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What Determines Success of an E-Government Service?
Validation of an Integrative Model of E-Filing Continuance Usage

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Abstract

The purpose of this study is to validate an integrated model of e-filing continuance usage. The model has its theoretical basis in the expectancy confirmation theory and the DeLone and McLean's IS Success model. The model is extended to include two additional constructs relevant to e-filing continuance usage: perceived risks and habit. The model is tested using data collected from a sample of 645 e-filing users in Mauritius. Structural equation modelling was used to test the hypotheses. Findings suggest that citizens' continuance usage intention of e-filing is influenced by system quality, user satisfaction and habit. User satisfaction had the strongest impact on e-filing continuance usage intention. This study makes a valuable contribution to knowledge through the extension and validation of the ECT and IS Success model to explore salient factors affecting e-filing continuance usage intention. The practical implications of the findings for tax collection agencies are discussed.

Keywords: e-government; e-filing; continuance usage; IS success model; expectation confirmation theory

1. Introduction

Revolution in information and communication technologies has led to several changes in the daily lives of citizens as well as in the ways in which governments provide their services to the public (Dwivedi, Williams, and Venkatesh, 2008; Floropoulos, Spathis, Halvatzis, and Tsipouridos, 2010). As part of the modernization process of the public administration, governments worldwide are upgrading their services by providing them online – what is commonly referred to as e-government (Alcaide–Muñoz, Rodríguez–Bolívar, Cobo, and Herrera–Viedma, 2017; Rana, Dwivedi, Williams, and Weerakkody, 2014; Shareef, Kumar, Kumar, and Dwivedi, 2011; Shareef, Kumar, Kumar, and Dwivedi, 2009). E-government is gaining momentum in several countries because of its effectiveness and suitability across several public service contexts. It has enabled citizens to have greater access to information, promoted transparency, improved service delivery, and increased public participation in government affairs (Alcaide- Muñoz et al., 2017; Lindgren and Jansson, 2013; Zuiderwijk, Janssen, and Dwivedi, 2015). The proliferation of e-government across countries has led researchers to devote increasing academic attention to this area. In particular, researchers have examined citizens' adoption of e-government services and its antecedents across various contexts (e.g. Alzahrani, Al-Karaghouli, and Weerakkody, 2017; Carter, Weerakkody, Phillips, and Dwivedi, 2016; Gao, and Lee, 2017; Rana and Dwivedi, 2015; Santhanamery and Ramayah, 2018; Shareef et al., 2009).

Among the various online services provided by the government, e-filing is probably one of the most advanced and commonly used e-government platforms. E-filing generally improves the tax filing process while at the same time, reducing the costs to tax payers and the government (Schaupp and Carter, 2010). Despite the benefits and popularity of e-filing, some concerns have been expressed about its under-utilization (Schaupp and Carter, 2010).

The full benefits of e-filing cannot be achieved if it is not used continuously by users. As the number of number of people using e-filing rises, tax authorities need to devise measures to ensure that users continue using the system. Therefore, studies on the salient factors influencing continuous usage intention of e-filing is a laudable initiative and a vital component of a valuable research agenda. Results of such research can be used to increase continuous usage of e-filing to the benefits of tax papers as well as governments (Santhanamery and Ramayah, 2014).

Adoption and continuance behaviours are two theoretically distinct concepts and are affected by different sets of factors. Users behaviour with respect to an information system (IS) after initial adoption changes based on their experiences with the system, which may ultimately increase or decrease future usage (Santhanamery and Ramayah, 2018; Venkatesh, et al., 2011). However, the majority of studies have borrowed constructs from the adoption literature to study e-filing continuance usage intention (e.g. Ambali, 2009; Santhanamery and Ramayah 2018). To this end, various theories such as the technology acceptance model (TAM), the unified theory of acceptance, the use of technology (UTAUT), the IS success model, the theory of planned behaviour (TPB), and the social cognitive theory (SCT) have been used to study continuance intention behaviours (Nabavi et al., 2016). Researchers posit that many of these theories, although valuable to understand initial adoption of an IS, are not necessarily suitable to study continuance usage behaviours (Nabavi et al., 2016; Ortiz de Guinea and Markus 2009). Following an exhaustive review of the literature, Bhattacherjee and Barfar (2011) concluded that theories originally developed to explain consumer acceptance of an IS have been applied inappropriately to predict continuance usage behaviours. There is therefore a need for researchers to adopt more appropriate models and

constructs to understand continuance behaviours instead relying on traditional models (Nabavi et al., 2016).

