Addis Ababa University, Ethiopian Journal of Business and Economics, EJBE Vol.: 15, No.: 2,
Doi: *https://dx.doi.org/10.4314/ejbe/v12i1.3* p**-ISSN: *2311-9772* e-ISSN: *2410-2393***
Available online: http://ejol.aau.edu.et/index.php/ejbe and https://www.ajol.info/index.php/ejbe

Understanding Firms' Continuance Intention of the E-filing System: Mediating Role of Perceived Complexity and Relative Advantage

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Abstract

The research examines the factors continuing e-filing use (post-adoption behaviours) by claiming business taxpayers in Ethiopia's voluntary e-filing setting is an under-researched topic. This study proposes and tests an integrated framework that incorporates Technological-Organizational-Environmental frameworks, along with Diffusion of innovation theory and Information system success model, to subsequently provide an understanding of organizational continuance intention. We employed a cross-sectional survey design, and used PLS-SEM analysis of a survey study of 208 medium and large enterprises to test a dual mediation model of continuance where system and information quality influence via DOI constructed relative advantage and complexity. Results indicate that system and information quality affect continuance indirectly via DOI mediators; high quality boosts perceived advantage and reduces complexity, which directly influence continued use. Furthermore, government oversight, IT infrastructure, top management support, and service quality significantly and positively influence continuance intent, whilst security concerns and complexity act as barriers to continuing use. Non-mandated e-filing systems appear to need more than a functional system to encourage voluntary continuance. The reality of the taxpayer cognitive process must be taken into consideration while building user-friendly interfaces that minimize complexity and provide features that make the system's relative benefit observable and indisputable.

Keywords – Non-mandated adoption, E-filing system, Continuance intention, dual-mediation, ISSM-DOI-TOE framework

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Introduction

The advancement of digital technologies has remarkably changed public administration; for example, e-government services, particularly in the e-filing system, are seen as an integral component of the apparatus of modern fiscal governance. This system boosts tax administration by yielding technology-based alternatives that increase tax processes, raise efficiency, and improve the compliance experience by providing simplicity for taxpayers (Hesami et al., 2024; Villanueva & Cristina, 2022).

Taxation is the principal financial resource for government, and tax revenues provide core public services; furthermore, sustainable development is underpinned by taxation, yet taxation systems globally are constrained by sometimes-unresolved issues such as taxpayer non-compliance and evasion, elevated administrative costs of tax obligations, and complex tax obligations that are often perceived to place a disproportionate compliance burden on small and medium enterprises (SMEs) (Bird, 2015; Musimenta et al., 2017; Tran-Nam & Glover, 2002).

While e-filing holds significant potential, the uptake has not been even, especially in developing countries. One of the major limitations in Africa, and specifically Ethiopia, is that it trails in the adoption of other digital technology, while supply-side tax compliance is still deficient (Okunogbe & Santoro, 2023; Onyeiwu, 2002). Ethiopia reflects this reality with a tax-to-GDP ratio of 3.9% while firms are devoting an average of 300 hours a year on tax compliance, which is significantly longer than in other countries in the region (Dewald & Schreck, 2023; Group, 2024). To address this gap in resource mobilization, Ethiopia has introduced e-tax systems since 2011 (Ali et al., 2017; Kochanova et al., 2020; Mascagni et al., 2021).

While e-tax systems offer multiple potential benefits to the tax authority (Gefen & Straub, 2000; Kolsaker & Payne, 2002; Okunogbe & Santoro, 2023), the adoption of such platforms is still alarmingly low due to absence of appropriate infrastructure, a high level of digital illiteracy, and inability of systems to function together (Qiang, 2024; Yimam et al., 2024). This is a classic example of a deeper concern where research fails to understand the socio-political and economic context and its implications for developing countries and instead applies developed countries' frameworks (Bwalya & Healy, 2010; Ebrahim & Irani, 2005; Edington & Shin, 2006; Heeks, 2003; Norris & Moon, 2005).

Although numerous studies have investigated the initial adoption of e-filing or e-government systems, relatively few have examined post-adoption continuance intention, particularly in developing country contexts where sustained use remains low despite heavy investment (Bhattacherjee, 2001; Yimam et al., 2024). Prior work in Ethiopia and similar African settings has largely concentrated on drivers of initial acceptance rather than the mechanisms that explain why firms abandon the system after the mandate period ends (Chaouali et al., 2016; Okunogbe & Santoro, 2023; Opiso et al., 2023).

Existing continuance intention models tend to apply single theoretical lenses, for example, either the Technology Acceptance Model (TAM), Information System Success Model, or Diffusion of Innovation in isolation, producing fragmented and sometimes contradictory findings (Li & Shang, 2020; Rahman & Pangendra, 2022; Teo et al., 2008). There is limited empirical research that integrates the Information System Success Model (ISSM), the Technology-Organization-Environment (TOE) framework, and Diffusion of Innovations (DOI) theory into a single explanatory model for post-adoption behaviour in mandatory or semi-mandatory e-government systems (DeLone & McLean, 2003; Rogers, 2003; Yang et al., 2017).

The mediating mechanisms linking system & information quality to continuance intention remain underexplored. While some studies suggest that technical performance influences continuance, they rarely test whether these effects are transmitted through users' cognitive evaluations of relative advantage and perceived complexity – two core DOI constructs (Chang et al., 2005; Chen, 2010; Saptono et al., 2024). The present study highlights the absence of research examining this dual-mediation pathway in resource-constrained environments.

Most e-government continuance studies have been conducted in developed or high digital-literacy contexts, limiting the ecological validity of Western-derived models when applied to low-trust, low-infrastructure developing countries (Heeks, 2003; Totonchi & Mohadis, 2025). There is a particular scarcity of empirical work on firm-level as opposed to individual taxpayer continuance intention for e-filing systems in sub-Saharan Africa.

Finally, although firm size and technological compatibility are frequently significant in adoption studies, their relevance in the post-adoption phase – especially after users have gained experience with the system remains unclear and inconsistently reported (Barbour, 2018; Jacob & Umoh;

Trigo et al., 2015; Yimam et al., 2024). The current research addresses this by demonstrating that these factors lose significance once the system moves from initial to continued use.

By integrating ISSM, TOE, and DOI frameworks and testing the mediating roles of perceived relative advantage and perceived complexity among Ethiopian medium and large enterprises, the present study fills these critical theoretical, contextual, and mechanistic gaps in the e-government continuance literature, finally yielding governing bodies with actionable information to improve the e-filing system.

Theoretical Foundations and Hypothesis Development

Using the Information System Success Model, diffusion of innovation theory, and technology, organization, and environment framework, this research provides a rigorous assessment of medium and large organizations' continuance intention in Ethiopia. The TOE framework scrutinizes how continuance intention is influenced by factors like IT infrastructure, top management support, firm size, relative advantage, complexity, compatibility, and governmental oversight (Oliveira & Martins, 2011; Tornatzky et al., 1990).

Diffusion of innovation theory that highlights attributes of innovation (Rogers, 2003), and the Information system success model that tests post-adoption adds depth to the analysis, qualities particularly relevant in Ethiopia, where the system occasionally suffers downtime (DeLone & McLean, 2003; Yimam et al., 2024). The model also comprises trust theory, demonstrating how trust in government and technology mediates the relation with sustained use, particularly in a voluntary adoption setting, and data security is viewed as an issue. (Beldad et al., 2012; Pashentsev, 2024; Srivastava & Teo, 2009). The study's central proposition is according to the ISSM (DeLone & McLean, 2003), DOI theory (Rogers, 2003), and TOE frameworks, while ultimately mediated by perceived relative advantage and complexity (Chen et al., 2015; Wang, 2012), the relationship between system and information quality and use intention is indirect. The fact that both mediate continuance intention, particularly important in voluntary use contexts, in the case of Ethiopia, where low digital literacy means users have to see a clear perceived relative advantage and low complexity to continue use (Saptono et al., 2024; Yimam et al., 2024). Model's examination of the psychological mediation proposes a finer-grained, context-specific

explanation for e-filing continuance over models that only look at the direct effects (Razak et al., 2021).

