 30, 2021, from Statista https://www.statista.com/topics/871/online-shopping/#dossierKeyfigures

Cruz-Cárdenas, J., Guadalupe-Lanas, J., Ramos-Galarza, C., & Palacio-Fierro, A. (2021). Drivers of technology readiness and motivations for consumption in explaining the

tendency of consumers to use technology-based services. *Journal of Business Research, 122*, 217-225. doi:10.1016/j.jbusres.2020.08.054

Dawson, J. F. (2014). Moderation in management research: What, why, when, and how. *Journal of Business and Psychology, 29*(1), 1-19. doi:10.1007/s10869-013-9308-7

De Simone, L., Lester, R., & Markle, K. (2020). Transparency and tax evasion: Evidence from the Foreign Account Tax Compliance Act (FATCA). *Journal of Accounting Research, 58*(1), 105-153. doi:10.1111/1475-679x.12293

Değerli, A., Aytekin, Ç., & Değerli, B. (2015). Analyzing information technology status and networked readiness index in context of Diffusion of Innovations Theory. *Procedia – Social and Behavioral Sciences, 195*, 1553-1562. doi:10.1016/j.sbspro.2015.06.190

Deufel, P., Kemper, J., & Brettel, M. (2019). Pay now or pay later: A cross-cultural perspective on online payments. *Journal of Electronic Commerce Research, 20*(3), 141-154.

Devos, K. (2014). *Tax Compliance Theory and the Literature*. *Factors Influencing Individual Taxpayer Compliance Behaviour* (pp. 13-65). Dordrecht: Springer Science+Business Media.

Dom, R., Custers, A., Davenport, S., & Prichard, a. W. (2022). *Innovations in Tax Compliance: Building trust, navigating politics, and tailoring reform*. Washington, DC: World Bank.

Edward, S.-T. W. (2022). Influences of innovation attributes on value perceptions and usage intentions of mobile payment. *Journal of Electronic Commerce Research, 23*(1), 45-58.

Fjeldstad, O.-H., Schulz-Herzenberg, C., & Hoem Sjursen, I. (2012). People's views of taxation in Africa: A review of research on determinants of tax compliance. *SSRN Electronic Journal*. doi:10.2139/ssrn.2411424

Flavián, C., Pérez-Rueda, A., Belanche, D., & Casaló, L. V. (2021). Intention to use analytical artificial intelligence (AI) in services – the effect of technology readiness and awareness. *Journal of Service Management* (ahead-of-print). doi:10.1108/josm-10-2020-0378

Goksu, G. G., & Sahpaz, K. I. (2015). Comparison of tax morale of Turkish and Spanish higher education students: The samples of Sakarya University and the University of Zaragoza. *Procedia – Social and Behavioral Sciences, 186*, 222-230. doi:10.1016/j.sbspro.2015.04.027

Gou, L., & Zhang, X. (2021). Analysis on the influence factors of college students about the willingness to work in rural e-commerce. *Applied Mathematics and Nonlinear Sciences, 0*(0). doi:10.2478/amns.2021.2.00015

Grandón, E. E., Nasco, S. A., & Mykytyn, P. P. (2011). Comparing theories to explain e-commerce adoption. *Journal of Business Research, 64*(3), 292-298. doi:10.1016/j.jbusres.2009.11.015

Hair, J. F. J., Black, W. C., Babin, B. J., & Anderson, R. E. (2019). *Multivariate Data Analysis* (A. Ainscow, J. Grene, & S. Clarke Eds. 8th ed.). United Kingdom: Cengage Learning EMEA.

Hair, J. F. J., Hult, G. T. M., Ringle, C. M., & Sarstedt, M. (2017). *A Primer on Partial Least Squares Structural Equation Modeling (PLS-SEM)* (L. Fargotstein & Y. McDuffee Eds. Second Edition ed.). Thousand Oaks, California: SAGE Publications, Inc.

Hair, J. F. J., Hult, G. T. M., Ringle, C., & Sarstedt, M. (2022). *A Primer on Partial Least Squares Structural Equation Modeling (PLS-SEM)*. California: SAGE Publications, Inc.