In an attempt to bridge the research gaps identified above, this study validates an integrative model of continuance usage intention of e-filing. The model has as its theoretical basis the expectation-confirmation theory (ECT) and the IS success model. The ECT is a strong foundation that can guide studies on continuance intention behaviors of an IS (Bhattacherjee, 2001; Venkatesh et al., 2011). Central to the ECT is the notion that confirmation influences user satisfaction that in turn predicts continuance usage intention. The IS success model is another useful theoretical basis to study continuance usage of IS (Delone and Mclean, 2003). For example, Hsu et al. (2004) discussed the importance of the three quality constructs of the IS success model to understand continuous intention behavior of an IS: information quality; system quality; and service quality. These constructs enable an assessment of the quality of an e-government service.

For these reasons, we build our structural model based on the postulates of both the ECT and the IS Success model. We also extend the model by including perceived risks (Fu, Farn and Chao, 2006) and habit (Venkatesh et al., 2012) given their importance in influencing continuance usage behaviors of IS. The fourteen hypotheses that emanate from the model are tested using data collected from 645 e-fling users in Mauritius. To-date, there are very limited research on e-filing continuance usage intention that have developed and tested such an integrative structural model. The study responds to the increasing calls of researchers to incorporate such variables as satisfaction, confirmation, risks, habits, information quality, system quality, and service quality in research on continuance usage of IS (Bhattacherjee, 2001; Hsu et al., 2004; Thong, Hong, and Tam, 2006; Xu, Benbasat, and Cenfetelli, 2013). Researchers have also been advocating for more studies that examine the theoretical

relationships among these three quality constructs of the IS success model (Gorla, Somers, and Wong, 2010; Xu et al., 2013). The study therefore makes an important theoretical contribution to the body on knowledge on e-filing continuance usage intention.

The study also makes a contextual contribution to the literature. Following a systematic review of existing research on continuance usage intention of various IS, Nabavi et al. (2016) concluded that there is a paucity of studies on this topic in the African regions. In the specific context of Mauritius, Mahadeo (2009) predicted taxpayers' intention to adopt electronic tax filing and payment using the TAM and the diffusion of innovation model (DOI). However, corroborating the conclusion of Nabavi et al. (2016), Mahadeo did not investigate continuous usage intention of the e-filing service. Ramessur's (2009) study also sheds some lights on the readiness of Mauritians for e-government service. The study concluded at that time that while Mauritius had the necessary infrastructure and political commitment to implement e-government, its citizens were not fully ready to accept e-government services. Resistance to change, low trust, and a lack of awareness were found to hinder adoption of e-government services.

Considerable progress has been made since then. The United Nations e-Government Survey 2016 now ranks Mauritius 50th in the list of the top performing countries in e-participation category world-wide and first among the top five nations for e-government in Africa. The survey positions the country as one that has a high E-Government Development Index (EGDI). The success of the e-filing system of the Mauritius Revenue Authority (MRA), the tax collection agency of the country, has no doubt contributed to the good performance of Mauritius in the field of e-government. However, since e-filing usage behaviors change in the post-adoption stage (Santhanamery and Ramayah, 2018), it is important that research is carried out to understand continuance usage behavior of the e-filing

service of the MRA. Results can be used to improve further the EDGI of the country and maintain its leading position in the African region. Findings can also provide useful policy lessons for the implementation of e-filing services in other countries in the Africa region.

2. Literature Review

E-filing is a vital online platform that enables citizens to file their income tax returns in a convenient and efficient manner (Fu et al., 2006). The main advantage of e-filing is that it combines tax preparation, submission of online tax return, and online tax payment facilities under a single platform (Ambali, 2009). The government is one of the most important beneficiaries of e-filing. E-filing helps revenue collection agencies to examine tax returns more efficiently and cost-effectively than manual procedures (Santhanamery and Ramayah, 2018). In view of its benefits, it is important to understand citizens' acceptance or rejection of the e-filing service. It is not surprising therefore that research in this area has been common in the literature (e.g. Fu et al., 2006; Santhanamery and Ramayah, 2018). Various theories such as the ECT, the DIO, the TAM, the TPB, the theory of reasoned action (TRA), the IS success model, the UTAUT, and the SCT have been utilized, sometimes in combinations with one another, to study e-filing usage behaviours (Carter, Schaupp, and Evans, 2008, Carter, Schaupp, Hobbs, and Campbell, 2011; Chen, 2010; Fu et al., 2006; Hamfri and Marcellian, 2017; Santhanamery and Ramayah, 2018; Wang, 2002). This study uses the ECT and the IS success model as the theoretical foundations to investigate e-filing continuance usage intention.

