CECCAR BUSINESS REVIEW
ISSN 2668-8921 • ISSN-L 2668-8921
Nº 9/2024
www.ceccarbusinessreview.ro

The Nexus of Quality of the e-Tax System, Taxpayers' Attitude, Multiple Mediators, and Tax Compliance Behaviour: A Theoretical Paper

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Abstract

Several works of the extant literature have explored tax compliance behaviour. Some studies investigated factors that have a positive effect on tax compliance behaviour. In contrast, some studies use individual theories, and other empirical studies focus on institutional theories to explain tax compliance behaviour. Moreover, some literature has opined that tax compliance behaviour is based on economic factors, while other studies have expounded on social factors. Yet there is a tiny debate regarding the probability of amalgamating both the quality of the e-tax system and attitude towards the e-tax system using multiple mediators to explain tax compliance behaviour. This paper advances the model suggesting that tax compliance behaviour is the result of the interplay of the quality of the e-tax system (employing the IS Success Model) and the attitude towards the e-tax system (arraying the technology acceptance model and the theory of planned behaviour). We suggest that both the quality of the e-tax system and the attitude towards the e-tax system are considerable constructs in expounding on tax compliance behaviour through multiple mediators (user satisfaction and behavioural intention).

Keywords: system quality, information system success model, theory of planned behaviour, technology acceptance model, tax compliance behaviour

JEL classification: H21, H26, H3, H87

To cite this article: Faustine Juma Masunga, *The Nexus of Quality of the e-Tax System, Taxpayers' Attitude, Multiple Mediators, and Tax Compliance Behaviour: A Theoretical Paper*, *CECCAR Business Review*, Nº 9/2024, pp. 49-64, http://dx.doi.org/10.37945/cbr.2024.09.06

1. Introduction

Tax compliance behaviour is a body of knowledge contended in terms of social, psychological, economic, theoretical, and practical analysis of public finance (Ekpulu *et al.*, 2016). Torgler (2003) argues that taxpayer behaviour is simply predictable, as it is influenced by several aspects. Largely, obedient taxpayers are expected to obey the tax rules and regulations administering tax issues. That means some taxpayers are honest, intrinsic and social, who are motivated by internal factors and those who voluntarily comply with all aspects of the tax laws. However, some taxpayers fail to comply with the tax laws and have low tax morale. The low tax compliance behaviour may result from non-keeping tax receipts, failure to file the declaration or revenue returns, minimizing assessed tax outstanding by instalment, irresponsible paying tax, creating deceitful or distorted declarations and helping and backing not to comply (URT, 2015).

Theoretically and empirically, the factors devoted to explaining the reasons for low tax compliance behaviour are inadequate and are based on basic models (Abrie & Doussy, 2006). A basic model of taxpayer compliance behaviour

relies on the expected utility theory which expounds on regulating tax laws, tax rates, penalties and interests (Alm, 2014; Bagchi & Dušek, 2021; Marandu *et al.*, 2015). The expected utility theories have been criticized by extant hodgepodge studies, because they presume taxpayers are rational utility maximisers who calculate the risk of being caught and the benefits of tax evasion. Therefore, the basic models' behaviour is construed into assumptions that many taxpayers are tax evaders, while the fact is that many taxpayers are compliant (Bătrâncea *et al.*, 2012). Empirical studies on studying tax compliance behaviour also used different factors to examine the e-tax system and tax compliance (Kiguro Kamau, 2014; Mandari *et al.*, 2017; Mongwaketse, 2015). These studies used factors like the sustainability of the system, awareness, cost, trust in the system, effort expectancy, performance expectancy, and facilitating condition (Chen & Zhou, 2016; Venkatesh *et al.*, 2016) and those ranging from psychological factors to sociological factors (Ajzen & Fishbein, 2004; DeLone & McLean, 2003).

While it is agreed that psychological and sociological factors have a direct influence on tax compliance behaviour, there is a gap in the empirical studies about how the quality of the e-tax system (QUAETS) (information quality, system quality and service quality) and attitude towards the e-tax system (ATTETS) (perceived ease of use of the e-tax system and perceived usefulness of the e-tax system) interplay to expound tax compliance behaviour (Bătrâncea *et al.*, 2012). Drawing from the IS Success Model, TAM (technology acceptance model) and TPB (theory of planned behaviour) (Ajzen, 2012; Davis & Venkatesh, 1996; DeLone & McLean, 2003), this paper advances a model proposing that tax compliance behaviour is the result of the quality of e-tax system (that is, the information quality, system quality and service quality received by taxpayers from using the system) and attitude towards the e-tax system (perceived ease of using the system and perceived usefulness of the system).

Our contribution of this conceptual paper is laid on the QUAETS and ATTETS literature by suggesting that the link between the quality of the e-tax system (using the IS Success Model) and the attitude towards the e-tax system (using TAM and TPB) are important constructs in understanding taxpayers' tax compliance behaviour. The paper ensues as follows: The first discussion is on the quality of the e-tax system constructs, followed by the attitude towards the e-tax system on tax compliance behaviour, the theoretical model (Figure 1) with the discussion and their associated propositions regarding information quality, system quality, service quality, and user satisfaction, perceived ease of use, perceived usefulness and behavioural intention. The implication of the model for future studies and practice is also revealed.