Hair, J. F. J., Risher, J. J., Sarstedt, M., & Ringle, C. M. (2019). When to use and how to report the results of PLS-SEM. *European Business Review, 31*(1), 2-24. doi:10.1108/ebr-11-2018-0203

Hallsworth, M., List, J. A., Metcalfe, R. D., & Vlaev, I. (2017). The behavioralist as tax collector: Using natural field experiments to enhance tax compliance. *Journal of Public Economics, 148*, 14-31. doi:10.1016/j.jpubeco.2017.02.003

Haryanti, T., & Pribadi, A. (2019). E-Commerce Service Design Readiness using ITIL framework with IT Balanced Scorecard Objective (Case Study: University E-Commerce). Paper presented at the The Fifth Information Systems International Conference, Indonesia.

Haryati, A., & Tambun, S. (2022). The influence of nationalism's attitude and tax morals on taxpayer compliance through tax awareness. *Journal of Accounting, Business and Finance Research, 14*(1), 1. doi:10.20448/2002.141.1.7

Hashimzade, N., & Myles, G. (2018). *Using Agent-Based Modeling to Analyze Tax Compliance and Auditing* (S. Hokamp, L. Gulyás, M. Koehler, & SanithWijesinghe. Eds.). New Jersey, USA: John Wiley & Sons Ltd.

Herrero Crespo, Á., & Rodríguez del Bosque, I. (2008). The effect of innovativeness on the adoption of B2C e-commerce: A model based on the Theory of Planned Behaviour. *Computers in Human Behavior, 24*(6), 2830-2847. doi:10.1016/j.chb.2008.04.008

Hussain, M. F. B. M., & Raghavan, S. (2021). Interrelationships among information system quality, intention to use, perceived usefulness, technology readiness and their effect on e-commerce adoption among SMEs. *ANVESHAK – International Journal of Management*. doi:DOI: 10.15410/aijm%2F2017%2Fv6i1%2F120840

Jafari-Sadeghi, V., Garcia-Perez, A., Candelo, E., & Couturier, J. (2021). Exploring the impact of digital transformation on technology entrepreneurship and technological market expansion: The role of technology readiness, exploration and exploitation. *Journal of Business Research, 124*, 100-111. doi:10.1016/j.jbusres.2020.11.020

Jimenez, P., & Iyer, G. S. (2016). Tax compliance in a social setting: The influence of social norms, trust in government, and perceived fairness on taxpayer compliance. *Advances in Accounting, 34*, 17-26. doi:10.1016/j.adiac.2016.07.001

Juswanto, W., & Abiyunus, Y. F. (2023). Taxing the digitalized economy: An emerging markets perspective. In N. Hendriyetty, C. Evans, C. J. Kim, & F. Taghizadeh-Hesary

(Eds.), *Taxation in the Digital Economy: New Models in Asia and the Pacific* (pp. 56-81). New York: Routledge, Taylor & Francis Group.

Kesuma, S. A., Kesuma, R., Nasution, A. A., & Epriel, M. H. (2020). Online shopping customer behavior in Indonesia: A survey on accounting students. *The Romanian Economic Journal, 78*, 67-81.

Kiconco, R. I., Gwokyalya, W., Sserwanga, A., & Balunywa, W. (2019). Tax compliance behaviour of small business enterprises in Uganda. *Journal of Financial Crime, 26*(4), 1117-1132. doi:10.1108/jfc-03-2018-0031

Kogler, C., & Kirchler, E. (2020). Taxpayers' subjective concepts of taxes, tax evasion, and tax avoidance. In R. F. V. Brederode (Ed.), *Ethics and Taxation* (pp. 191-206). Lancaster, PA, USA: Springer Nature Singapore Pte Ltd.

Krieger, T. (2021). A model-theoretical analysis for digital tax administrations. *International Journal of Innovative Technologies in Economy, 2*(34), 1-12. doi:10.31435/rsglobal_ijite/30062021/7543

Kumar, S., Lim, W. M., Pandey, N., & Christopher Westland, J. (2021). 20 years of electronic commerce research. *Electronic Commerce Research, 21*(1), 1-40. doi:10.1007/s10660-021-09464-1

Kupoluyi, A. K., Oloyede, F. L., & Oyedokun, G. E. (2022). Tax administration and taxpayers' compliance In Nigeria. In M. A. Mainoma, G. E. Oyedokun, S. A. S. Aruwa, T. O. Asaolu, & R. O. Salawu (Eds.), *Taxation for Economic Development* (pp. 89-104). Lagos, Nigeria: OGE Business School.

Lestari, T., & Wicaksono, M. (2017). Effect of awareness, knowledge and attitude of taxpayers tax compliance for taxpayers in tax service office Boyolali. *International Journal of Economics, Business and Accounting Research (IJEBAR), 1*(1), 12-25.