Hypothesis Development

Influence of Compatibility on e-filing system Continuance intention:

Compatibility is a key influencer of continuance intention because it allows e-filing systems to fit into the user's existing workflows and enhance satisfaction while minimizing cognitive load (Lin, 2013; Rana et al., 2012). Technology encourages both initial acceptance and ongoing use benefits that do not disrupt workflow when it is compatible and works easily with users' current operational processes (Ojha, 2009; Zhu et al., 2006). Additionally, compatibility lowers cognitive effort and increases perceived usefulness, which increases user satisfaction and trust (Lin, 2013; Rana et al., 2012). Compatibility with current and future workflows is essential in Ethiopia's rapidly evolving digital world, where laws and procedures are always changing, to maintain user trust and avoid withdrawal (Ojha, 2009; Yimam et al., 2024). Firms experiencing the most compatibility or seamless interaction between e-filing platforms and internal processes will likely generate the highest continuance intention of their customers due to the perceived consistency and predictability of interaction (Ojha, 2009). Accordingly, the next hypothesis is presented based on the theorized and empirical evidence.

H1: Perceived compatibility positively and significantly influences e-filing system continuance intention.

Influence of Government oversight on e-filing systems: Continuance intention:

As mentioned in the study by Shao et al. (2015), government oversight is explained as enabling monitoring, enforcement, and regulations in the e-filing system. Its influence has been spotted in many developing nations, by fostering taxpayers' trust, mitigating security issues, and aiding in the digital transformation of the tax system (Lai & Guynes, 1997; Ndou, 2004; Ramoo et al., 2013; Rusli, 2023; Shao et al., 2015). Besides initial adoption, government oversight offers reliability, system integrity, and trust essential for continuance intention (DeLone & McLean, 2003; Ullah et al., 2023). It functions as a signal of sustainable, minimized risks and promotes sustained commitment through compliance and ethics (Ullah et al., 2023; Veeramootoo et al.,

2018). Further, government oversight helps boost relative advantage and complexity through improved quality and security integrated in the system to hold up continuance engagement (Abdul Rahim et al., 2023; Mandari & Koloseni, 2022; Sijabat, 2020).

H2: Government oversight positively and significantly influences e-filing systems continuance intention

Influences of IT Infrastructure on e-filing system Continuance intention:

Reliability and performance of the IT infrastructure improve e-filing system continuance intention. An infrastructure that is reliable and properly maintained leads to consistent system performance, decreased technical issues, and increased intention to continue use (Narayanasamy et al., 2011; Pérez et al., 2005; Soares-Aguiar & Palma-dos-Reis, 2008). In Ethiopia, where shifting power outages and less reliable connectivity regularly disrupt access to e-filing, firms with reliable IT systems are presumably to continue using the e-filing system, while those who do not have access to reliable IT infrastructure will be at higher risk of abandoning use of the system (Mpofu, 2024; Yimam et al., 2024). Given the important role reliable infrastructure plays, we hypothesize:

H3: Availability and quality of IT infrastructure positively and significantly influence e-filing systems continuance intention.

Influence of Firm Size on e-filing system Continuance intention:

The size of the firm has a positive effect on its continuance intention to use an e-filing system. Although resources will help with the initial adoption, larger firms have the means to maintain use over time because of their operational complexity and need for solutions to maintain compliance (Santoro et al., 2023). Larger firms have organizational slack, a dedicated IT unit or staff, training budgets, and integrated systems with the capability to counter post-implementation challenges and support continued use when compared to firms that are smaller or do not have the resources (Gambardella & Torrisi, 2001; Zhu & Kraemer, 2005). A weakness could be bureaucratic inertia, which may impact an organization's maintenance of new e-filing system continuance intention, but continued use by larger firms is higher because of their resource advantage over medium-sized enterprises that do not have these bonuses (Bellon et al., 2022;

Sandberg et al., 2009; Yimam et al., 2024). It is reasonable to consider the benefits to firms in size, and the hypothesis is:

H4: Firm size positively and significantly influences e-filing system continuance intention

The influence of Relative Advantage on E-filing system Continuance intention:

According to Rogers (1995), Diffusion of Innovations (DOI) theory, relative advantage is the extent to which an innovation is viewed to edge the solutions it replaces (AlBar & Hoque, 2019). Faster processing, reduced mistakes, cost savings, and ease of use are all examples of features that can build relative advantage, which will generate satisfaction and loyalty among users (Ambali, 2009; Santhanamery & Ramayah, 2018; Ullah et al., 2023). Empirical evidence indicates that companies show stronger intentions for using the system when it creates evidence of efficiency gains, such as time savings (Okunogbe & Pouliquen, 2018). Additionally, in voluntary contexts, such as Ethiopia, continuous realization of the benefits is important to avoid abandonment, especially with low-cost switching and problematic infrastructure issues (Rogers, 2003). According to (DeLone & McLean, 2003; Ibrahim, 2014), perceived relative advantage is a significant predictor of continued use since it not only encourages the adoption of new technology but also helps people remain interested in it over the long run (Ibrahim, 2014). This theory conforms to the general information system literature which stresses the link between users' continued commitment and relative advantage (Bello & Kasztelnik, 2022; Marston et al., 2011), particularly in limited resources environment.

H5: Relative advantage positively and significantly influences E-filing system continuance intention.

Influence of Security Concern on e-filing system Continuance intention:

In e-filing research, perceived risks are one of such variables that hold much importance (Santhanamery & Ramayah, 2018). Security concerns are related to the exposure and loss of company data while submitting tax returns online (Ambali, 2009; Azmi & Kamarulzaman, 2010). Taxpayers who view security as an ongoing issue are plausibly cease sustaining it for fear of data breaches (Karavasilis et al., 2010; Ravindran & Kumar, 2012; Rifat et al., 2019). However, placing safeguarding measures substantially alleviates the risk of theft or fraud and encourages continuance intention (Hu et al., 2009).

Because tax data is especially sensitive, security is even more critical when considering user trust and continued use in an e-filing system (Stewart & Segars, 2002). In Ethiopia, a recent series of cyberattacks both on the Ministry of Finance and the Commercial Bank of Ethiopia has heightened domestic concerns about security, making perceived risk a prominent barrier to continuity unless countered by some overt attempts at security (Adane, 2020; Pashentsev, 2024). For this reason, and given the notion that security might play an integral role regarding user trust, the following hypothesis is formulated:

H6: Security concern negatively and significantly influences e-filing systems' continuance intention.

Influence of Service quality on e-filing systems continuance intention:

As mentioned in a paper by Zheng et al. (2013), perceived system quality is defined as the evaluation of the performance of the system feature based on the user's own experience. While, explained as the user's perception about the technical performance of the website, cited in (Teo et al., 2008). However, other scholars consider it as a salient antecedent of continuance use, especially in voluntary adoption settings (DeLone & McLean, 2003; Parasuraman et al., 2005), and quality support leading to sustained use of the e-filing platform (Ramoo, 2006). This is especially important in Ethiopia, where there are management issues of system reliability and trust, and users need excellent service to continue using e-filing rather than going back to manual methods (Yimam et al., 2024). Thus, there is evidence of available service support being a vital piece in engaging users in e-filing systems in the long term. Thus, we hypothesize:

H7: Service quality positively and significantly influences e-filing continuance intention

Influence of Perceived Complexity on e-filing system Continuance intention:

Based on the definition of (Mannan et al., 2021), operationalize complexity as easy to learn, use, and flexible. Technologies perceived to be easier to use and less complex have a higher chance of acceptance and use (Agarwal & Prasad, 1999; Hung et al., 2006). Complexity highly influences the sustained use of the e-filing system by taxpayers. Some studies indicate that SMEs refrain from implementing complex systems for their high initial costs and process changes (AlAwadhi & Morris, 2008; Thong, 1999). Nevertheless, user-friendly system interfaces and guided producers reduce perceived effort that stimulates sustained usage of the system (Saptono

et al., 2024). On the contrary, actions such as repeated entry of the data or requiring technical skill can force users to disown the system (Borgman et al., 2013; Cooper & Zmud, 1990; Shao et al., 2015). Additionally, prior research demonstrates that easing interactions can reduce compliance costs and increase long-term user commitment (Al-Jabri, 2015; DeLone & McLean, 2003).