2. Literature review

The review of empirical literature was summarised based on the author of the article, the study area, the topic studied, variables or constructs used, the relationship studied and analytical methods and use of analysis studied as summarized in table below.

2.1. Matrix summary of the selected empirical literature reviewed

Matrix summary of the selected empirical literature reviewed

S/N	Author and year	Area of study	Theme/topic studied	Variables studied and the theory/model	Relationship identified	Statistical method(s) and unit of analysis
1	Chatama (2013)	Tanzania	*The Impact of the Information Communication Technology (ICT) Tax System on Taxation*	**Three variables:** the computerised tax system, taxation, and tax administration **Unknown theory/model**	ICT improves tax administration, which enhances tax compliance.	Descriptive statistics **Large taxpayers and staff**
2	Rahayu *et al.* (2021)	Indonesia	*The Effect of Perceived Ease of Use and Usefulness of e-Filing on Taxpayers' Compliance: Taxpayer Behavioural Intention and a Mediating Variable*	**Four variables:** perceived ease of use, perceived usefulness, behavioural intention, and tax compliance behaviour **TAM and TPB**	Perceived ease of use (PEOU) and perceived usefulness (PU) affect tax compliance behaviour (TCB). Behavioural intention (BI) mediates the effect of PEOU and PU on TCB.	Pass analysis with linear regression analysis **100 individual taxpayers**

S/N	Author and year	Area of study	Theme/topic studied	Variables studied and the theory/model	Relationship identified	Statistical method(s) and unit of analysis
3	Mustapha (2013)	Malaysia	*The Impact of Perceived Ease of Use and Perceived Usefulness on an Online Tax System*	**Three inputs:** perceived ease of use, perceived usefulness, and online tax system **TAM**	The direct relationship between PEOU and PU of the online tax system affects TCB.	Confirmatory factor analysis and exploratory factor analysis **220 small and medium taxpayers**
4	Night & Bananuka (2019)	Uganda	*The Mediating Role of the Adoption of an Electronic Tax System in the Relationship Between Attitude Towards Electronic Tax System and Tax Compliance*	**Three variables:** attitude towards the e-tax system, adoption of the e-tax system, and tax compliance **TAM**	Adoption of an electronic tax system and attitude towards electronic tax systems are significantly associated with TCB.	MedGraph program (Excel version) **214 managers from small business enterprises**
5	Fatma *et al*. (2019)	Indonesia	*The Antecedent of the Use of the Attitude Towards the e-Tax System on Taxpayer's Compliance*	**Four variables:** perceived ease of use, perceived usefulness, the use of the e-tax system, and tax compliance behaviour **TAM**	The application of an e-tax system improves TCB.	Partial Least Square (WarpPLS) **Unknown unit of analysis**
6	Rakhmawati *et al*. (2020)	Indonesia	*Influence of TAM and UTAUT Models of the Use of e-Filing on Tax Compliance*	**Five variables:** perceived ease of use, perceived usefulness, facilitating condition, social influence, and tax compliance behaviour **TAM and UTAUT**	PEOU does not affect TCB. PU has a positive effect on TCB.	PLS-SEM with SmartPLS 3.0 **100 taxpayers**
7	Chumsombat (2015)	Thailand	*User Evaluations of Service Quality on e-Tax Filing Satisfaction Within the Public Sector*	**Four variables:** service quality, information quality, system quality, user satisfaction and e-filing system **D&M model**	A positive significant influence is between service quality (SERQ) and USERSAT on the e-filing system.	CB-SEM with AMOS version 21 **415 e-filers**
8	Widiastuti *et al*. (2019)	Indonesia	*The Influence of System Quality, Information Quality and Service Quality on User Acceptance and Satisfaction and Its Impact on Net Benefits*	**Six variables:** information quality, system quality, service quality, intention to use, user satisfaction, and net benefit **TAM**	Information quality, system quality, and service quality affect both user satisfaction and net benefit.	PLS-SEM SmartPLS 3.2.8 **93 lecturers**
9	Hamid (2014)	New Zealand and Malaysia	*Tax Compliance Behaviour of Tax Agents: A Comparative Study of Malaysia and New Zealand*	**Two non-economic factors:** attitude and ethical sensitivity **Three economic factors:** the amount of risk involved, the trade-off between costs and benefits, and the probability of being penalized **TPB**	Both economic and non-economic factors affect tax compliance behaviour.	PLS-SEM The study is based on prediction. **1,500 accounting firms, tax consultants, and tax practitioners**