Lewis, A. (1982). The social psychology of taxation. *British Journal of Social Psychology, 21*, 151-158.

Lucas, G.A., Lunardi, G. L., & Dolci, D.B. (2023). From e-commerce to m-commerce: An analysis of the user's experience with different access platforms. *Electronic Commerce Research and Applications, 58*(101240), 1-13. doi:10.1016/j.elerap.2023.101240

Lucas-Mas, Oliver, C., Junquera-Varela, & Felix., R. (2021). *Tax Theory Applied to the Digital Economy: A Proposal for a Digital Data Tax and a Global Internet Tax Agency*. Washington, DC: The World Bank.

Matthew, S., Walford, N. S., & Jimenez-Bescos, C. (2018). Assessing the user response to differences in functionality when visualising 3D models of cultural heritage sites using the Technology Readiness Index. *Digital Applications in Archaeology and Cultural Heritage, 10*, e00076. doi:10.1016/j.daach.2018.e00076

Memon, M. A., Cheah, J.-H., Ramayah, T., Ting, H., Chuah, F., & Cham, T. H. (2019). Moderation analysis: Issues and guidelines. *Journal of Applied Structural Equation Modeling, 3*(1), i-xi. doi:10.47263/jasem.3(1)01

Meng, F., Kyung-Soo, P., & Oh, S. W. (2017). The moderating effects of technology readiness, user traits and situational factors on usage attitude and intention to technology-based self-service. *Journal of Korea Service Management Society, 18*(3), 69-104. doi:10.15706/jksms.2017.18.3.004

Ming Ling, L., & Muhammad, I. (2006). Taxation and technology: technology readiness of Malaysian tax officers in Petaling Jaya Branch. *Journal of Financial Reporting and Accounting, 4*(1), 147-163. doi:10.1108/19852510680001587

Mishra, A., Maheswarappa, S. S., & Colby, C. L. (2018). Technology readiness of teenagers: a consumer socialization perspective. *Journal of Services Marketing, 32*(5), 592-604. doi:10.1108/jsm-07-2017-0262

Mu, D., Ren, H., & Wang, C. (2022). A literature review of taxes in cross-border supply Chain modeling: Themes, tax types and new trade-offs. *Journal of Theoretical and Applied Electronic Commerce Research, 17*(1), 20-46. doi:10.3390/jtaer17010002

Musyaffi, A.M., Sri Mulyani, S., & Suraida, I., Sukmadilaga, C. (2021). Lack of readiness of digital banking channel acceptance: Study on TAM 3 and technology readiness. *Academy of Strategic Management Journal, 20*(4), 1-18.

Na, T.-K., Lee, S.-H., & Yang, J.-Y. (2021). Moderating effect of gender on the relationship between technology readiness index and consumers' continuous use intention of self-service restaurant kiosks. *INFORMATION, 12*(7), 280. doi:10.3390/info12070280

Nurlis, N., & Ariani, M. (2020). Tax awareness moderates knowledge and modernization of tax administration on tax compliance, survey on MSME taxpayers in South Tangerang City, Indonesia. *International Journal of Management Studies and Social Science Research, 2*(5), 250-259.

Nursyirwan, V. I., & Ardaninggar, S. S. (2020). The factor analysis that influences the student purchase intention in shopee e-commerce. *Economics and Accounting Journal, 3*(2), 118-129.

Nwagwu, W. E. (2019). E-learning readiness of universities in Nigeria – What are the opinions of the academic staff of Nigeria's premier university? *Education and Information Technologies, 25*(2), 1343-1370. doi:10.1007/s10639-019-10026-0

Nwokoma, N.I., Adeoye, B.W., Oke, B., Oke, D.M., Ojapinwa, T.V., Odeleye, A.T., Iwegbu, O., & Eniayewu, A. (2022). Nigeria's economic growth and diversification: An appraisal of the economic recovery and growth plan and stakeholders' perspectives. *The Nigerian Journal of Economic and Social Studies, 64* (2): 253 - 285.

OECD. (2023). *Revenue Statistics in Africa 2022 — Nigeria*. OECD: https://www.oecd.org/tax/tax-policy/revenue-statistics-africa-nigeria.pdf

Ogunkola, E.O., & Olakojo, S.A. (2021). Free Trade Area Agreement and the economy: Theory, evidence and lessons for Nigeria. *The Nigerian Journal of Economic and Social Studies*, 63 (3): 341 - 380.

