Influence of Trust, Service Quality and Extrinsic Motivation on E-Tax Filling System and Compliance Burden in Tanzania

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Abstract

This study investigates the impact of trust, service quality, and extrinsic motivation on taxpayer's engagement with electronic tax filing systems, alongside the relationship between system engagement and the tax compliance burden. The study utilized partial least squares structural equation modelling (PLS-SEM). The analysis draws on survey data collected from 230 business taxpayers in Dar es Salaam, Tanzania. The results demonstrate that trust, service quality, and extrinsic motivation significantly drive taxpayer's engagement with the e-filing system, concurrently reducing the compliance burden. Additionally, the model exhibits robust predictive validity for cases beyond the sampled data. These findings underscore the importance for tax authorities to foster greater taxpayer engagement by building trust and enhancing service quality. The study offers critical insights for optimizing e-filing systems, emphasizing administrative strategies that can improve taxpayer benefits and streamlining compliance processes.

Key words: Trust; quality service; extrinsic motivation; system engagement and tax compliance burden; Tanzania

JEL Classification Codes: E62, H20

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1. Introduction

Taxpayers' compliance is a global concern across revenue authorities in both developed and developing countries (Musimenta, 2020). Tax compliance has two main perspectives: economic and behavioural (AL-Rashdan, 2020). Economic perspective refers to the execution of laws such as imposing penalties (AL-Rashdan, 2020; Allingham & Sandmo, 1972) while behavioural perspective focuses on changing taxpayers' attitude, belief, perception of the tax and tax authority to induce compliance (Feld & Frey, 2007). Economic perspective assumes that the intention of tax evasion is to maximise income given the perceived probability of detection and penalties for noncompliance (Allingham & Sandmo, 1972). Behavioural perspective concerns with taxpayers' reluctance to pay tax voluntary despite various efforts by revenue authorities to improve the system (Alhempi *et al.*, 2020). Taxpayers' reluctance is amplified by the complexity encountered in honouring their tax obligations.

Intricacy of the tax administration system increases compliance burden which in turn hinders compliance (Eichfelder & Schorn, 2012). Compliance burden are difficulties or limitations experienced by taxpayers when honouring their tax obligations. Instances where taxpayers are willing to pay bribe than reporting all the income, signifies the existence of a higher compliance burden (Maseko, 2014). Tax compliance burden emanates from internal as well as external sources. Internal sources include time spent on maintenance and preparation for professional advisors, filling in tax form and dealing with tax authorities on objections, appeals and inquiries. External sources include fees paid by the taxpayer to consultants for preparation of tax affairs (Loh *et al.*, 1997). According to Alhempi *et al.* (2020), revenue authorities have the role to play in reducing compliance burden and improving taxpayer's enthusiasm and willingness to comply voluntarily through simplification of procedures, convenience of collection system, and increasing taxpayer's trust of the tax administration and fairness of the tax system.

Thus, automation of the tax administrative processes is considered by governments as an engine to enhance efficiency in serving taxpayers and improve interaction with the public and other stakeholders (Glyptis *et al.*, 2020). Automation entails utilization of ICT platforms and systems (e-government) to interact with the public. Automation of public service, including tax administration, improves efficiency and effectiveness in serving the public, enhances government accountability, and allows convenient access of relevant government information by its stakeholders (Napitupulu & Sensuse, 2014).

In the tax administration, for example, the use of e-filing system for submission of tax declarations has replaced the complicated, tedious and time consuming manual system of filing returns that used papers (Liang & Lu, 2013). Further, e-filing increases openness and efficacy (García-Sánchez *et al.*, 2012), improves accessibility of services to taxpayers, as well as provides taxpayers with easier access to information (Ziemba *et al.*, 2014) and minimises chances of error (Coolidge & Yilmaz, 2014).

In the same vein, Tanzania introduced e-filing system in 2010, initially as a requirement for VAT filing (Sichone *et al.*, 2017) and subsequently in 2020, online filing became compulsory for submission of all tax returns. Compulsory filing of the tax returns provides opportunities to taxpayers and the tax administration. For tax administration, the use of automated systems reduces administration costs, improves efficiency, standardizes procedures and enhances best practices and

fairness. Much of the literature on the use of online systems in taxation concentrated on analysing the willingness of the taxpayers to use the e-filing (Chaouali *et al.*, 2016; Kimea *et al.*, 2019; Sichone et al., 2017); continuous usage (Azmi & Aziz, 2015; Santhanamery & Ramayah, 2012) and taxpayers compliance (Oktaviani et al., 2019; Purba *et al.*, 2019; Sifile *et al.*, 2018). Little attention has been paid to the burden associated with tax systems compliance burden.