S/N	Author and year	Area of study	Theme/topic studied	Variables studied and the theory/model	Relationship identified	Statistical method(s) and unit of analysis
10	Smart (2012)	New Zealand	*The Application of the Theory of Planned Behaviour and Structural Equation Modelling in Tax Compliance Behaviour*	**Five non-economic factors:** beliefs, social, societal norms, perceived behavioural control and attitude **One economic factor:** penalty **TPB**	Beliefs, social and societal norms, perceived behavioural control and attitude are good predictors of TCB. However, the penalty was insignificant when tested with TCB.	PLS-SEM **1,000 tax agents, tax lawyers, and tax residents**
11	Omary (2022)	Tanzania	*Determinants of Tax Compliance Among Small and Medium Enterprises in Tanzania: Insights from Ilala Municipality*	**Three variables:** economic, taxpayers, and institutional factors **Economic deterrence theory and Sandmo and Allingham's theory**	All the factors (economic, taxpayers, and institutional) influence tax compliance.	Multiple Linear Regressions **98 small and medium enterprises**
12	Wasao (2014)	Kenya	*The Effect of the Online Tax System on Tax Compliance Among Small Taxpayers*	**Three variables:** online filing, online registration, and online payment **Ability to pay theory and Benefit theory**	Online systems do affect tax compliance as far as registration, filing, and payments are concerned.	Correlation and regression data **160 managers and taxpayers**
13	Yong *et al*. (2019)	Australia	*Tax Compliance in the New Millennium: The Variables of Understanding*	**Five variables:** tax system, probability of detection, tax rate, tax morale, and tax compliance **Four theories: prospect, deterrence, cognitive structure, and agency theory**	The tax system, probability of detection, tax rate, and tax morale are related to tax compliance behaviour.	Text mining software, Leximancer, to visualize the frequency and co-occurrence of concepts and themes **717 articles**
14	Kamau (2014)	Kenya	*The Adoption of Technology as a Strategic Tool in Enhancing Tax Compliance*	**Two variables:** information communication technology, and tax compliance behaviour **No theory to guide the study**	The adoption of technology does impact the tax compliance levels of large taxpayers.	Linear regression **62 large taxpayers**
15	Kirchler *et al*. (2014)	USA	*Cooperative Tax Compliance from Deterrence to the Difference*	**Slippery Slope framework with variables from psychology:** attitude towards taxation, social norms, and perceived behaviour **Economic variables:** fear of detection, fines, trust in the authority, and trust in government	Psychological factors have led to changes in the behaviour of taxpayers towards compliance.	

S/N	Author and year	Area of study	Theme/topic studied	Variables studied and the theory/model	Relationship identified	Statistical method(s) and unit of analysis
16	Marandu *et al.* (2015)	Indonesia, UK, Turkey, Malaysia, Iran, Nigeria, USA, Botswana, Korea, Canada, and Tanzania	*Determinants of Tax Compliance: A Review of Factors and Conceptualization*	**Economic and non-economic factors** **TPB**	Non-economic factors are good predictors of TCB. However, the study stressed that tax policymakers are advised to discontinue using coercive methods (economic methods) because they normally force tax compliance behaviour.	Regression analysis, factor analysis, and Mann-Whitney U test Data were from 18 empirical studies. **Individual taxpayers and students, tax officers, tax consultants, firms, and graduates**
17	Palil *et al.* (2013)	Indonesia	*Taxpayers Compliance Behaviour: Economic Factors Approach*	**Four factors:** the probability of being audited, the perception of government spending, tax rates, and the role of the tax authority	All four factors affect tax compliance behaviour.	Multiple regression, Ordinary Least Squares **1,073 individual taxpayers**
18	Mannan *et al.* (2020)	Dhaka, Bangladesh	*Socio-Economic Factors of Tax Compliance: An Empirical Study of Individual Taxpayers*	**Five variables:** perceived fairness, tax penalty, taxpayer's perception of government spending, compliance cost, and compliance decision referrals	The results indicated those penalties, perceived fairness and taxpayers' perception of government spending revealed significant effects. However, compliance costs and compliance decisions were not significant.	Ordered logistic regression **385 individual income taxpayers**
19	Ongwamuhana (2011)	Tanzania	*Tax Compliance in Tanzania: An Analysis of Law and Policy Affecting Voluntary Taxpayer Compliance*	**Four variables:** governance, compliance, tax policy, and tax administration	Tax legislation and tax policy formulation were not inclusive, there were too many taxes administered by the TRA, the tax rates were high and were not aligned with the ability to pay, and the tax burden was not fairly distributed.	Trends and discrepancies, tax laws and policies examined

Source: Researcher conceptualization from different literature.

2.2. Economic and psychology models used to study tax compliance behaviour

Tax compliance behaviour can be discussed from multiple disciplinary contexts ranging from the economy, sociology, psychology, law, accounting and finance (Loo *et al.*, 2010; Smart, 2012). Evidence from past literature espoused tax compliance behaviour based on economic models, but sparse on psychological models (Alm *et al.*, 1995; Hamid, 2014).

As Hamid (2014) reveals, tax compliance is either a problem explained through an economic model or a behavioural-based approach. Allingham and Sandmo (1972) contend that taxpayers are rational utility maximisers

who calculate the benefits of compliance and the ability to be detected for not complying. The economic model of tax compliance relates economic benefits or costs to the promotion of tax compliance.