Olaniyi, M. (2023, 9th August). Nigeria Loses N20trn To Tax Underpayment – Presidential Tax Committee. *Daily Trust*. https://dailytrust.com/tinubu-vows-to-end-over-reliance-on-borrowing-for-public-expenditure/?share=mastodon

Olokundun, M., Iyiola, O., Ibidunni, S., Ogbari, M., Falola, H., Salau, O., . . . Borishade, T. (2018). Data article on the effectiveness of entrepreneurship curriculum contents on entrepreneurial interest and knowledge of Nigerian university students. *Data Brief, 18*, 60-65. doi:10.1016/j.dib.2018.03.011

Onu, D. (2016). Measuring tax compliance attitudes: What surveys can tell us about tax compliance behaviour. *Advances in Taxation*, *23*, 173-190. doi:10.1108/s1058-749720160000023006

Onu, D., Oats, L., Kirchler, E., & Hartmann, A. J. (2019). Gaming the system: An investigation of small business owners' attitudes to tax avoidance, tax planning, and tax evasion. *Games, 10*(4), 46. doi:10.3390/g10040046

Oyekunle, R. A. (2019). Electronic business in Nigerian universities: A status report *Journal of Information Science, Systems and Technology, 3*(2), 1-21.

Parasuraman, A. (2000a). Technology Readiness Index (TRI) [Database record]. *APA PsycTests*. doi:https://doi.org/10.1037/t60859-000

Parasuraman, A. (2000b). Technology Readiness Index (TRI): A multiple-item scale to measure readiness to embrace new technologies. *Journal of Service Research, 2*(4), 307-320.

Parasuraman, A., & Colby, C. L. (2015). An updated and streamlined technology readiness index. *Journal of Service Research, 18*(1), 59-74. doi:10.1177/1094670514539730

Park, H. J., & Zhang, Y. (2022). Technology readiness and technology paradox of unmanned convenience store users. *Journal of Retailing and Consumer Services, 65*, 102523. doi:10.1016/j.jretconser.2021.102523

Pratama, A. R. P., & Jin, Z. (2019). Foreign students' intention towards a China's third-party mobile and online payment platform based on Alipay. *International Journal of Informatics and Computation: Nanjing University of Information Science and Technology, 1*(1), 1-11.

Putri, W. H., Novia, S. A. T., & Nurwiyanta. (2021). E-Wallet in Technology Readiness Index Perspectives and Technical Support. Paper presented at the 3rd International Conference of Banking, Accounting, Management and Economics (ICOBAME 2020), Indonesia.

Rahman, S., Puteh, F., & Manap, N. A. (2021). Property owner's attitude towards assessment tax obligation. *Journal for Social Sciences, 24*(2), 13-17.

Ramayah, T., Cheah, J., Chuah, F., Ting, H., & Memon, M. A. (2018). *Partial least squares structural equation modeling (PLS-SEM) using SmartPLS 3.0: An updated guide and practical guide to statistical analysis* (2nd ed.). Kuala Lumpur, Malaysia: Pearson.

Richardson, M., Gorley, M., Wang, Y., Aiello, G., Pintsuk, G., Gaganidze, E., . . . Rieth, M. (2021). Technology readiness assessment of materials for DEMO in-vessel applications. *Journal of Nuclear Materials, 550*, 152906. doi:10.1016/j.jnucmat.2021.152906

Russell, H. M., Ariail, D. L., Smith, K. T., & Smith, L. M. (2020). Analysis of compassion in accounting and business students, overall and by gender. *Journal of Accounting Education, 53*, 100684. doi:10.1016/j.jaccedu.2020.100684

Saidu, M. A., Jibrin, D. U., Shagari, S. L., Kabir, M. A., & Abubakar, A. (2021a). E-commerce and tax compliance during COVID-19 Pandemic: The emerging global issue from the university perspective. *TSU-International Journal of Accounting and Finance (TSUIJAF), 1*(1), 1-10.

Saidu, M. A., Shagari, S. L., Baba, B. U., & Saidu, S. (2021b). Determinants of E-commerce users' behaviour on tax compliance intention in Nigeria: A conceptual model. *International Journal of Intellectual Discourse (IJID), 4*(1), 88-103.

Sarstedt, M., Hair, J. F., Nitzl, C., Ringle, C. M., & Howard, M. C. (2020). Beyond a tandem analysis of SEM and PROCESS: Use of PLS-SEM for mediation analyses! *International Journal of Market Research, 62*(3), 288-299. doi:10.1177/1470785320915686

Sarstedt, M., Ringle, C. M., & Hair, J. F. (2021). Partial least squares structural equation modeling. In C. Homburg et al. (Ed.), *Handbook of Market Research* (pp. 1-47): Springer Nature Switzerland AG.