This paper applies a partial least squares structural equation modelling PLS-SEM) to examine the effect of e-filing system on taxpayer's compliance burden. Furthermore, this study utilises the Information System (IS) Success Model(DeLone & McLean, 1992, 2003) to explore the influence of the service quality, external motivation and trust on tax system use and thereafter, reduction in compliance burden. The results demonstrate that trust, service quality, and extrinsic motivation significantly drive taxpayer's engagement with the e-filing system, concurrently reducing the compliance burden. Additionally, the model exhibits robust predictive validity for cases beyond the sampled data.

This study contributes to theory and the existing literature on e-filing and tax compliance burden in several ways. First, it enhances the existing model by incorporating extrinsic motivation and trust as key constructs while eliminating user satisfaction, given the mandatory nature of the system. Additionally, this study adds to the body of research on tax e-filing and e-government by being among the few empirical studies to examine the influence of trust, extrinsic motivation, and service quality on system engagement and taxpayer compliance burden. This study extends prior studies by Veeramootoo *et al.* (2018) and Masunga *et al.* (2020), which applied the IS-success model to assess e-filing system quality and its impact on tax compliance. Unlike previous studies, which primarily employed theories such as the Theory of Planned Behaviour (TPB) and the Technology Acceptance Model (TAM) to analyse taxpayer's intention to adopt or continue using e-filing in voluntary settings, this study shifts the focus to the benefits accrued to taxpayers as system users, specifically in terms of reducing the tax compliance burden. Furthermore, while most prior research has focused on individual-level adoption and usage intentions, this study shifts the unit of analysis to business entities. From a methodological perspective, this study also advances the literature by incorporating out-of-sample prediction power and analysing the importance and performance of key constructs in relation to the target variable.

The remainder of this study is organised as follows. Section 2 presents literature review both theoretical, empirical and development of conceptual framework. Section 3 describes methods employed to achieve the objectives of this study. Section 4 presents findings while section 5 provides the conclusion drawn from the analysis of the data findings, recommendations and areas for future studies.

2. Literature Review
2.1 Theoretical Review
The study adapted the information systems success model (alternatively IS success model or Delone and McLean IS success model) by complementing with Self-determination Theory and Trust Theory. The IS-Success Model allows individuals and organisations to evaluate the net benefits gained from the application of the system (DeLone & McLean, 2003). The application of this model is subject to the context of the organisation, the choice of metrics, success magnitudes and rationale of the system assessed (DeLone & McLean, 2016). The study excluded the metric for user satisfaction because, the e-filing system deployed is required to the taxpayer. Further, the study replaced the information and system quality metric by the trust and extrinsic motivation constructs because studies indicated information quality is a less important metric to influence use of tax system (Milamo & Magobe, 2024; Petter & Fruhling, 2011; Veeramootoo et al., 2018) and using system to honour tax obligation is mandatory ("URT - The Finance Act," 2022) .

The extrinsic motivation construct is drawn from the Self Determination Theory. The theory tries to explain what directs people engagement on activity (Deci & Ryan, 1985). Motivation that accounts for individuals to engage in an activity drives from intrinsic and extrinsic motivation (Deci et al., 2017). Extrinsic motivation refers to a variety of regulatory styles that are instrumental in nature, ranging from less autonomy to high autonomy motivation namely; external motivation, introjected motivation, identification and integrated motivation (Deci *et al*., 2017), and trust constructs are developed from the Trust Theory by Mayer *et al*., (1995), which looked at the perceived trustworthiness of the trustor's on the ability of the trustee's ability, benevolence and integrity.

Previous studies widely used theories such as Unified Theory of Acceptance and Use of Technology (UTAUT) and Technology Acceptance Model (TAM) for assessment of intention to use/adopt. Theory of Planned Behaviour (TPB) which assesses beliefs and behaviours of taxpayers to adopt e-filing, and Diffusion of Innovation (DOI) which shows spread of the technology. These theories do to provide a comprehensive evaluation of the post-adoption outcomes such as net benefit to taxpayers. The IS-Success Model focuses on assessing benefits accrued to system users (Jeyaraj, 2020). Thus, IS Success Model provide ways for evaluating individuals and organisations net benefits for using system (Yilmaz & Coolidge, 2013). taxpayers perceive benefit when they experience efficiency in the tax system (i.e. saving time of compliance) (Chen *et al*., 2015) which entails simplified return filing and tax payment process (Nguyen *et al*., 2023).

2.2 Hypotheses Development
2.2.1 Service Quality and System Engagement
Service quality refers to the quality of the support that tax system users receive from the tax agency. This includes responsiveness, reliability, technical competences, understandability and timelines. Contradicting findings exist on the significance of the services provided by system providers in mandatory and voluntary usage environments. Studies conducted in mandatory usage environment include Lee and Lee (2021) in open source enterprise information system and Angelina (2019) in e-commerce success and e-filing while(Milamo & Magobe, 2024) revealed positive and significant influence on service quality. The results are supported by convenient IT support and the availability of 24/7 customer care services. Meanwhile, the same construct in voluntary usage

environment studies conducted in e-filing by Veeramootoo (2018), health sector by Cho *et al*. (2015), university information system (Dalle *et al*., 2020), logistic system in a medical centre (Wei *et al*., 2017), hospital emergence services (Petter & Fruhling, 2011) and education system (Tahu & Yuesti, 2021) have shown insignificant influence on system engagement. The insignificance of the service quality may be caused by limited support to users (Garomssa *et al*., 2021), and infrequency usage (Teo *et al*., 2008). However, Lee and Lee (2021) and Oji (2017) posit that service quality is the key element in compelled usage of the system environment. Therefore, it is hypothesized that:

H1: Service quality has a positive influence on taxpayers' system engagement.