In the Ethiopian voluntary setting, complexity is an obstacle to continued use unless supported with a simplified user interface or offered training (Saptono et al., 2024; Yimam et al., 2024). Similar to the work of Rogers (2003) and verified by DeLone & McLean (2003), as the perceived complexity of an application increases, it decreases the likelihood of sustained engagement. Thus, we formulate the following hypotheses:

H8: Increased perceived complexity negatively and significantly influences e-filing system continuance intention.

Influence of Top management support on e-filing continuance intention:

It is indispensable for top management to get engaged to ensure long-term e-filing systems. They can secure the needed resources, address issues as they arise post-implementation, and create a compliant culture (Duan et al., 2012; Ramdani & Kawalek, 2007).

In the voluntary adoption setting of Ethiopia, persistent engagement from executives, through follow-up, training, and performance checks, will keep the system intact (Low et al., 2011; Yimam et al., 2024). Backing from top management is determined to have a positive influence on sustained use, especially in settings defined by frequent system updates and regulatory changes (Jeyaraj et al., 2006; Thong, 1999). Engagement from intermediate management offers a user guarantee and improves confidence in the system, which leads to sustained user involvement. Accordingly, we hypothesize:

H9: Top management support positively and significantly influences e-filing system continuance intention.

Mediating role of perceived complexity and relative advantage

Mediating role of relative advantage between Information quality and e-filing systems, Continuance intention:

Relative advantage mediates the relation between information quality and continuance intention by framing precise, accurate, and timely information as a strategic advantage over inefficient manual or fragmented processes (Bakar & Melan, 2018; Rogers, 2003). When users have access to their tax calculations being accurate, their payments verified in real time, and current regulations, the e-filing process becomes perceived as more efficient, less risky, and more empowering; all of which support continuance intention (Xu et al., 2013; Zheng et al., 2013).

The mediation effect is especially salient in Ethiopia, where manual processes are subject to human error and other bureaucratic delays; therefore, in this context, informational superiority becomes a strong factor in encouraging sustained use of the e-filing system (Ali et al., 2017; Saptono et al., 2024). Empirically, studies have shown that through information quality improvements, perceived relative advantage is enhanced, consequently, has a role in driving sustained use and is considered a fundamental psychological mediator (Mangoting et al., 2021; Wang & Lin, 2017).

H10a: The relation between information quality and e-filing continuance use intention is positively and significantly mediated by relative advantage.

Mediating role of perceived complexity between Information quality and e-filing systems Continuance intention:

The influence of information quality on sustained use is influenced by perceived complexity and how users understand content (Chen et al., 2017; Rachmawati et al., 2025). When information is presented clearly, organized sensibly, and devoid of jargon, cognitive load and difficulty are reduced, and satisfaction and continuous use increase (Setiawan, 2023). Inversely, when content is ambiguous or technical in nature, perceived complexity increases, which can cause a feeling of confusion or disengagement, especially for the less knowledgeable user about the topic (Chandra et al., 2015). In the Ethiopian setting, simpler information is preferred to promote information use (Saptono et al., 2024). Findings support the idea that perceived complexity from information

clarity mediates the relation between information quality and continuance intention (Chang et al., 2005; Mustapha & Obid, 2015).

H10b: The relation between information quality and e-filing continuance intention is negatively and significantly mediated by perceived complexity.

Mediating role of relative advantage between System quality and e-filing system continuance intention:

Other than the case of e-filing, relative advantage was used as a mediator (Huang, 2018; Lin et al., 2009). In this research also considered a critical mediator that bridges system quality to continued use. When a system is perceived as dependable, fast, and free of errors, users will recognize some level of benefit in that they save time, have lower compliance costs, and face a lower risk of audits (Bakar & Melan, 2018; Saptono et al., 2024), thus increasing continuance intention (Rogers, 2003; Wang & Lin, 2017). Relative advantage is important in a context such as Ethiopia, where users must weigh the perceived digital advantages and their understanding of manual processes (Ali et al., 2017; Mangoting et al., 2021). Previous research has indicated that relative advantage fully mediates perceived usefulness, which is a proxy for system quality, on continuance intention, suggesting that it plays an enormous role in staying with e-filing (Muslichah et al., 2023; Wang & Lin, 2017).

H11a: The relationship between system quality and e-filing continuance use intention is positively and significantly mediated by relative advantage.

Mediating role of perceived complexity between System quality and e-filing system Continuance intention:

Perceived complexity, the extent to which the e-filing system is viewed as difficult to learn or apply, negatively mediates the relation between system quality and continuance. The higher the system quality is, the lower the perceived complexity, resulting in higher user confidence and user satisfaction (Setiawan, 2023). In contrast, when the system quality is poor, the perceived complexity will be high, user frustration is likely to result, and eventual abandonment may occur from users who at first made the effort to use the system (Santhanamery & Ramayah, 2018). In Ethiopia, where digital literacy is low and the reliability of internet access is uneven (Qiang, 2024), reducing perceived complexity through conscientious system design will be crucial for

the sustainability of usage (Saptono et al., 2024; Yimam et al., 2024). In quantitative studies, perceived complexity significantly negatively mediates the relation between system quality and continuance intention, which demonstrates that perceived complexity is an essential psychological mechanism for technology adoption (Chang et al., 2005; Mpinganjira, 2014).

H11b: The relationships between system quality and e-filing continuance intention are negatively and significantly mediated by perceived complexity.

Indirect effect of Information quality on e-filing system Continuance intention:

Information quality, the degree to which tax-related data is accurate, complete, and relevant, plays an essential role in continuance intention, as users depend on accurate information to comply with tax obligations and avoid penalties (DeLone & McLean, 2003; Floropoulos et al., 2010). In settings with voluntary e-filing, high-quality information facilitates the ease of use by reducing user effort and compliance risk, which enhances the continuance intention (Chen, 2010; Chumsombat, 2014; Laumer et al., 2017; Tjondro et al., 2019). In countries like Ethiopia, tax tables can be out of date or instructions unclear; failure to provide timely and precise data in a tax-compliant situation can erode taxpayers' trust and lead to abandonment of the tax system (Chen et al., 2017).

H12: Information quality positively and significantly influences e-filing system continuance intention

Indirect effect of system quality on e-filing system Continuance intention:

System quality, which includes the reliability of the system, how easy it is to navigate, response time, and operation without errors, is a crucial driver of continued use (DeLone & McLean, 2003; Wangpipatwong et al., 2011). In voluntary-use shapes, like in Ethiopia, where users can opt to revert to non-digital methods or the traditional manual method, system quality becomes critically important; for example, an unreliable or cumbersome platform will quickly undermine trust and result in abandonment (Ambali, 2009; Garnetia & Rasmini, 2020). Studies conducted in areas of e-government and e-taxation demonstrate that system quality leads to higher relative advantage, which in turn can lead to continuance of the system (Teo et al., 2008). The Ethiopian environment will have challenges surrounding system downtimes, validation errors, and lack of proactive real-time support which are prevalent among the user demographic existing in Ethiopia,

making it even more essential to provide a positive system quality surrounding the system, when a paper-based compliance will always be an alternative and easy option (Santoro et al., 2023; Yimam et al., 2024).

H13: Higher system quality positively and significantly influences e-filing systems continuance intention

Research Method

This study utilized a quantitative, non-experimental, cross-sectional, and predictive design to address the study objectives(Sekaran & Bougie, 2016). We employed Partial Least Squares Structural Equation Modelling (PLS-SEM) utilizing SmartPLS v4.1(Ringle et al., 2024). This approach is effective for managing non-normal data through non-parametric testing and predictive modelling (Hair Jr et al., 2017).

We made a self-administered survey with a 7-point Likert scale using tools that had been tested in previous studies of IT adoption (Akram et al., 2019; Belanche et al., 2014; Bélanger & Carter, 2008; Chen et al., 2015; Dwivedi et al., 2006; Dwivedi et al., 2011; Teo et al., 2008; Veeramootoo et al., 2018). The survey items were assessed for psychometric qualities (Antaya et al., 2014; Leavy, 2017) and then translated into Amharic and back into English to make sure that they can convey the same meaning (Brislin, 1986). These are best practices for survey instrument format and clarity (Festinger & Katz, 1953; Sekaran & Bougie, 2016).