Different factors such as tax rates, penalties, interest, and auditing are frequently and commonly used to predict tax compliance behaviour. The work of Becker in 1968 introduced the idea of crime and punishment discussed in the economic model. (Kirchler *et al.*, 2008) The idea of Becker was centred on the argument that individuals are rational and make decisions before being involved in a crime (choosing between the risk of evasion and the benefit of compliance). Both economic and non-economic approaches are used to study tax compliance behaviour. However, the economic-based approach emphasizes more on compulsory compliance, which has less impact on tax compliance than is the case with behavioural-related factors that emphasize voluntary tax compliance behaviour and have a powerful impact on tax compliance (Nguyen *et al.*, 2019a). Studies on economic factors had different results. For instance, Palil *et al.* (2013), who used factors such as the probability of being audited, the perception of government spending, tax rates, and the role of the tax authority, confirmed that the probability of being audited and tax rates were more influential on tax compliance behaviour. Aljaaidi *et al.* (2011) revealed that keeping tax rates low, optimum level of penalty, maintaining tax fairness, and spending the collected tax revenue on public spending has significant effects on tax compliance behaviour.

- ***The economic-based approaches to tax compliance behaviour***

Under this subsection, different economic models of tax compliance behaviour are described, which subsume the crime model of tax compliance behaviour, the optimal level of declared income model, the income effect model, and the classical model of tax compliance behaviour. The crime model of tax compliance behaviour was first introduced by Backer in 1968, who argued that individuals make rational decisions before being involved in a crime.

Therefore, this model of Becker involves choosing different types of risk before committing a crime. The idea of Becker was later extended and used in the taxation discipline by Allingham and Sandmo (1972). Their idea formed the foundation of an economic-based approach to studying tax compliance behaviour. The model of Allingham and Sandmo (1972) is centred on the notion that taxpayers decide to comply or not to comply, by comparing the cost of not complying and the amount paid as a tax after the deduction of the required tax. When it is found that the cost of not complying is higher than the tax paid, the taxpayer decides to comply *ceteris paribus*.

Secondly, the optimal level of the declared income model was proposed by Allingham and Sandmo (1972) and discussed in Abdul *et al.* (2021). Optimal income level assumes that the taxpayer is a rational utility maximiser. The taxpayer is uncertain about the probability of being audited. Therefore, he/she normally chooses what best maximises his/her expected utility. For instance, if a taxpayer understates his/her income by a certain amount of income and he/she is assured that auditing will not be conducted, then he/she will continue evading tax, and the amount evaded will continue to increase.

Thirdly, the income effect model of tax compliance behaviour assumes that when the income tax rate increases, it is likely that the cost of compliance will increase. The substitution effect generated by an increase in income tax rate will lead many taxpayers to mitigate from complying with taxes (Allingham & Sandmo, 1972). The model of income effect is centred on the notion that taxpayers are assumed to be risk averse that they do not like to engage in risk.

Fourthly, the classical model of tax compliance behaviour establishes the beginning of the theoretical model of tax evasion (Allingham & Sandmo, 1972). The classical model of tax compliance behaviour is not only important from a theoretical perspective but also from an empirical perspective. The model is used to study a firm's decision-making practices with tax evasion and assists in the formulation of different financial policies under an enforcement approach.

Despite the importance of Allingham and Sandmo's (1972) model to studying a variety range of economic-based studies, the model has been criticised for assuming that the penalty imposed on the taxpayer is proportional to the amount of tax evaded, without considering the undeclared income. Therefore, the increase in tax compliance behaviour is assumed to occur because some income is not declared by taxpayers.

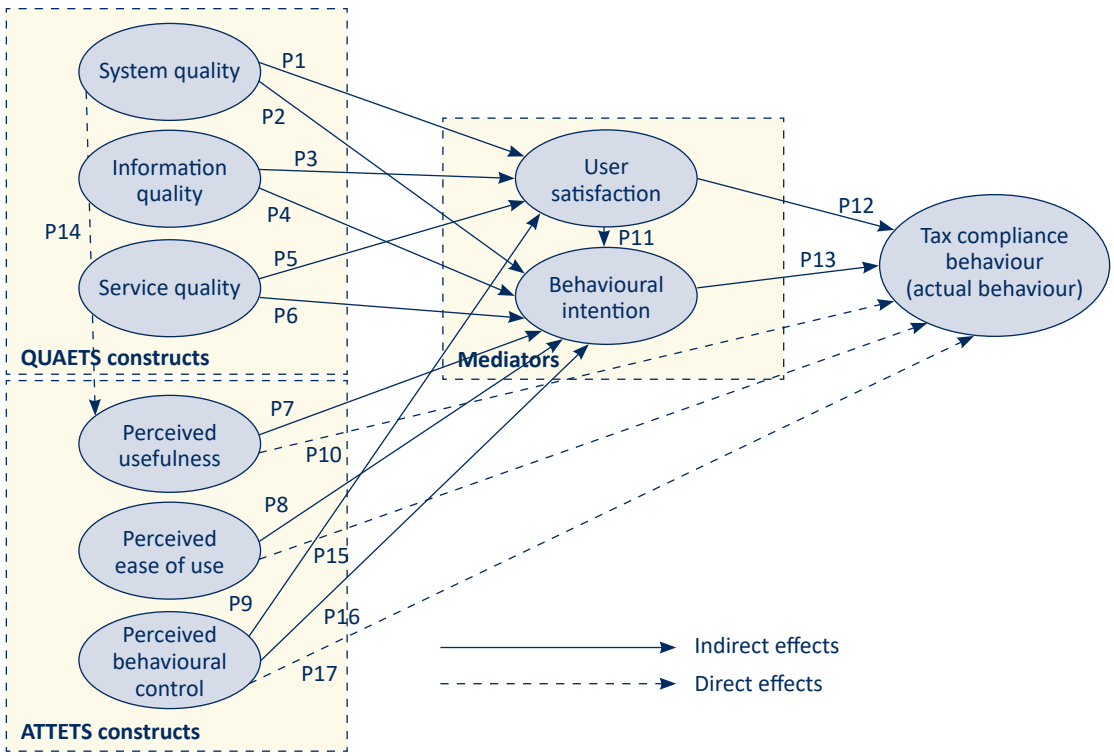
■ ***The non-economic based approaches (psychological or behavioural models) of tax compliance behaviour***