2.2.2   Trust and System Engagement

This reflects perceived business information security, privacy of the entity and benefits of the system on the party of the government agency and level of taxpayers trusting the e-filing system and use. Tanzania tax agency instils trust to the public through transparency in service delivery, engagement of stakeholders, consistent service delivery and customer care(URT, 2023b). Several studies indicate trust with the government is a key component for taxpayers' compliance to engage with the system (Alomari *et al*., 2012; Vincent, 2021). Trusting the e-filing means taxpayers believe that the tax authority will be responsive, dependable and show understanding to taxpayers when they interact with the system (Abdulkareem & Mohd Ramli, 2022). In the study of predictors of e-government adoption, Alomari *et al*. (2012) found that there is a significant influence of citizen trust to the government on usage of the e-government. Trust on the organisation was found to significantly influence work engagement (Ugwu *et al*., 2014). Further, trust in e-government creates public value of the e-filing (Abdulkareem & Mohd Ramli, 2022), and stronger direct royalty on the e-government (Alkraiji & Ameen, 2022). In this regard, this study hypothesises that an increase in trust on strength of the tax system security and privacy strongly and significantly enhance taxpayers' engagement with the tax system.

H2: Trust has a positive influence on taxpayers' system engagement

2.2.3   Extrinsic Motivation and System Engagement

Extrinsic motivation describes the motivation derived from external sources. The motivations are in heterogeneous aspects ranging from highly controlled to nearly autonomous level. Extrinsic motivation which is less controlled contributes to well-being and positive outcome (Ryan & Deci, 2017). Studies have found that there is a significant influence of extrinsic motivation on job engagement (Miao *et al*., 2020). Cross-country analysis between Japan and Israel indicated that extrinsic motivation has a positive relation with job engagement, the difference in magnitude were explained by culture and working status (Sholer & Kimur, 2020). Given the fact that entities have other motives in an organisation apart from tax obligations, hence, extrinsic motivation will have strong and significant influence on taxpayers' engagement with tax system. It is hypothesized that:

H3: Extrinsic motivation has a positive influence on taxpayers' system engagement.

2.2.4   System Engagement and Tax Compliance Burden
System use or intention to use refers to system engagement. Several studies found insignificant influence of system use on net benefits or organisation impact (Aditya *et al*., 2020; Al-Mamary, 2019; Angelina *et al*., 2019; Cho *et al*., 2015; Garomssa *et al*., 2021; Lee & Lee, 2012). The result may be explained by the mandatory nature (Lee & Lee, 2012; Petter & Fruhling, 2011), non-frequent usage and not perceiving benefit of the system (Angelina, 2019) and new system (Cho *et al*., 2015). However, studies conducted in the education sector such as digital library system (Alzahrani et al., 2019), university information system (Dalle *et al*., 2020) as well as logistic system in a medical centre (Wei *et al*., 2017), e-filing (Milamo & Magobe, 2024) found significant influence on organisation's impact or net benefit. Safety, reliability and accuracy perception issues may cease users reliance on the system to achieve their desired results (Dalle *et al*., 2020).

H4: System engagement reduces tax compliance burden

2.3 Conceptual Framework
The conceptual framework presented in Figure1 was derived from the IS Success Model. The original model consists of seven constructs, of which three constructs namely information quality, system quality, and service quality were mediated by system use and user satisfaction and net benefits. Three constructs that were replaced by trust, extrinsic motivation and tax compliance burden were information quality, system quality and net benefit respectively. The mandatory use necessitated elimination of user satisfaction construct.