Data was collected from medium and large-scale enterprises in Ethiopia, particularly from Addis Ababa (the capital city) and Debre Birhan (a zonal city). Since they were knowledgeable about their company's procedures and might offer insightful opinions on research on technology adoption, active employees and managers were selected using a convenience sampling method in the absence of a sampling frame (Taylor & Todd, 1995; Venkatesh et al., 2003). After 208 responses were obtained, the data were cleaned to remove mistakes and outliers, resulting in a legitimate final sample (Bazeley, 2012; Hair et al., 2006).

The data were also evaluated for robustness and normality (Hair et al., 2013). The results indicated that the data were probably normally distributed (Bulmer, 1979; Byrne & Van de Vijver, 2010; Field & Gillett, 2010; Kline, 2011) and that the skewness (-0.875 to 0.506) and kurtosis (-1.809 to 1.804) ranged from acceptable values. Lastly, the research model was tested

using the two-step method suggested (Anderson & Gerbing, 1988). First, a measurement model was tested for validity and reliability, and then the structural model was evaluated to enable testing of hypotheses. All path coefficients were tested for significance using bootstrapping with 500 resamples (Chin, 1998).

Table 1: Respondents' descriptive statistics

Variable	**Level of measurement**	**Latent construct/scale/value**	**#**	**%**
Staff	Position	Management	47	22.6
		Finance head	72	34.6
		Accountant	89	42.8
Industry/sector	primary operation of the business	Manufacturing	94	45.2
		Service	114	54.8
Firm size	Number of employees	<= 75	53	25.5
		> 75 but <= 99	22	10.6
		> 99 but <= 250	81	38.9
		> 250	52	25
Age	Age/Year of operation	< 5	47	22.6
		>5 but <= 10	63	30.3
		> 10	98	47.1
Location	Capital/ Zonal city	1= Addis Ababa	156	75
		0= Debre Birhan	52	25

Source: Authors' own work

Analysis of Results

The data were systematically examined utilizing the PLS-SEM technique in SmartPLS 4.1 to explain and predict (Ringle et al., 2024). It assesses the measurement and structural model together using the PLS Algorithm, Bootstrapping (done with 5,000 resamples), and PLSPredict (using 10-fold cross-validation) (Duarte et al., 2010; Vatanen, 2012). Missing values were replaced with the means (Vatanen, 2012).

Researchers evaluated the model's reliability, convergent validity, and discriminant validity (Fornell & Larcker, 1981; Hair et al., 2013; Henseler et al., 2015). Variations, multicollinearity, path coefficients, R2, f2, Q2, and hypothesis testing were used to assess the structural model after the outer model was evaluated (Chin et al., 2010; Esposito Vinzi et al., 2010; Henseler, 2010; Kaufmann & Gaeckler, 2015). The detailed results inform the research's contributions and conclusions.

Assessing of measurement model:

Reliability and validity of items from validated instruments were reassessed. Most of the loadings exceeded 0.70 (Hair et al., 2013), but a few were between 0.60-0.70, which were included if the loading did not reduce reliability or Ave (Hair Jr et al., 2017). The Cronbach's alpha scores for all items surpassed 0.70, but a low score of 0.60, which was considered acceptable due to high item-total correlations and model fit, and in keeping with methodological tradition of not relying on a strict cut-off score and importance of theoretical implications (Hair et al., 2019; Nunnally, 1978; Streiner, 2003). Confirmatory Factor Analysis supported the structure with all loadings above 0.50 and all constructs all had a minimum of alpha of 0.708.

The composite reliability exceeded 0.70, and the Adequate AVE across items was .565 to .817, which were above the minimum threshold for convergent validity and reliability (Hair et al., 2013; Nunnally Jr, 1970). The discriminant validity was checked using Fornell-Larcker criteria and HTMT ratios. The square-rooted AVE was also higher than inter-construct correlations. The slight HTMT ratios over 0.85 up to 0.888 were brought into bootstrapping confidence intervals but showed to support each construct's distinctiveness (Franke & Sarstedt, 2019; Henseler et al., 2015). Overall, results show robust reliability and validity items, in which findings are given in Table 3 and Table A1 for the discriminant validity criterion.

Assessment of the Structural Model:

Ensuring measurement reliability and validity, we evaluated the structural model based on PLS-SEM criteria (Kaufmann & Gaeckler, 2015). Key parameters included multicollinearity, R^2, f^2, path coefficients, model fit, and Q^2 (Henseler, 2010). As a more rigorous assessment of potential common method bias (CMB), a full collinearity assessment (FCA) was performed by examining the variance inflation factor (VIF) values for predictor constructs in the structural model, as suggested by Kock (2015). The VIF values obtained from the PLS-SEM algorithm were inspected from the inner model section of the collinearity statistics. The result indicated that the VIF values for all latent constructs tested against the endogenous variable in the model ranged from 1.177 to 2.879. Additionally, Harman's single-factor test was conducted using exploratory factor analysis (EFA) on all measurement items. The result indicated that the single factor accounted for 25.505% of the total variance. Since all VIF values were below the recommended threshold of 3.3 (Kock, 2015) and the percentage of variance was below a conservative threshold of 0.5 (Podsakoff et al., 2003), the study concludes that CMB is not the concern and does not contaminate the path estimates (see Table A3).

The following parts discuss the model's explanatory power and predictive relevance using R^2, f^2, significance tests, Q^2, and model fit (Hair Jr et al., 2020).

Model Fit Statistics:

The model's fit was assessed using standard indices (SRMR, NFI, d_ULS, d_G, and $\chi 2$) (Hu & Bentler, 1998) and the statistics indicated a moderate overall fit.

Table 2: Model Fit Criteria Summary

	Saturated model	Estimated model
SRMR	0.081	0.090
d_ULS	6.278	7.733
d_G	2.060	2.226
Chi-square	2178.425	2257.274
NFI	0.659	0.646

Source: Authors' Own Work

We evaluated model fitness using the common metrics SRMR and NFI, with values below 0.08 and close to 1 indicating a good fit, respectively (Mai et al., 2021). The SRMR for the standard model was 0.081, slightly above the strict cut-off but still outperformed the estimated model. Similarly, NFI values were consistently moderate (0.659 vs 0.646). Metrics like d_ULS and d_G further highlight differences between the saturated (d_ULS = 6.278, d_G = 2.060) and estimated (d_ULS = 7.733, d_G = 2.226) models, suggesting that structural refinement could enhance the fit. Although refinement may enhance model fit, the presence of significant path relationships strongly supports the model's theoretical validity and utility for drawing valuable research conclusions.

Table 3: General Overview of reliability & validity criteria for measurement instruments