The economic-based approach has been subjected to criticism, that is grounded on the fact that the economic-based approach assumes that taxpayers are unchanging and are utility maximisers. The economic-based approach insists that taxpayers anticipate the risk of evading tax, and the benefit obtained from paying taxes (Allingham and Sandmo, 1972). Empirical studies suggest that some taxpayers are honest, and some are not ready to evade tax, even though the chance to engage in such behaviour is high (Bătrâncea *et al.*, 2012).

Therefore, the weaknesses of economic models have paved the way for instituting a behavioural-based approach to studying tax compliance behaviour. The behavioural-based approach is built in psychological and sociological proxies. Under the behavioural approach, taxpayers are not seen as rational and utility maximisers but individuals who are motivated to pay taxes based on different determinants, including feelings, perceptions, attitudes, norms, and other factors that motivate taxpayers to pay taxes voluntarily (Bătrâncea *et al.*, 2012; Kirchler *et al.*, 2008). An example of a behavioural-based approach model that constitutes both psychological and social determinants is a *Slippery Slope*.

The Slippery Slope model represents two factors: trust in the authorities and power of the authorities. Trust in the authorities refers to the general perceptions of individuals and certain social groups that authorities responsible for taxes are generous and work for the betterment of the taxpayers. Power of authorities refers to the taxpayers' opinion of the potential of tax officers to identify unlawful tax evasion and to punish those who evade taxes (Kirchler *et al.*, 2008). The framework dictates that an increase in the power of the authorities to detect tax evaders leads to enforced tax compliance behaviour, whereas an increase in trust in the authorities motivates voluntary tax compliance behaviour.

Based on the reviewed extant studies, most of this literature shows the combination of two theories to explain the adaptation and acceptance of new technology for tax compliance behaviour. This study, however, suggests the combination of three theories that provide robust and sufficient constructs in explaining a complex tax compliance behaviour model (Bhattacharjee, 2012). The suggested conceptual model is explained here below:



Quality of the e-tax system, attitude towards the e-tax system, user satisfaction, behavioural intention, and tax compliance behaviour

Source: Suggested model from TPB, IS Success Model, and TAM.

3. Quality of e-tax system

Although there is much work done to explain tax compliance behaviour, some literature on tax compliance behaviour was based on economic and social factors (Allingham & Sandmo, 1972; Macdonald & Pyle, 2017). The inception of electronic taxes has made researchers change their discussions of tax compliance behaviour (Odd-Helge, 2019; Ofurum *et al.*, 2018). But what remains here is the extension of models to expound tax compliance behaviour based on the quality of the e-tax system and the attitude towards the e-tax system. This article tries to suggest integrated models for studying tax compliance behaviour. The integrated models are believed to provide adequate explanations of the phenomenon of interest, based on the adequate set of constructs and multiple relationships from the consolidated models (Bhattacherjee, 2012). Besides, the integrated models provide a wide range of vision to researchers, causing them to have important concepts to expound on the phenomenon (Whetten, 1989). The quality of the e-tax system is made up of the service quality of the system, information quality, and system quality.

4. The dimensions of the quality of the e-tax system

While different scholars have used the IS Success Model to explain the quality of the system ending on the behavioural intention, increasingly, researchers suggest the use of the IS Success Model to explain the actual behaviour (tax compliance behaviour for this study) (Guimaraes *et al.*, 2009; Halawi *et al.*, 2008).

4.1. System quality

System quality is the individual's awareness of the use of the system. This embraces the accessibility of the system, the usability of the system, the easiness of the system, the opportune response of the system, and user expectations of the system (Guimaraes *et al.*, 2009; Halawi *et al.*, 2008). System quality to user satisfaction is considerable if users have the required awareness of the use of the system and feel that the system is effortless in fulfilling their expectations (Rana *et al.*, 2012). Therefore, system quality is influenced by flexibility and the speed of processing work which reflects its efficiency and effectiveness (Rahman *et al.*, 2017).