Thus, this study hypothesized that there is a positive influence of "trust" and extrinsic motivation on tax system engagement/use. Tax system engagement is defined as the degree and manner in which taxpayers utilise the capabilities of an information system (e.g, amount of use, frequency of use, nature of use, appropriateness of use, extent of use, and purpose of use) (DeLone & McLean, 2016). This hypothesis serves as the only way taxpayers experience the benefit of the system. Benefit is conceptualised as the reduction in the tax compliance burden experienced by taxpayers after utilising the system in honouring their tax obligations.
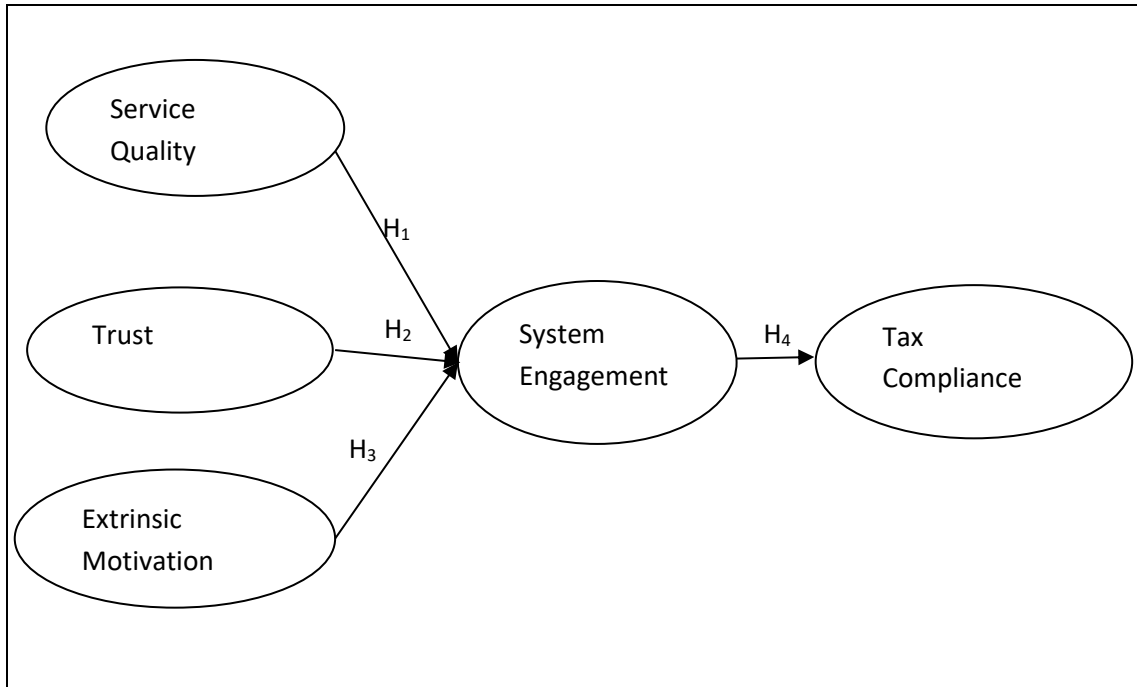
Figure1: Conceptual Model

3. Methods
3.1. Measures
The items measuring service quality, trust, extrinsic motivation and system engagement are adopted from previous studies. For example, the indicators for service quality were obtained from (Veeramootoo *et al*., 2018), and system engagement (Al-Mamary, 2019), extrinsic motivation (Rahi & Ghan 2018), trust (Chaouali *et al.*, 2016), and tax compliance burden (Milamo & Magobe, 2024). Content validity was evaluated by involving experts' validation of the indicators; two-tax policy maker, two-tax consultant, two taxpayers and two academicians. The items were measured using 5-point Likert scale, ranging from 5 strongly agree to 1 strongly disagree.

3.2. Data Collection and Sample

The minimum sample size rule was applied to determine the study's sample size (Goodhue et al., 2012; RVSPK *et al*., 2020). According to Iacobucci (2010), a minimum sample size of 200 is considered acceptable for structural equation modelling estimations. The data were collected from entities in the Dar es Salaam Metropolitan area that had filed VAT returns online before 2020. Prior experience with online tax return filing was a key criterion for sample selection, as these taxpayers required minimal intervention from the Tanzania Revenue Authority (TRA) to adapt to the new system. A stratified random sampling approach was employed to select the responding entities. The choice of Dar es Salaam was based on its significant contribution to gross domestic product (GDP) (URT, 2022) and its role in generating over 80% of total domestic revenue. Additionally, the majority of large and medium-sized tax cases are managed through tax offices in Dar es Salaam. The selection of firms as respondents was further justified by their frequent interactions with the e-filing system, as they are required to file various types of tax returns regularly.

3.3. Data Analysis

The study employed a Partial Least Squares Structural Equation Modelling (PLS-SEM) to assess the measurement model and test hypotheses. PLS-SEM method is relevant when the objective of the research focuses on prediction of the studied constructs. Practically, the method works similarly to multiple regression analysis with the aim of maximising explained variance in the dependent construct (Dash & Paul, 2021). The method uses a measurement model to provide an evaluation of the data quality and structural model to assess causal relationship of the constructs. Further, the PLS-SEM model works better with any sample size for scaled variables (Hair *et al*., 2019), handle complex models with multiple structural relational and converge after few iterations to the optimal solution (Hair *et al*., 2021).