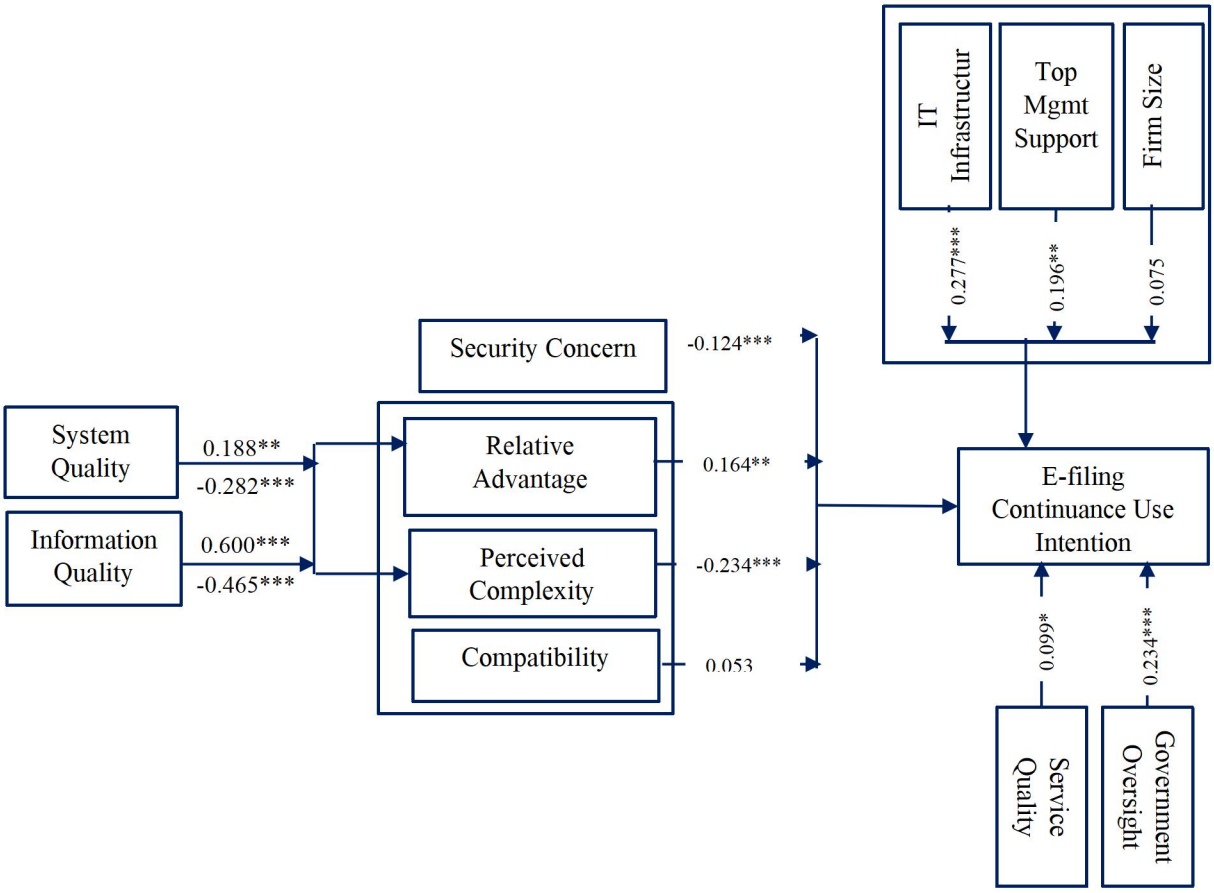
Constructs	Item	Item loadings	Cronbach's alpha	Composite reliability (rho_a)	Composite reliability (rho_c)	Average variance extracted (AVE)
CPT	CPT1	0.900	0.827	0.840	0.896	0.743
	CPT2	0.852				
	CPT3	0.832				
CU-INTN	CU-INTN1	0.746	0.854	0.876	0.901	0.696
	CU-INTN2	0.833				
	CU-INTN3	0.894				
	CU-INTN4	0.857				
GO	GO1	0.832	0.771	0.814	0.864	0.681
	GO2	0.905				
	GO3	0.729				
INFQ	INFQ1	0.800	0.800	0.803	0.862	0.555
	INFQ2	0.756				
	INFQ3	0.706				
	INFQ4	0.740				
	INFQ5	0.720				
ITI	ITI1	0.765	0.755	0.796	0.854	0.662
	ITI2	0.818				
	ITI3	0.856				
RA	RA1	0.730	0.738	0.740	0.836	0.560
	RA2	0.764				
	RA3	0.789				
	RA4	0.708				

SC	SC1	0.916	0.890	0.922	0.930	0.817
	SC2	0.880				
	SC3	0.915				
SERQ	SERQ1	0.818	0.889	0.913	0.915	0.685
	SERQ2	0.851				
	SERQ3	0.864				
	SERQ4	0.854				
	SERQ5	0.746				
SYQ	SYQ1	0.869	0.919	0.925	0.937	0.712
	SYQ2	0.833				
	SYQ3	0.800				
	SYQ4	0.873				
	SYQ5	0.820				
	SYQ6	0.865				
TPCX	PCX1	0.893	0.861	0.865	0.915	0.783
	PCX2	0.856				
	PCX3	0.905				
TMS	TMS1	0.720	0.747	0.816	0.848	0.652
	TMS2	0.905				
	TMS3	0.787				

Notes: CPT = perceived compatibility; CU-INTN = Continuance Intention; PCX = perceived complexity; GO = Government Oversight; INFQ = Information Quality; ITI= Information Technology Infrastructure; LGF = Large Firm (dummy); RA = Relative advantage; SC = security concern; SYQ = system quality; SERQ = service quality; TMS = Top management support

Source: Authors' own work

Figure 1: Analyzed Research Model



Concepual Note:(Sig. level: (p-value < .001, ***); (p-value < .01,**);(p-value < .05,*); (p-value > .05, ns)); The path coefficients from quality dimensions (SYQ & INFQ) to the two technological factors (RA & PCX) are indicated above the line for SYQ and below the line for INFQ.

Source: Authors' own work

Coefficient of determination and effect size:

The model's explanatory power was evaluated via R^2, with bootstrapping (5,000 resamples) confirming that predictors—RA, PCX, SERQ, SC, TMS, ITI, SYQ, INFQ, and GO—explained 78.1% of variance in CU-INTN (R^2=0.781), indicating significant predictive relevance (Cohen, 2016; Hair Jr et al., 2020). The association between information system success model variables (SYQ, INFQ) and diffusion of innovation variables (RA, PCX) is significant, and their influence accounts for 49.4% and 40.9% respectively, demonstrating a strong mediating effect. The path coefficients were evaluated using SmartPLS v4.1 closely with 5,000 bootstrap samples, while

effect size (f^2) were checked according to cohen's benchmark (0.02 =small; 0.15 =medium; 0.35 = large)(Guenther et al., 2023; Kaufmann & Gaeckler, 2015), and the test results swung between 0.035 to .0578 except for CPT and LGF, whose value go below the minimum threshold. Test results, detailed in Table 5, show the strength, influence, and significance of the associations.

Predictive relevance of the structural model:

Besides $R^{2,}$ which shows predictive accuracy in-sample, we assessed out-of-sample prediction employing PLSpredict with a resample of 10-fold cross-validation (Hair Jr et al., 2020; Shmueli et al., 2019). On top of that, a bootstrapping method was applied with 5,000 resamples to verify reliability. The cutoff point of 0.00, 0.25, and 0.5 refers to small, medium, and large predictive relevance, respectively (Hair et al., 2019; Hair Jr et al., 2020).

The key construct, CU-INTN, had a Q^2predict of 0.724, while for the mediators (RA, PCX), it is determined to be 0.479 and 0.394, respectively, both present significant predictive power as established by the Q^2predict values. Furthermore, the model was also verified as reliable through mean absolute error (MAE) (0.429) and root mean square error (0.529), which once again demonstrated the robustness of the model. Meanwhile, Q^2predict values across indicators were found to range from 0.171-0.489, which also demonstrated strong predictive relevance, in addition to model generalizability (see Table 4).

Table 4: PLS-SEM PLSpredict LV Summary

Constructs	Q^2predict	RMSE	MAE
CU-INTN	0.724	0.529	0.429
RA	0.479	0.727	0.588
PCX	0.394	0.785	0.623

Source: Authors' own work

Hypothesis Testing:

Structural model evaluation, represented in Table 5 and Figure 1, shows significant path coefficients and describes 78.1% of the variance in CU-INTN. A significant correlation between SYQ and RA was established by H11a ($\beta = 0.188$, $t = 3.392$, $p = 0.001$), supporting its role in justifying CU-INTN by making the process noticeably faster, easier, and less error-prone than traditional paper filing. Similarly, H11b indicated that SYQ and PCX were confirmed to affect

CU-INTN (β = -0.282, t = 5.101, p < 0.001), advocating that SYQ simplifies the underlying complexity of the system to the user, thereby influencing CU-INTN.

H10a demonstrated that INFQ significantly relates to RA by directly enhancing the key benefits that constitute relative advantage (β =0.600, t = 13.248, p < 0.001), further confirming its impact.