Savitri, E., & Musfialdy, M. (2016). The effect of taxpayer awareness, tax socialisation, tax penalties, compliance cost at taxpayer compliance with service quality as mediating variable. *Procedia – Social and Behavioral Sciences, 219*, 682-687. doi:10.1016/j.sbspro.2016.05.051

Shaari, N., Ali, A., & Ismail, N. (2015). Student's awareness and knowledge on the implementation of Goods and Services Tax (GST) in Malaysia. *Procedia Economics and Finance, 31*, 269-279. doi:10.1016/s2212-5671(15)01229-0

Shankar, A., & Rishi, B. (2021). Convenience matter in mobile banking adoption intention? *Australasian Marketing Journal, 28*(4), 273-285. doi:10.1016/j.ausmj.2020.06.008

Sharif, S. P., & Naghavi, N. (2021). Online financial trading among young adults: Integrating the Theory of Planned Behavior, Technology Acceptance Model, and Theory of Flow. *International Journal of Human-Computer Interaction, 37*(10), 949-962. doi:10.1080/10447318.2020.1861761

Shmueli, G., Sarstedt, M., Hair, J. F., Cheah, J.-H., Ting, H., Vaithilingam, S., & Ringle, C. M. (2019). Predictive model assessment in PLS-SEM: Guidelines for using PLSpredict. *European Journal of Marketing, 53*(11), 2322-2347. doi:10.1108/ejm-02-2019-0189

Smith, E. M., González, R., & Frigolett, C. (2021). Understanding change in social-movement participation: The roles of social norms and group efficacy. *Political Psychology*. doi:10.1111/pops.12733

Solichin, M. R., & Astuti, S. (2021). Tax payment intention using Theory of Planned Behavior Approach. *Jurnal Ilmiah Akuntansi dan Keuangan, 10*(1), 11-19. doi:https://doi.org/10.32639/jiak.v9i2.723

Solichin, M. R., Astuti, S., & Mahardhika, A. S. (2021). *Tax Payment Intention Using Theory of Planned Behavior Approach.* Paper presented at the 3rd International Conference of Banking, Accounting, Management and Economics (ICOBAME 2020), Indonesia.

Soon, A. L., Derashid, C., & Bidin, Z. (2020). The influence of normative beliefs on tax-payers attitude and voluntary tax compliance intention *Indian-Pacific Journal of Accounting and Finance (IPJAF), 4*(1), 33-43. doi:https://doi.org/10.32890/ipjaf.2019.4.1.96

Syamfithriani, T. S., Mirantika, N., Daswa, Yusuf, F., & Kurniadi, E. (2021). M-commerce application acceptance analysis using Technology Readiness Index (TRI) model in Kuningan Regency. *Journal of Physics: Conference Series, 1933*(1), 012012. doi:10.1088/1742-6596/1933/1/012012

Tabachnick, B. G., & Fidell, L. S. (2019). *Using Multivariate Statistics* (Seven Ed.). United States of America: Pearson Education, Inc.

Taing, H. B., & Chang, Y. (2020). Determinants of tax compliance intention: Focus on the Theory of Planned Behavior. *International Journal of Public Administration, 44*(1), 62-73. doi:10.1080/01900692.2020.1728313

Tanya, T. Y. H. (2020). A review of tax avoidance in China. *China Journal of Accounting Research, 13*(4), 327-338. doi:10.1016/j.cjar.2020.10.001

Tofan, M., & Bostan, I. (2022). Some implications of the development of e-commerce on EU tax regulations. *Laws, 11*(1), 13. doi:10.3390/laws11010013

Tsourela, M., & Roumeliotis, M. (2015). The moderating role of technology readiness, gender, and sex in consumer acceptance and actual use of technology-based services. *The Journal of High Technology Management Research, 26*(2), 124-136. doi:10.1016/j.hitech.2015.09.003

Ushchev, P., & Zenou, Y. (2020). Social norms in networks. *Journal of Economic Theory, 185*, 104969. doi:10.1016/j.jet.2019.104969

Vik, J., Melås, A. M., Stræte, E. P., & Søraa, R. A. (2021). Balanced readiness level assessment (BRLa): A tool for exploring new and emerging technologies. *Technological Forecasting and Social Change, 169*, 120854. doi:10.1016/j.techfore.2021.120854