The study employed Partial Least Squares Structural Equation Modelling (PLS-SEM) to assess the measurement model and test the proposed hypotheses. The PLS-SEM approach is particularly relevant when the research objective emphasizes the prediction of studied constructs. Functionally, it is similar to multiple regression analysis, aiming at maximizing the explained variance in the dependent construct (Dash & Paul, 2021). PLS-SEM utilizes a measurement model to evaluate data quality and a structural model to assess causal relationships among constructs. Moreover, the method is well-suited for scaled variables, as it performs effectively across various sample sizes (Hair *et al*., 2019). Additionally, PLS-SEM can accommodate complex models with multiple structural relationships and efficiently converges to an optimal solution within a few iterations (Hair *et al*., 2021).

Results

3.4. Sample Characteristics

Data for this study were collected through structured questionnaires administered to business taxpayers. A target was to administer 275 questionnaires, however, the 230 firms responded adequately. The achieved sample is composed of the Large Taxpayers Department (LTD) 20 percent and Domestic Revenue Department (DRD) 80 percent. Thus, a large sample comes from medium taxpayers specifically the DRD because LTD comprises only few large and specialised businesses. The distribution of the sample by sector is as follows: tertiary sector 56 percent, secondary sector 22 percent, quaternary sector 18 percent and primary sector 4 percent. Lastly, distribution by scale of operation consists of 84 percent of local entities while multinational entails 16 percent entities. A good number of entities (76 percent) indicated to have received training on e-filing (Table 1). Sectoral distribution of the sample was as follows: the tertiary sector accounted for 56%, the secondary sector 22%, the quaternary sector 18%, and the primary sector 4%. In terms of operational scale, 84% of the sampled entities were local businesses, while 16% were multinational corporations. Additionally, 76% of respondents indicated having received training on the e-filing system (Table 1).

Table 1: Summary of Descriptive Characteristics of the Sample

Attribute	Frequency	Percent
Business size		
Medium taxpayers	184	80
Large taxpayers	46	20
Total	**230**	**100**
Business sector		
Primary	8	4
Secondary	51	22
Tertiary	130	56
Quaternary	41	18
Total	**230**	**100**
Scale of operation		
Local	193	84
Multinational	37	16
Total	**230**	**100**
E-filing training		
Yes	176	76
No	54	24
Total	**230**	**100**

Source: Research Data, (2024)

3.5. Normality Test

Univariate normality of the data was assessed using skewness and kurtosis measures. Finch et al., (1997) recommend acceptable thresholds of ±2.0 for skewness and 7.0 for kurtosis to indicate a normally distributed dataset. In this study, skewness values for all items ranged within ±1.513, while kurtosis values were below 4.00, suggesting that the data followed a normal distribution.

3.6. Common Method Variance
Confidentiality and anonymity of respondents, along with the use of different response scales, were adopted to mitigate common method bias. Additionally, the inner Variance Inflation Factor (VIF) was applied to test for common method variance. The inner VIF values ranged from 1.00 to 2.217, indicating no significant issues related to common method variance (Kock, 2015).

3.7. Measurement Model Assessment
It is a prerequisite to assess the measurement model before testing the structural model (Fornell & Larcker, 1981). Both reliability and validity of the measurement were assessed. We assessed reliability via indicator loadings (IL), Cronbach alpha (CA), composite reliability (rho_c) and Composite Reliability (rho_a). As can be seen from **Table 2**, the values of IL, CA, rho_c and rho_a

were above the acceptable minimum limit of 0.70 recommended by Hair *et al*. (2019), suggesting a high level of reliability. Validity of the measurement was evaluated through convergent validity and discriminant validity. While convergent validity was evaluated using average variance extracted (AVE), discriminant validity assessment was done using heterotrait-monotrait (HTMT) ratio criterion proposed by Henseler *et al*. (2015). The results presented in Table 2 indicate that the values of AVE of all constructs were above 0.5 - a lower threshold for convergent validity (Fornell & Larcker, 1981). Regarding discriminant validity, previous studies (Hair *et al*., 2019; Henseler *et al*., 2015; Voorhees *et al*., 2016) suggest that the HTMT of less than 0.85 for similar constructs is acceptable (Hair Jr *et al*., 2021).

The results in Table 3 confirm the discriminant validity of the reflectively measured constructs: ESE and EXM (0.721), SEQ and EXM (0.987), SEQ and ESE (0.700), TST and EXM (0.780), TST and ESE (0.750), TST and SEQ (0.699), and TST and TCB (0.791). All HTMT ratio values are below the 0.85 threshold, indicating that the constructs are distinct from one another.