Table 5: Path coefficients, significance, and impact on the relationships

Hypothesis Name	Construct Relationship	β-value	STDEV	T-statistics	P-values	Level of Support
H1	CPT -> CUI-INTN	0.053	0.042	1.256	0.209	Not Supported
H2	GO -> CUI-INTN	0.234	0.050	4.713	0.000	Supported
H3	ITI -> CUI-INTN	0.277	0.051	5.396	0.000	Supported
H4	LGF -> CUI-INTN	0.075	0.078	0.963	0.336	Not Supported
H5	RA -> CUI-INTN	0.164	0.051	3.223	0.001	Supported
H6	SC -> CUI-INTN	-0.124	0.045	2.748	0.006	Supported
H7	SERQ -> CUI-INTN	0.099	0.043	2.306	0.021	Supported
H8	PCX -> CUI-INTN	-0.234	0.047	5.015	0.000	Supported
H9	TMS -> CUI-INTN	0.196	0.043	4.577	0.000	Supported
H10a	INFQ -> RA	0.600	0.045	13.248	0.000	Supported
H10b	INFQ -> PCX	-0.465	0.059	7.903	0.000	Supported
H11a	SYQ -> RA	0.188	0.056	3.392	0.001	Supported
H11b	SYQ -> PCX	-0.282	0.055	5.101	0.000	Supported

Notes: Standard deviation (STDEV), Original sample (β), T statistics (jO/STDEVj)
Source: Authors' own work

Additionally, H10b showed that INFQ significantly influences PCX as it simplifies the user's mental effort and decision-making process (β = -0.465, t = 7.903, p < 0.001), which rationalizes CU-INTN. H8 showed a significant effect of PCX on CU-INTN (β = -0.234, t = 5.015, p < 0.001), substantiating its influence. RA was positively related to CU-INTN (β = 0.164, t = 3.223, p = 0.001), supporting H5. However, CPT, which had a positive effect, was found insignificant (β = 0.053, t = 1.256, p = 0.209), failed to support H1. Whereas, SC had a negative influence on CU-INTN (β = -0.124, t = 2.748, p = 0.006), supporting H6. Continuing with the discussion, ITI

is positively and significantly influencing CU-INTN ($\beta = 0.277$, $t = 5.396$, $p < 0.001$) through a reliable, high-performance, and well-integrated IT system, thereby impacting it and supporting H3. And top-level management has a positive and significant effect on CU-INTN ($\beta = 0.196$, $t = 4.577$, $p < 0.001$), impacting it by funding and promoting the use, so supporting H9. Further, SERQ is found to affect positively and significantly CU-INTN ($\beta = 0.099$, $t = 2.306$, $p = 0.021$), supporting H7. While the small $\beta = 0.099$ suggests that good service may not significantly motivate users to continue, poor service is highly likely to deter them.

Government oversight also demonstrated a significant influence on CU-INTN. For instance, GO significantly affected CU-INTN ($\beta = 0.234$, $t = 4.713$, $p < 0.001$), supporting H2. However, firm size has a positive influence on CU-INTN ($\beta = 0.075$, $t = 0.963$, $p = 0.336$), which shows greater influence for larger firms compared to medium firms, but failed to support H4.

Hence, all hypothesized relations between ISSM variables (SYQ, INFQ, and SERQ), TOE framework variables (ITI, TMS, and GO), DOI variables (PCX, RA), and SC from trust-based theories and CU-INTN were established, indicating notable predictive power on the proposed hypotheses. Besides, the relation among technological, organizational, and environmental factors and CU-INTN was significant, showing that they are drivers of CU-INTN.

Mediation Analysis:

We checked mediation analysis to decide whether technological factors mediate the influence of SYQ and INFQ on CU-INTN. This analysis evaluated both the direct influence of SYQ and INFQ on the mediators – PCX and RA – and their indirect influence on CU-INTN. Based on a multi-stage mediation approach, we first established that SYQ and INFQ materially predicted the mediators and then evaluated how these mediators influence CU-INTN. The results demonstrate that the indirect effect of INFQ and SYQ through the technological factor (RA) was generally positive and significant, while negative and significant for PCX. The indirect influence of INFQ ($\beta = 0.207$, $t = 6.077$, $p < 0.001$) and SYQ ($\beta = 0.097$, $t = 4.465$, $p < 0.001$) on CU-INTN was significant and positive. The statistical output, presented in Table A4, Appendix 1, advocates that technological factors strongly bridge how ISSM variables (SYQ, INFQ) linked to CU-INTN; indicating each factors significantly influence the relationship, suggesting their role in shaping how system attributes influence taxpayers' intentions within the framework.

Discussion of Key Findings

This research aims to examine the factors influencing e-filing systems continuance intention in Ethiopia, based on the frameworks of ISSM, DOI, and TOE. The most critical finding is the full mediation of the relationship between system/information quality and continuance intention by users' cognitive evaluations of relative advantage and perceived complexity. This provides a substantial refinement to the updated ISSM (DeLone & McLean, 2003). Consistent with the cognitive-affective framework of the expectation confirmation model (ECM) (Bhattacherjee, 2001), system quality and information quality are not direct drivers of continuance but rather functional precursors to utility. Users engage in a process of cognitive translation –they process technical attributes like system speed and data accuracy into perceptions of benefit (RA) and usability (PCX) (Chang et al., 2005; Chen, 2010; Ibrahim & Zakaria, 2015). This supports the assertion that in a developing context, quality acts as a mechanism to reduce the cognitive load required to bridge the pervasive design reality gap often observed in technology implementation in such regions (Heeks, 2003), effectively translating technical data accuracy into operational advantage.

Observed significance of firm size and technological compatibility in the post-adoption phase challenges traditional assumptions of the DOI theory (Rogers, 2003) but strongly aligns with the dynamic nature of IS continuance research. While these factors serve as critical gatekeepers during the initial adoption decision, given resource availability and fit, their relevance fades once the system is routinized. This is consistent with the confirmation stage in ECM, where direct user experience and specific satisfaction with the system's utility override initial structural constraints (Bhattacherjee, 2001). The equitable access effect of the electronic filing system effectively achieves a level of platform neutrality, rendering firm size irrelevant. Compatibility, having been resolved as a sunk cost after initial setup, yields to active usage drivers, with system reliability becoming the dominant factor. This outcome provides a positive indicator of the scalability of the e-government initiative.

The enduring significance of service quality, government oversight, and IT infrastructure highlights the critical environmental dimension often underemphasized in purely behavioural models. In the sub-Saharan African context, characterized by institutional voids, government oversight functions not merely as a regulatory mechanism but as a crucial source of coercive

isomorphism and trust building (DiMaggio & Powell, 1983). Active facilitation by the government signals legitimacy and stability, thereby reducing the perceived risk associated with system use (Pashentsev, 2024; Saptono et al., 2024). Furthermore, the critical role of IT infrastructure and top management support validates the reality component of the model. Without the foundational reality of reliable power and interest connectivity (ITI) and TMS, the technical design of even a high-quality e-filing system fails to survive the rigors of daily operational use.

Study Contribution and Limitation

Theoretical Contribution:

This research proposes, tests, and uncovers empirical support for an integrated framework that connects the Information Systems Success Model (ISSM), Technological-Organizational-Environmental (TOE), and Diffusion of Innovations (DOI) theory, which have been the focal theoretical constructs of a fragmented body of research that has previously offered limited and mixed conclusions concerning continuance intention, while also providing a comprehensive perspective that bridges the initial decision to adopt the Innovation to the reuse of the Innovation (Bhattacherjee, 2001; Rahman & Pangendra, 2022). The research emphasizes the dual mediation model, which demonstrates that information and service quality impact continuance to use via relative advantage and perceived complexity, contributing to our understanding of mixed findings from previous research (Li & Shang, 2020; Teo et al., 2008). Additionally, the research extends the ISSM, demonstrating the importance of service quality as a significant factor related to continuance to use in voluntary situations (DeLone & McLean, 2003; Yang et al., 2017), and provides an important contribution to DOI theory by demonstrating its attributes, including firm size and compatibility, that have importance at the point of adoption, but become irrelevant post-adoption, reinforcing experiential factors by emphasizing that many prior research perspectives demonstrated associational relationships to continued use after adoption (Rogers, 2003; Yimam et al., 2024). Moreover, the study challenges Western models by integrating the complexities of Ethiopia's institutional context of voluntary use, low digital literacy, and infrastructure into the research, improving ecological validity, while developing a multi-level framework, including pre-and post-adoption, addressing tension and complexity in low-capacity research environments (Ebrahim & Irani, 2005; Heeks, 2002; Moon & Norris, 2005).