Chen *et al.* (2015) assert that the satisfaction of taxpayers with the use of the system depends on the reliability of the system. Taxpayers see the system as available whenever is required, and as efficient and effective if the system has the required security. The quality of the system is defined in terms of the ability of the system to meet the requirements of the users (DeLone & McLean, 2003). The higher the system quality, the more desirability of the information received from the system (Laumer *et al.*, 2017). Baker *et al.* (2014) asserts that a rigorous electronic system should provide easy and swift feedback. The combined system quality characteristics (stability, simplicity of use, and ability to interact) affect user satisfaction (Chang & King, 2005; DeLone & McLean, 2003; Wang & Liao, 2008).

Therefore, we propose more correctly:

✓ *Proposition P1: The system quality will be directly associated with user satisfaction.*

✓ *Proposition P2: The quality of the system derived from the use of the e-tax system will be indirectly related to tax compliance behaviour.*

4.2. Information quality

Information quality is the key element that affects user satisfaction and intention to use the system (Mohammadi, 2015). In the context of the e-tax system, information quality requires providing information that is accurate, inclusive, widespread, relevant, and modern to the users (DeLone & McLean, 2003; Ramayasa, 2015). Information quality affects both directly and indirectly user satisfaction and intention to use, which both affect users' actual behaviour (Hassanzadeh *et al.*, 2012).

Laumer *et al.* (2017) affirm that information quality can contribute to both user satisfaction and actual use. In introducing the system, an organization is required to ensure that the system is aligned with the requirements of the users. Information quality captures the issue of the content of the system, which includes the preciseness of the system, completeness of the system, and the latest version of the system. The notion of information quality on actual behaviour is also delineated by Hassanzadeh *et al.* (2012), Chen *et al.* (2015), Rai *et al.* (2002), and Tiana *et al.* (2019) that both user satisfaction and actual behaviour depend on the information quality.

The completeness of the system and relevant, sufficient and precise information create satisfaction for the users of the system and the actual usage. Widiastuti *et al.* (2019) conducted a study on the influence of system

quality, information quality, and service quality on user acceptance and satisfaction and its impact on actual benefit. The study employed Structural Equation Modeling based on variants that are popular on Partial Least Squares. The findings showed that there is a significant influence of information quality, system quality, and service quality on system user satisfaction. User satisfaction is achieved when the expectations on the use of the system are achieved. The more the system users expect that the quality of the information received is high, the system users will be more satisfied with the use of the system which impacts actual behaviour. If the system is accurate and fulfils the expectations of the users, it will improve the satisfaction of the users.

The results of this study agreed with the findings by Saha *et al.* (2012), Sharma and Lijuan (2015), and Almaiah and Alismaiel (2019), who asserted that information quality has a significant effect on user satisfaction and intention to use the system. The studies further observed that user satisfaction with the system has an influence on actual usage of the system (actual behaviour) that is, there is an indirect relationship between information quality and actual behaviour through user satisfaction with the system. The quality of the information from the e-tax system plays a great role in the satisfaction of users (Wang & Liao, 2008). If the information provided by the system is complete, reliable, relevant, responsive, and timely, it would lead to correct ascertainment and payment of taxes and enable taxpayers to fulfil their purposes (Chen *et al.*, 2015). Therefore, users of the e-tax system would experience contentment with using quality information to fulfil their tax payment procedures better.

✓ *Proposition P3: The information quality will be directly associated with user satisfaction.*

✓ *Proposition P4: The quality of information derived from the use of the e-tax system will be indirectly related to tax compliance behaviour.*

4.3. Service quality

Service quality is an important element that is designed to provide well-timed, reassuring, understanding, reactive, reliable and accurate services to users from the e-tax system perspective. The quality of the service received from the use of the e-tax system enhances user satisfaction and actual behaviour (Venkatesh *et al.*, 2016). That is when users of the e-tax system expect improved services, fulfil expectations of the performance and efforts increase the likelihood of using the system (Floropoulos *et al.*, 2010). Reliable and complete services from the system increase the satisfaction of the users and the actual behaviour. In other arguments, the better the quality services of the e-tax system received by users, the better the increased user satisfaction which affects tax compliance behaviour. Chumsombat (2015) asserts that the quality of the service received from using the system has a significant effect on user satisfaction.

Consistent results were confirmed by Chen *et al.* (2015), Aguinis *et al.* (2017), Hamdollah and Baghaei (2016), Hammouri and Abu-Shanab (2017), and Reddy (2014), who discoursed that consistent and complete services from the system increase user satisfaction and the actual behaviour.