Table 2: Assessment of Reliability and Convergent Validity

Construct and indicator abbreviation	Indicator	Loading	CA	rho_a	rho_c	AVE.
Extrinsic Motivation (EXM)			0.855	0.877	0.902	0.697
EXM1	We acquire skill of completing tax returns	0.744				
EXM2	We apply the knowledge in our daily business operations	0.875				
EXM3	This is part of our business	0.837				
EXM4	The system is in line with our company goals	0.876				
Service Quality (SEQ)			0.886	0.895	0.921	0.745
SEQ2	E-filing provides simplified services	0.869				
SEQ4	E-filing tax system provides on-time services	0.863				
SEQ5	E-filing tax system provides customized services	0.84				
SEQ7	E-filing enhance modernization of taxation procedures	0.879				
Trust (TST)			0.882	0.883	0.919	0.738
TSTI	E-filing safeguard company privacy	0.857				
TST2	E-filing system safeguard business information	0.873				
TST3	The company is willing to integrate with the e-filing system	0.849				
TST4	E-filing system was for our company/business benefit	0.858				
E-filing System Engagement (ESE)			0.881	0.884	0.913	0.678
ESE1	Using e-filing has improved our performance filing tax returns	0.766				
ESE3	Using e-filing provides opportunity for completion of multiple tasks	0.86				
ESE4	E-filing tax system has enabled us to become a compliant taxpayer	0.863				
ESE5	Using e-filing has enhanced our productivity in filing tax returns	0.816				
ESE7	E-filing usage helps to in becoming a compliant taxpayer	0.807				
Tax Compliance Burden (TCB)			0.831	0.837	0.888	0.665
TCB1	E-filing tax system makes filing of tax returns convenient and less costly	0.823				
TCB2	E-filing system lessens the time spent on meeting tax compliance obligations	0.743				
TCB3	E-filing system simplifies tax reporting and payment	0.867				
TCB4	E-filing system simplifies the process of determining tax liability	0.826				

Source: Research Data, (2024)

Table 3: Assessment of Discriminant Validity using HTMT Ratio Criterion

	EXM	ESE	SEQ	TCB	TST
EXM					
ESE	0.721				
SEQ	0.787	0.7			
TCB	0.825	0.863	0.843		
TST	0.78	0.75	0.699	0.791	

Source: Research Data, (2024)

3.8. Structural Model Assessment

Table 4 presents the results of the hypothesized relationships assessed using SmartPLS4 to evaluate the PLS-SEM model. This study employed the bootstrapping technique with 10,000 resamples (with the "number of results completed" option set to slower processing) to determine the significance of the path coefficients. The findings indicate that all constructs—service quality, trust, and extrinsic motivation—have a positive and statistically significant effect on taxpayer system engagement. Thus, hypotheses H1, H2, and H3 are supported. Additionally, system engagement has a positive and statistically significant effect on the reduction of tax compliance burden, supporting H4. Furthermore, the R² results indicate that system quality, trust, and extrinsic motivation collectively explain 54.1% of the variance in system engagement. In turn, system engagement accounts for over 55% of the variance in the reduction of taxpayer compliance burden (see Figure 2). According to Hair et al., (2011), an R² value of 0.50 indicates a moderate level of in-sample predictive power. Collinearity issues were assessed using the Variance Inflation Factor (VIF) values for each predictor construct. Recent studies recommend an ideal VIF threshold of 3 or lower (Hair *et al*., 2019). The findings of this study show that both inner VIF (Table 4) and outer VIF values were below this threshold, indicating no collinearity concerns.

Table 4: Coefficient, T-Value, CI, Hypothesis Results, VIF

Path	Coefficient	T-statistics	Confidence Interval	Hypothesis Result	Inner-VIF
SEQ -> ESE	0.254**	2.829	[-0.082 -0.428]	H1: Supported	2.101
TST -> ESE	0.368**	2.904	[0.111 - .605]	H2: Supported	2.015
EXM -> ESE	0.212**	2.009	[-0.003-0.406]	H3: Supported	2.409
ESE -> TCB	0.743***	17.152	[0.634-0.812]	H4: Supported	1.000

Note: Significance: *Significant at $p \leq 0.05$; **significant at $p \leq 0.01$; ***significant at $p \leq 0.001$

Source: Research Data, (2024)

Firm-level data were utilized for analysis. The results indicate that system quality (H1), trust (H2), and extrinsic motivation (H3) are significant factors influencing taxpayers' adoption and usage of the tax system. Furthermore, this study validates that tax system engagement leads to a reduction in the tax compliance burden (H4). The findings highlight the critical role of service quality in enhancing taxpayer's engagement, particularly in environments where system usage is mandatory. These results align with the findings of Lee and Lee (2012) and Angelina *et al*. (2019), who conducted studies in similar mandatory tax e-filing contexts. However, this study's findings

contrast with those of Veeramootoo *et al*. (2018), who found that service quality does not influence the continuous use of e-filing systems. Notably, the study by Veeramootoo *et al*. (2018) was conducted in a voluntary adoption setting, which may explain the discrepancy. Therefore, the findings of this study underscore the importance of ensuring accessible, high-quality tax services for taxpayers, particularly in cases where system usage is compulsory.