Practical Contribution:

This research, in practical terms, provides a game plan for tax authority decision-makers in Ethiopia to address the user's perspective in tax and revenue collection systems. Tax authorities must pivot away from marketing the system's compatibility towards strategically enhancing service quality and oversight (Opiso et al., 2023; Saptono et al., 2024; Yimam et al., 2024).

IT infrastructure must be treated as a non-negotiable hygiene factor. Recognizing that basic IT infrastructure is an antecedent to continuance, the government should consider policies such as allowing users to access the e-filing portal at no cost or providing subsidized digital kits to SMEs. This directly addresses the fundamental access component of the design-reality gap (Heeks, 2003).

System design must target perceived simplicity through cognitive load reduction. Since perceived complexity is a key mediator, the design should be radically simplified. Implementing a simplified version of the e-filing portal for users with lower bandwidth or older hardware would maximize information quality while minimizing system heaviness, thereby directly boosting relative advantage.

Finally, the government must leverage oversight as a mechanism for coercive trust. Oversight should be used not just for enforcement but to signal system reliability and stability. This transparency builds the necessary trust for long-term user commitment, reducing anxiety around penalties caused by technical failures (Adane, 2020; Sangwa & Mutabazi, 2025).

Limitations and suggestions for future research:

While this research brings important contributions, it must be considered in conjunction with a number of constraints that leave avenues for future research. The cross-sectional design provides a static snapshot of continuance intention and therefore limits our ability to make causal inferences about the data and observe changes in attitudes in users over time; indeed, longitudinal or panel studies could enhance our understanding of how the determinants evolve with increasing user experience and institutional contexts (Bhattacherjee, 2001). While some procedural fixes have provided assurances against common method bias, there would be value to future research in working to enhance validity through triangulation of self-reported data with

objective data from system logs, such as usage frequency and duration or error rates (Podsakoff et al., 2003).

Theoretically, the non-significance of compatibility suggests that it is likely to serve as a baseline expectation of use after initial adoption, and future research would benefit from redefining measures of dynamic fit—it may be important in a different sense if the user has continually adapted their use to update regulatory requirements or integration with other existing systems (Ghobakhloo et al., 2011). Lastly, the pathways from system quality to continuance intention may be modified by factors like digital literacy or management support, which would highlight contextual contingencies and provide insights (Rahman & Pangendra, 2022).

A comparative cross-national analysis using government sources and disaggregation by firm size would assist in assessing the extent to which findings persist across context and resource level. The focus on Ethiopia and the combination of medium and large firms impede generalizability (Heeks, 2002). Resolving these issues will help researchers create more dynamic, contextually sensitive, and behaviourally sophisticated views on the sustainability of e-government.

Conclusion

Despite considerable expenditures on e-filing systems, medium and large enterprises in Ethiopia do not sustain usage, and many small to medium-sized firms return to manual compliance. Stickiness to the status quo is primarily sustained due to systemic issues of unreliability, security, and insufficient service support, which keep the compliance costs high and inhibit the development of a transformative digital tax. While prior research has primarily examined drivers of initial adoption, the mechanisms contributing to e-filing system continuance intention in a resource-constrained context still require inquiry.

This research played a part in the literature in the sense that continuance intention is informed by perceived service quality, IT infrastructure, top administration, and government oversight, with perceived relative advantage as an enabling factor. In contrast, perceived complexity and security fears were significant deterrents, reflecting the need to account for the user experience.

Importantly, our dual-mediation model indicates that system quality and information quality affect continued usage indirectly through their relationship with relative advantage and perceived complexity. While improving perceived relative advantage and reducing perceived complexity

are critical processes that allow technical performance to transform into ongoing behavioural commitment, compatibility, and firm size, which are positively associated with continuance intention, they were not significantly correlated, implying a shift away from structures toward experience perceptions in the post-adoption phase. At a theoretical level, this research advances the IS Success Model and Diffusion of Innovations theory by testing a dual-mediation mechanism, showing how quality factors influence continuance through cognitive appraisals, particularly in the setting of a developing country.

In practical terms, our findings advocate targeted interventions—for example, improving system reliability, security protocols, and showcasing benefits—to help build trust and minimize abandonment. User-centered design, responsive technical support, and transparent communication of system benefits can support positive perceptions that lead to voluntary, long-term compliance. Addressing this issue is critical in order to facilitate the transformation of e-filing from a requirement to a long-term, self-sustaining digital practice.

This research has its constraints, however. The cross-sectional design restrains causal inferences and fails to consider potential changes in perceptions over time. Self-reported data is also not without bias, notwithstanding the attempts to minimize bias in this study. Furthermore, the limitation of the study sampling and findings to medium and large firms may restrict generalizability to micro and small firms, which may have different barriers. The insignificant impacts of compatibility and firm size could reflect measurement issues or sampling saturation in the context of this study and should be replicated in a different sample.

Longitudinal or mixed-method approaches should be employed in future research to understand how perceptions of quality, benefits, and complexity may change with actual use of the system. Cross-national comparative studies and asking firms to identify their size can help distinguish whether differences in mechanisms are context-specific or universal. Understanding moderating factors such as digital literacy, regulatory environment by sector, and organizational culture has the potential to enhance understanding of the motivators and barriers to continuance.

In conclusion, the realization of the e-filing system in Ethiopia will mainly rely on matching system performance with taxpayers' cognitive assessments, confirming how taxpayers view the system based on actual use helps to reduce effort and control. Fostering belief through system reliability, user-friendly interface, and safety, tax officials can create a virtuous cycle of trust,

efficiency, and voluntary compliance, which in turn, enhances the potential of digital tax administration in Ethiopia and similar settings.

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Table A1: Measuring the discriminant validity of constructs using the Fornell–Larcker criterion HTMT ratio

Discriminant Validity Criterion		CPT	CUI	GO	INFQ	ITI	LGF	RA	SC	SERQ	SYQ	TPCX	TMS
		Fornell-Larcker criterion											
Heterotrait-Monotrait-Ratio (HTMT)	CPT	0.86	0.10	0.01	0.08	-0.08	0.01	0.08	0.21	0.27	0.00	-0.11	0.12
	CUI	0.12	0.83	0.73	0.60	0.70	0.35	0.69	-0.05	0.13	0.43	-0.61	0.63
	GO	0.06	0.84	0.83	0.48	0.62	0.36	0.60	0.00	0.01	0.43	-0.51	0.46
	INFQ	0.10	0.73	0.61	0.75	0.38	0.36	0.68	-0.03	-0.01	0.44	-0.59	0.31
	ITI	0.13	0.79	0.76	0.46	0.81	0.21	0.49	-0.01	0.12	0.26	-0.32	0.55
	LG	0.02	0.38	0.40	0.40	0.22	1.00	0.32	-0.01	0.06	0.26	-0.36	0.12
	RA	0.12	0.86	0.78	0.89	0.62	0.38	0.75	0.09	0.09	0.45	-0.57	0.54
	SC	0.24	0.07	0.05	0.07	0.07	0.01	0.12	0.90	0.36	0.01	-0.02	0.07
	SERQ	0.33	0.14	0.15	0.09	0.12	0.07	0.18	0.39	0.83	-0.01	0.00	0.08
	SYQ	0.04	0.47	0.48	0.50	0.29	0.26	0.54	0.06	0.07	0.84	-0.48	0.21
	TPCX	0.13	0.73	0.61	0.69	0.36	0.38	0.71	0.07	0.06	0.54	0.89	-0.32
	TMS	0.15	0.68	0.50	0.35	0.66	0.14	0.66	0.11	0.10	0.25	0.33	0.81