Conversely, Agbor (2011) and Finn (2011) had a conflicting observation of service quality on actual behaviour through user satisfaction. Their findings were in support of the view that service quality does not influence user satisfaction, but a significant effect has been recorded between user satisfaction and actual behaviour. When taxpayers are satisfied with the system in place, they improve their compliance behaviour. Therefore, we propose more correctly:

✓ *Proposition P5: The service quality will be associated with user satisfaction with the system.*

✓ *Proposition P6: The service quality received from using the e-tax system will be positively related to tax compliance behaviour indirectly.*

5. Dimensions of taxpayers' attitude towards the e-tax system

The attitude towards a certain technology is explained by the technology acceptance model (Davis, 1986). TAM is extensively used for elucidating factors contributing to the acceptance and use of technology (Tahar *et al.*, 2020). The model assumes that the acceptance and use of new technology influence their decision and intention to use the technology (Davis, 1986; Venkatesh & Davis, 2000). Some variables identified by the Technological Acceptance Model include perceived ease of use, perceived usefulness, and behavioural intention to use the system.

5.1. Perceived ease of use of the e-tax system

This is the taxpayers' perception of the extent of using the system. This variable is related to how the taxpayer perceives that using a certain technology will assist in using less energy (effortless) (Davis, 1986). If the system is

designed in the way of assisting users to apply less effort, it defines the easiest system (Tahar *et al.*, 2020; Teo, 2011). If the system is made easy to use, it fosters positive intention toward using that system (Hamid *et al.*, 2016). The system is defined to be easy to use if it satisfies the users. The ease of use of the system is not only interpreted in terms of ease of learning to use the system but also in the way users find it easier to do the job than when it was done manually (Nguyen *et al.*, 2019b). The ease of the system to use affects the intention to adopt and use the system which affects tax compliance behaviour. We suggest:

✓ *Proposition P7: Perceived ease of use of the e-tax system will affect the behavioural intention to use the system and tax compliance behaviour.*

5.2. Perceived usefulness of the e-tax system

Perceived usefulness is a considerable factor in the acceptance and use of the system. It measures the productivity, effectiveness, and efficiency of the technology (Isaac *et al.*, 2016). It assumes that the use of a certain technology will improve the performance of the work done. Empiricism studies have identified that perceived usefulness affects the intention to use the system, which ultimately affects tax compliance behaviour (Abdullah *et al.*, 2017; Mustapha, 2013; Tahar *et al.*, 2020; Venkatesh & Davis, 2000).

✓ *Proposition P8: The perceived usefulness of the e-tax system will affect the intention to adopt and use the e-tax system and tax compliance behaviour.*

5.3. Behavioural intention to use the system

Behavioural intention is the strength of a responsive strategy to perform the intended behaviour (Rahayu *et al.*, 2021). Behavioural intention is influenced by the reiteration of action and consistent use of the system. It is anticipated to intervene in the direct effect of perceived usefulness and perceived ease of use on actual behaviour (Budu *et al.*, 2018). That means the level of perceived usefulness of the system and its indication of ease of use is expounded by behavioural intention. Behavioural intentions are instructions that people give to themselves to behave in certain ways (Forzeh *et al.*, 2022). From a psychological perspective, BI is a person's motivation to perform certain behaviours (Godin *et al.*, 2007). That is, it is explained in terms of to do or not to do the effort involved in doing the action. Behavioural intention lies at the heart of theories and models. Based on the theory of reasoned action, behavioural intention is used as a mediator to mediate all the constructs of the theory on a given outcome construct. The behavioural intention has been discussed from different perspectives, like online payment systems (Rahman *et al.*, 2017), e-learning (Ofurum *et al.*, 2018; Mohammadi, 2015), online purchase (Hsu *et al.*, 2014), health-related behaviour (Ein-Dor *et al.*, 1981). However, this study stresses the use of behavioural intention as a mediator variable to predict and explain the nature of the relationship between attitude and tax compliance behaviour.

5.4. User satisfaction with the e-tax system

User satisfaction is the point at which users of the system consider that the system they use meets their requirements (Sun *et al.*, 2015). It is the measure of the effective interface between the e-tax system and the users of the system (DeLone & McLean, 2003). User satisfaction is measured through the effectiveness of the system, the level of satisfaction, the efficiency of the system, and the adequacy of the system (DeLone & McLean, 2003; Lee & Wu, 2011; Teo, 2011). It is an effective construct used in several studies to estimate the productivity of any given system (Gupta *et al.*, 2015). The system that assists the users in meeting their requirements enhances user satisfaction (Monem *et al.*, 2013). If the system does not assist the users in meeting their desires, they become dissatisfied (Fang *et al.*, 2011).

In social science research, user satisfaction can be used as a mediator to explain the relationship between the system quality and the actual benefit (Wahyudi *et al.*, 2017). User satisfaction is the construct used in numerous studies to evaluate the success of any given system (DeLone & McLean, 2003). High user satisfaction leads to favourable behavioural intentions, whereas low user satisfaction leads to unfavourable behavioural intentions (Rençber, 2020). Gupta *et al.* (2015) claim that taxpayers are more satisfied with the system when their requirements are met. In the case of online tax filing, the filing process must be easy to use, forbearing if errors are made, convenient, of high service quality and free of superfluous risks.