Similarly, findings from Abdulkareem and Mohd Ramli (2022), Alomari *et al*. (2012), and Ugwu *et al*. (2014) suggest that trust in government fosters public value, loyalty, and work engagement, respectively. Consistent with these studies, this research found that trust has a positive and significant influence on taxpayer's engagement with the tax system. These findings imply that tax authorities must exceed taxpayers' expectations by providing a tax system with robust security features and ensuring the protection of taxpayer's privacy, as emphasized by Abdulkareem and Mohd Ramli (2022). Additionally, tax authorities should demonstrate responsiveness, reliability, and a deep understanding of taxpayer's concerns when interacting with the system to further strengthen trust and engagement.

Furthermore, this study found that extrinsic motivation positively and significantly influences taxpayers' engagement with the tax system. The concept of extrinsic motivation in this study is derived from integrated and identified regulations, which represent less controlled forms of motivation (Ryan & Deci, 2024). Identified regulation refers to the conscious valuing of a behavioural goal or regulation, whereas integrated regulation reflects alignment with one's personal values and needs (Ryan & Deci, 2000). These findings are consistent with Ryan and Deci (2000), who assert that controlled motivations significantly influence well-being and performance outcomes.

Lastly, is the analysis of total effects ranked system engagement as the most important factor contributing to the reduction of taxpayers' compliance burden. In contrast to the findings of Aditya *et al*., (2020), Al-Mamary (2019) demonstrated that system engagement significantly reduces taxpayers' compliance burden. This result aligns with the findings of Alzahrani *et al*. (2019) and Wei *et al*. (2017).
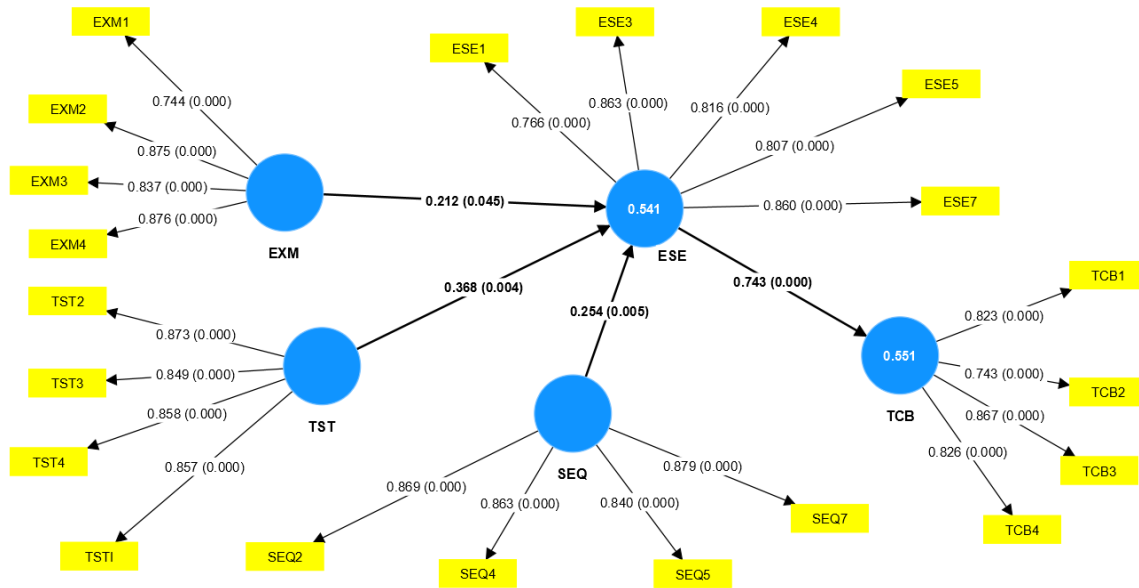
Figure 2: Path Coefficients and Significance

3.9. Out of Sample Predictive Power

This study focused on assessing the model's ability to accurately predict the values of cases not included in the sample, ensuring its predictive validity, as suggested by Shmueli *et al*. (2019). The target construct TCB indicators (TCB1, TCB2, TCB3, and TCB) yielded Q^2predict values exceeding zero, indicating that the PLS-SEM model outperforms most simplistic benchmarks (Hair Jr *et al.*, 2021).

The results of the prediction error distribution, following the guidelines of Shmueli *et al*. (2019), indicate an asymmetric distribution. Therefore, root mean square error (RMSE) values were compared using PLS-SEM mean absolute error (MAE) and linear model (LM) MAE. The target variable in Table 5 shows that in three out of four cases, PLS-SEM-MAE exhibits higher predictive power and practical relevance, as highlighted by Hair et al., (2019). The analysis produces the following RMSE values (PLS-SEM-MAE vs. LM-MAE): TCBp3: 0.474 vs 0.493; TCBs2: 0.497 vs 0.505; TCBs3: 0.569 vs 0.55; TCBs: 0.499 vs 0.559. The results suggest that the model have high predictive power.