Source: Authors' own work

Appendix 1. Assessment of measurement instruments

Table A2: Confidence intervals bias corrected for Total effects at 95%

Construct Relationships	Original sample (O)	Bias	2.5%	97.5%
CPT -> CU-INTN	0.053	0.000	-0.040	0.128
GO -> CU-INTN	0.234	-0.004	0.140	0.332
ITI -> CU-INTN	0.277	0.003	0.176	0.376
LGF -> CU-INTN	0.075	0.003	-0.081	0.225
RA -> CU-INTN	0.164	-0.003	0.070	0.272
SC -> CU-INTN	-0.124	0.013	-0.203	-0.045
SERQ -> CU-INTN	0.099	-0.005	0.011	0.177
PCX -> CU-INTN	-0.234	0.002	-0.334	-0.146
TMS -> CU-INTN	0.196	-0.002	0.114	0.282
INFQ -> RA	0.600	0.001	0.498	0.681
INFQ -> PCX	-0.465	-0.002	-0.568	-0.338
SYQ -> RA	0.188	0.002	0.077	0.294
SYQ -> PCX	-0.282	-0.002	-0.388	-0.169
INFQ -> CU-INTN	0.207	-0.001	0.144	0.277
SYQ -> CU-INTN	0.097	0.000	0.059	0.146

Table A3: Common Method Bias test result using Harman's single factor test and FCVIF

Total	% of variance	Cumulative %
10.967	25.505	25.505
Exploratory Factor Analysis (EFA)		
Construct Relationships		VIF
CPT -> CUI-INTN		1.177
GO -> CUI-INTN		2.281
ITI -> CUI-INTN		2.053
LFG -> CUI-INTN		1.249
RA -> CUI-INTN		2.879
SC -> CUI-INTN		1.193
SERQ -> CUI-INTN		1.278
PCX -> CUI-INTN		1.927
TMS -> CUI-INTN		1.849
INFQ -> CU-INTN		2.167
SYQ -> CU-INTN		1.453

Source: Authors' Own Work

Table A4: Total and Specific Indirect and Direct effects regarding the mediation effects						
Effect Type	Construct Relationship	B-value	STDEV	T-values	P-values	Level of Support
Total Indirect Effects	INFQ -> CUI-INTN	0.207	0.034	6.077	0.000	Supported
	SYQ -> CUI-INTN	0.097	0.022	4.465	0.000	Supported
Specific Indirect Effects	SYQ -> RA -> CUI-INTN	0.031	0.013	2.299	0.022	Supported
	INFQ -> TPCX -> CUI-INTN	0.109	0.028	3.923	0.000	Supported
	INFQ -> RA -> CUI-INTN	0.098	0.032	3.043	0.002	Supported
	SYQ -> TPCX -> CUI-INTN	0.066	0.019	3.406	0.001	Supported

Notes: N:B:- Original Sample (O) (Path Coefficient) β-value; Standard deviation (STDEV) SD, T statistics (jO/STDEVj)

Source: Authors' own work

Appendix 2. Items and instruments

Table A5: Instrumentation and description of survey items Adapted

Used Theory	Constructs	Indicators	Survey Question	Sources
Information System Success Model	Continuance use intention (CU-INTN)	CU-INTN1	We intend to continue using the e-filing system rather than discontinue it.	(Bhattacherjee, 2001; Teo et al., 2008; Veeramootoo et al., 2018)
		CU-INTN2	We intend to continue using e-filing rather than using any alternative means	
		CU-INTN3	We intend to use the e-filing method for our income tax return next year.	
		CU-INTN4	E-filing method is our first choice to file our income tax return.	
	Service Quality (SERQ)	SERQ1	E-filing provides an improved quality of taxation services	(Ho & Lin, 2010; Li et al., 2002; Parasuraman et al., 2005; Veeramootoo et al., 2018)
		SERQ2	E-filing simplifies and standardizes the taxation process.	
		SERQ3	E-filing ensures the modernization of the taxation process.	
		SERQ4	E-filing ensures a reduction in the time for completion of tax filing.	
		SERQ5	The service provided by the e-filing system is reliable.	
	System Quality	SYQ1	E-filing provides helpful instructions for filing my return	(Veeramootoo et al., 2018; Wangpipatwong et al.,

	(SYQ)			2005)
		SYQ2	E-filing system is user-friendly.	
		SYQ3	The e-filing website provides fast information access.	
		SYQ4	We could use e-filing at any time within the tax collection deadline.	
		SYQ5	Steps to complete a task in the e-filing system follow a logical sequence.	
		SYQ6	The functioning of the e-filing system is reliable.	
	Information Quality (INFQ)	INFQ1	Information contained on the e-filing website is up-to-date.	(Veeramootoo et al., 2018; Wangpipatwong et al., 2005)
		INFQ2	Information contained on the e-filing system is in the appropriate format.	
		INFQ3	Information contained on the e-filing system is easy to read and understand	
		INFQ4	The e-filing system provides reliable information when we file our tax return.	
		INFQ5	Information is available in printable form.	
Technology Organizational Environment Framework	IT Infrastructure (ITI)	ITI1	Our company has good infrastructure support for e-tax filing systems.	(Chwelos et al., 2001; Shao et al., 2015)
		ITI2	Our company utilizes the internet in its daily operations.	
		ITI3	Our company has enough financial resources to adopt e-tax filing systems.	
	Top Management Support (TMS)	TMS1	Top management supports the investment in e-tax filing systems.	(Grover & Goslar, 1993; Kurnia & Johnston, 2000; Shao et al., 2015)
		TMS2	Top management considers E-filing adoption as important to the organization in its digital transformation.	
		TMS3	Top management is likely to invest funds in E-government-related technologies.	

	Government Oversight (GO)	GO1	Government oversight of e-tax filing is very important	(Shao et al., 2015)
		GO2	The government offered training programs that benefit firms' e-filing.	
		GO3	The government's recommendation of the e-tax filing system is effective.	
	Firm Size	LGF	Large firm	(Lertwongsatien & Wongpinunwatana, 2003; Tornatzky & Fleischer, 1990)
		MDF	Medium firm	
Diffusion of Innovation	Relative Advantage (RA)	RA1	E-filing system is better to use than the manual system of tax compliance	(Grover & Goslar, 1993; Moore & Benbasat, 1991; Premkumar & Ramamurthy, 1995)
		RA2	E-tax filing system can reduce costs.	
		RA3	E-tax filing system can improve efficiency.	
		RA4	The E-tax filing system can improve tax filing accuracy.	
	Compatibility (CPT)	CPT1	E-tax filing system is compatible with our business workflow.	(Moore & Benbasat, 1991; Rogers, 1983; Venkatesh et al., 2012)
		CPT2	Adopting E-filing is consistent with our business practices.	
		CPT3	It is easy to incorporate E-filing into our firm.	
	Perceived Complexity (PCX)	PCX1	We think the online tax filing system is easy to understand and operate.	(Liang & Lu, 2013; Rogers, 1983)
		PCX2	We think learning to use the online tax filing system is easy.	
		PCX3	We think tax filing processes can be easily completed by using the online tax filing system.	
Trust-based Theory	Security Concern (SC)	SC1	Use of e-filing may cause our business income tax information to be stolen.	(Carter et al., 2011; Schaupp & Carter, 2010; Veeramootoo et al., 2018)
		SC2	There is a possibility of the e-filing system malfunctioning.	

SC3	There is a risk of hacking of business details using the e-filing system.

Additional Questions

What is your position in the organization?	Please, specify_____		
Where does your business operate?	Addis Ababa	Debre Birhan	Both
How many people (in staff) do you employ currently in this organization?	Please, specify_____		
Do you use an electronic tax system currently?	Yes		No
Are you aware of the e-filing system provided by the tax authority?	Yes		No
What is the primary reason your business has not adopted an e-filing system?	Lack of awareness	Prefer the manual method	Technical barriers
How long has your business been in operation?	< 5 years	5- 10 Years	>10 years
What is the primary operation of your business?	Please, specify_____		
Have you filed taxes in the past 3 years?	Yes	No	
Do you think the government has made adequate arrangements while making up the interface to file a tax return?	Yes	No	I don't know