Villa, E., Ruiz, L., Valencia, A., & Picón, E. (2018). Electronic commerce: Factors involved in its adoption from a bibliometric analysis. *Journal of Theoretical and Applied Electronic Commerce Research, 13*(1), 39-70. doi:10.4067/s0718-18762018000100104

Vincent, O. (2021). The development of a scale to measure SMEs tax compliance in Nigeria: An adaptation of Fischer's model. *Journal of Accounting and Taxation, 13*(3), 132-143. doi:10.5897/JAT2021.0479

Vincent, O., & Ntim, C. G. (2021). Assessing SMEs tax non-compliance behaviour in Sub-Saharan Africa (SSA): An insight from Nigeria. *Cogent Business & Management, 8*(1), 1938930. doi:10.1080/23311975.2021.1938930

Vissaro, D. (2023). Developing a cooperative compliance model for developing economies: Justification, prerequisites, and administrative design. In N. Hendriyetty, C. Evans, C. J. Kim, & F. Taghizadeh-Hesary (Eds.), *Taxation in the Digital Economy: New Models in Asia and the Pacific* (pp. 82-105). New York: Taylor & Francis Group.

Wichmann, J., Leyer, M., & Altmüller, I. (2024). Do taxpayers consider quality labels as a form of recommendation for good tax preparation services? Evidence from Germany. *Heliyon*, *10*(1), e23357. https://doi.org/10.1016/j.heliyon.2023.e23357

Ying, W., So, K. K. F., & Sparks, B. A. (2016). Technology readiness and customer satisfaction with travel technologies: A cross-country investigation. *Journal of Travel Research, 56*(5), 563-577. doi:10.1177/0047287516657891

Yumin, L., & Liu, M. (2023). The People's Republic of China's tax reform in the digital economy: progress and challenges. In N. Hendriyetty, C. Evans, C. J. Kim, & F. Taghizadeh-Hesary (Eds.), *Taxation in the Digital Economy: New Models in Asia and the Pacific* (pp. 109-127). New York: Taylor & Francis Group.

Zhang, L., Smith, E., & Gouldman, A. (2020). The effects of individual values on willingness to pay and fairness perceptions of use tax on internet purchases. *Advances in Taxation* (pp.197-221). doi:10.1108/s1058-749720200000027007

Appendix I

Table 4: Summary of Adapted Measurement Items of the Study

Perceived E-Commerce Users' Behavioural Measurement Items		**Sources**
S/N	**Attitude**	
ATT2	I will not hack any e-Commerce platform application if I have the chance to do it	Taing and Chang (2020)
ATT3	I think judicious use of e-Commerce platforms is my obligation	
ATT4	I think manipulating e-Commerce platform information is very wrong	
ATT5	I always obey and follow the e-Commerce platform's guidelines	
	Behavioural Control	
BHC2	After having resources and knowledge, it would be easy for me to access the e-Commerce platform	Pratama and Jin (2019)
BHC3	E-Commerce trading fits well with the way I like to do online transactions	
BHC4	The internet connection on my device is excellent and stable to access e-Commerce platforms	
BHC5	My important colleagues assist me in using e-Commerce platforms when I face difficulties	
BHC6	I do transact e-Commerce in my country with or without tax payment	Taing and Chang 2020)
	Subjective Norms	
SJN1	Knowing or seeing my friends who use e-Commerce platforms encourages me to use it	Pratama and Jin (2019)
SJN2	My colleagues recommend the usage of e-Commerce to me	
TCI1	I intend to use e-Commerce platforms even if they deduct taxes from my transactions	Pratama and Jin (2019)
TCI2	I will agree for VAT tax to be included in my e-Commerce payments	
TCI3	Knowing more about e-Commerce taxes will increase my tax compliance	Nurlis and Ariani (2020)
TCI4	Lack of information about e-Commerce taxes will decrease users' tax compliance	
TEO2	E-Commerce technology gives me more control over business lives	Parasuraman and Colby (2015)
TEO3	I like the impression of doing e-Commerce business	
TEO4	E-Commerce products and services that use modern technologies are more convenient for me	
TEO5	Using e-Commerce helps me build stronger business relationships	
	Tax Awareness	
TXA1	I am aware of some of the existing e-Commerce taxes in my country	Taing and Chang 2020)
TXA3	I know that it is good to pay e-Commerce tax to the government	
TXA4	I have a good e-Commerce tax awareness perception	
TXA5	I know that paying e-Commerce taxes contributes to the economy of my country	