Furthermore, the CAVPAT results for overall model produces negative loss value difference for both PLS-SEM vs Indicator Average (IA) and PLS-SEM vs Linear Model (LM) l. the implication is that PLS-SEM has a lower average loss than the IA and LM prediction benchmarks. (Sharma *et al*., 2022). Moreover, the p-value for IA is significant and below 0.001 (See Table 5).

Table 5: Q^2 Values, PLS Predict of the Manifest Variable Original Model

	Q²predict	PLS-SEM_RMSE	PLS-SEM_MAE	LM_RMSE	LM_MAE
ESE1	0.433	0.637	0.459	0.64	0.447
ESE3	0.28	0.692	0.497	0.729	0.506
ESE4	0.428	0.697	0.511	0.736	0.536
ESE5	0.227	0.713	0.521	0.743	0.551
ESE7	0.266	0.68	0.486	0.685	0.503
TCB1	0.37	0.702	0.474	0.684	0.493
TCB2	0.35	0.716	0.497	0.703	0.505
TCB3	0.427	0.774	0.569	0.741	0.558
TCB4	0.299	0.767	0.499	0.794	0.549

Source: Research data, (2024).

3.10. Importance Performance Map (Analysis)

The results of the Importance-Performance Map (IPM) analysis indicate that system engagement is the most influential construct affecting the target construct, with a total effect of 0.743 and the highest performance score of 75.660 (Ringle & Sarstedt, 2016). Trust follows, with a total effect of 0.273 and a performance score of 72.969. Although service quality has a relatively high importance score (0.189), its performance is lower (65.647) compared to extrinsic motivation, which has the lowest importance (0.157) but a higher performance score (70.840). These findings highlight that tax system engagement is central to reducing the tax compliance burden. Moreover, trust in tax authorities plays a crucial role—when taxpayers perceive the tax agency as trustworthy, they are more likely to comply and engage efficiently with the system. Conversely, extrinsic motivators such as penalties and fines have the least impact on engagement and contribute minimally to improving tax compliance behaviour.

4. Conclusion, Recommendations and Future Research Directions
4.1. Conclusion

The objective of this study was to examine the factors influencing tax e-filing system engagement and the role of system engagement in reducing the tax compliance burden in Tanzania. This study employed an updated version of the DeLone and McLean IS Success Model (DeLone & McLean, 2003) to assess the benefits of the e-filing system for taxpayers. Additionally, it analysed the predictive power of the model in forecasting out-of-sample cases and evaluated the importance and performance of key constructs to guide managerial decision-making in maximizing the benefits of the e-filing system. The findings indicate that all examined constructs significantly influence system engagement, and in turn, system engagement significantly reduces the tax compliance burden. To optimize managerial decision-making for tax revenue authorities, it is crucial to conduct regular performance analyses. Tax agencies should ensure that taxpayers experience seamless accessibility and efficient utilization of the e-filing system to enhance engagement. Moreover, investing in trust-building initiatives will strengthen taxpayers' confidence in the tax system, ultimately fostering greater voluntary engagement. Despite the fact that extrinsic motivation shows lower performance compared to service quality, its importance in driving system engagement is higher. This suggests that efforts to cultivate a culture of high-quality service delivery should be complemented by strategies that address taxpayer's motivation, ensuring a balanced approach to improving engagement with the tax system.

4.2. Recommendations

This study recommends the continuous enhancement of the e-filing system to ensure seamless taxpayer engagement and accessibility, particularly during peak filing periods. These improvements should focus on minimizing the time required to fulfil tax obligations, simplifying tax reporting processes, and streamlining tax liability determination. By doing so, taxpayers will experience tangible benefits from using the e-filing system, thereby fostering greater compliance and engagement. Additionally, trust in government agencies emerged as the most influential factor shaping taxpayers' perceptions of the tax system. As highlighted by Ejdys (2020), trust is a key determinant of future technology adoption. Therefore, tax authorities should strengthen their credibility by enhancing data security, privacy protections, and system integration capabilities to alleviate taxpayers' concerns about the e-filing system's ability to safeguard business information. Finally, this study underscores the importance of continual improvements in service quality, with a particular focus on addressing taxpayer motivation through external incentives.

4.3 Future Research Directions

While this study contributes to the understanding of e-filing system engagement and tax compliance burden reduction, it has several limitations that should be considered when interpreting the results. First, this study primarily focused on extrinsic motivation, particularly less-controlled factors. Future research should explore additional aspects of extrinsic motivation, such as introjected and external regulation. Moreover, this study examined only three key constructs—trust, extrinsic motivation, and service quality, with system engagement as a mediating factor. Future studies should consider incorporating moderators such as tax education, firm age, and industry type, as well as additional constructs such as perceived risk, regional economic development, internet accessibility, intrinsic motivation, and income levels. Furthermore, this study focused on firm-level data. Future research could extend the analysis to individual taxpayers,

exploring demographic dimensions such as education, age, and digital literacy. Finally, future studies may replicate this research in regions with lower contributions to GDP to assess the generalizability of the findings across different economic contexts.

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