5.5. Perceived Behavioural Control (PBC)

PBC is one of the constructs that was added to develop the theory of planned behaviour (TPB) (Ajzen & Fishbein, 1975). The construct was supplemented to recount the behaviours that are not under complete deliberate control. PBC is the assumption of ease or exertion involved in the execution of the behaviour (Ajzen, 1991). PBC has been found to have a direct influence on behavioural intention and indirectly on actual behaviour and subsumes all anticipated barriers concerning the performance of the behaviour of interest. The construct encompasses factors like the buoyancy of performing the behaviour, perceived simplicity or difficulty of performing the behaviour, availability of resources to perform the behaviour and the conjecture cost and hurdles of performing the behaviour. PBC being one of the constructs of TPB has not been a successful factor in influencing tax compliance behaviour (Muzakkir *et al.*, 2019; Lin & Chen, 2011). It has been contended that perceived behavioural control has a significant effect on behavioural intention and not on actual behaviour (Muzakkir *et al.*, 2019; Nurwanah *et al.*, 2018). Studies evaluated tax compliance behaviour with PBC concentrated more on behavioural intention and failed to identify the link between perceived behavioural control and user satisfaction. User satisfaction is an important factor in predicting tax compliance behaviour (Chumsombat, 2015; Venkatesh *et al.*, 2016). This study advances the model that presumes the link between perceived behavioural control and user satisfaction.

6. Discussion and implications

An understanding of different factors why some taxpayers comply, and others do not comply is the focus of tax compliance behaviour (Abrie & Doussy, 2006). Our model contributes to this field by suggesting that the integration of the quality of the e-tax system and attitude towards the e-tax system through mediator variables are considerable in explaining tax compliance behaviour. This argument is consistent with an emergent body of research that suggests that social psychological and economic factors are important in expounding tax compliance behaviour (Dečman & Klun, 2015; DeLone & McLean, 2003; Zaidi *et al.*, 2017).

While the outcome variable in the proposed model is tax compliance behaviour, the model is silent concerning the way the explained variable can be translated into improved tax compliance behaviour and the integration of taxpayers' attitude and quality of the e-tax system is inexplicit. Any of the variables of the quality of the e-tax system and attitude of the e-tax system can predict tax compliance behaviour. Certainly, there are classical economic models and some social and psychological factors in explaining tax compliance behaviour. The success of tax compliance behaviour may also depend on various mediator variables. Future studies could further refine the existing model by considering a set of associations proposed by this model and by exploring how mediators might affect tax compliance behaviour.

An extension of this model might further assess the mediating influence of various aspects, such as tax education, the link between perceived behavioural control and user satisfaction, behavioural intention, deterrence, and trust. The factors can be used to differentiate between the mediator of the QUAETS, taxpayers' ATTETS and the economic model in predicting tax compliance behaviour.

Several empirical studies are related to this model. Many constructs have been operationalized into their related indicators in the previous studies. Although the concept of attitude and quality of the e-tax system on tax compliance behaviour has been examined, the analysis of multiple mediators poses a challenge for future research.

In developing this model, the investigation focused on the integration of different theories to predict tax compliance behaviour. Though the quality of the e-tax system may affect tax compliance behaviour positively (Chumsombat, 2015; Night & Bananuka, 2019), there are unpredictable indirect effects of the attitude towards the e-tax system on tax compliance behaviour (Lee & Wu, 2011). Therefore, more arguments are required to seek the other side of multiple mediators in the combined theories, to predict tax compliance behaviour.

7. Practical implication

The model is important in practical implications for organizations and taxpayers. Organisations need to be well-versed in factors that are important and perform highly in increasing tax compliance behaviour. From the e-tax system perspective, both the quality of the e-tax system (quality of the system, quality of the information, and quality of the service) and the attitude towards the e-tax system (ease of use of the system and apparent usefulness of the system) can improve tax compliance behaviour. Tax policies and other tax administrative tools endeavouring to

nurture tax compliance behaviour could ensure that tax policies and tax systems are made and designed in the way of enhancing tax compliance behaviour. Organisations have to ensure the systems they use are of high quality, satisfy the users and improve the users' behaviour to continue using the system. Organisations that intend to adopt new systems for improving tax compliance behaviour are advised to ensure the systems meet the requirements for the users to continue using the system. The model has a crucial implication for policymakers and tax officers aimed at increasing tax revenue. The critical role of the e-tax system in improving tax compliance behaviour needs to consider both the contentment of the user and the behavioural intention to use the e-tax system. High user satisfaction leads to adequate behavioural intentions.

8. Conclusion

This study suggests the integration of individual and social theories, namely, the theory of planned behaviour, the technology acceptance model, and the information system success model to predict tax compliance behaviour. The model also suggests testing the direct effect of system quality and the perceived usefulness of the system. The suggested model sets the foundation for further theory development and empirical investigation. The model advocates the importance of multiple mediations in integrating the quality of the e-tax system, attitude towards the e-tax system, and tax compliance behaviour. No claim that the suggested model has exhausted all factors, theories and models that can have a link with tax compliance behaviour; rather, it is an effort to explore and expound specific factors from individual and institutional constructs on tax compliance behaviour. Moreover, the model is the focus for researchers to amalgamate and test social, psychological and institutional realities, to see their effects on tax compliance behaviour.

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