2.1 Theoretical Foundation

The ECT has its roots in marketing and is commonly utilized to study consumer satisfaction and post-purchase behaviour (Houston, Grandey and Sawyer, 2018). The ECT posits that consumers form an initial expectation about a product or service prior to usage.

Following the first use, they form an expectation about its performance which they compare with their initial expectations, conceptually referred to as confirmation. Consumers then determine their level of satisfaction based on their confirmation level and expectation on which that confirmation was derived. Finally, satisfied consumers engage in re-purchases while dissatisfied ones cease to use the product or service (Bhattacherjee, 2001). With some minor modifications, the ECT has been widely applied to study usage of IS (e.g. Bae, 2018; Hsu and Lin, 2015; Jia, Guo, and Barns, 2017; Joo, Park, and Shin, 2017; Santhanamery and Ramayah, 2014, 2018).

The ECT is also probably the most commonly used model to study continuance usage intention of IS. The theory suggests that perceived usefulness and confirmation predict satisfaction that in turn determine an individual's intention to continue using the system. The ECT is considered to be superior to existing theoretical frameworks such as TAM, TPB, and TRA since it includes such variables as satisfaction and confirmation that are more relevant to post-acceptance reactions (Bhattacherjee, 2001). Furthermore, the influence of any pre-adoption variables such as perceived ease of use and perceived usefulness is captured by the confirmation and satisfaction constructs (Oghuma, Libaque-Saenz, Wong, and Chang, 2016). The ECT is therefore a promising theoretical framework to study IS continuance behaviour since it provides an accurate description of the process leading to post-adoption behaviour of an IS (Limayem, Hirt, and Cheung, 2007). Studies that have tested the ECT empirically in the context of IS continuance usage intention have been able to explain a high level of variance in the latter construct (e.g. Bhattacherjee, 2001; Hsu et al., 2004; Limayem et al., 2007; Oghuma et al., 2016; Santhanamery and Ramayah, 2014; Thong et al., 2006).

Another theory useful in explaining usage behaviour in the post-adoption stage is the DeLone and McLean's (1992) IS success model (Tam and Oliveira, 2017; Wei, Tang, Kao, and Wu, 2017). Originally introduced by DeLone and McLean in 1992, the IS success model posits interrelationships between six IS success constructs: system quality; information quality; IS use; user satisfaction; individual impact; and organization impact. The model makes two important contributions to our understanding of IS success. First, it summarizes the various IS success factors in a single theoretical framework. Second, the model proposes temporal and causal interdependencies between the categories (Wang and Liao, 2008). A decade later, in response to contemporary changes in the IS environment, DeLone and McLean (2003) updated the IS success model by adding a new construct of service quality. This variable captures the quality of the service provided by the IS department as opposed to system quality and information quality that measure the success of the IS platform (Tam and Oliveira, 2017).

DeLone and McLean's (1992) IS success model has been successfully applied to study usage of information in various contexts (e.g. Alzahrani, Mahmud, Ramayah, Alfarraj, and Alalwan, 2017; Tam and Oliveira, 2017; Wang and Liao, 2008; Wei et al., 2017). In a meta-analytic assessment of the DeLone and McLean IS success model, Petter and Mclean (2009) concluded that:

> "...the majority of the relationships posited in the updated D&M IS success model were supported. As businesses have become more reliant on IT in achieving success within their organizations, IS have become essential. A better understanding of what constitutes an effective IS is necessary. The D&M IS success model provides a framework that can assist in understanding this" (p. 165).

While both the IS success model and the ECT have received much support, there have been calls from researchers to extend these theories to assess the success of e-government systems (Wang and Lioa, 2008). Petter and Mclean (2009) and DeLone and McLean (2003)

in their assessments of the IS success model advocate the importance of extending the model by adding other constructs relevant to specific IS contexts. In the present study, we incorporate in our theoretical model the constructs of perceived risks and habit given their prominence in determining continuance usage intention of e-government systems such as e-filing (Bhattacherjee, 2001; Fu et al., 2006; Santhanamery and Ramayah, 2016). Integrating the various constructs together, the conceptual model of the study is presented in Figure 1. It has its theoretical foundation in the IS success model and the ECT. The fifteen hypotheses that emanate from the model are explained in the following sections.

INSERT FIGURE 1 ABOUT HERE

2.2 Hypotheses Development

2.2.1 Information Quality

Information quality refers to a user's evaluation of the performance of an IS in providing information based on his experience of using the system (McKinney, Yooh, and Zahedi, 2002). Such an evaluation is based on the content of an IS website which are required to be personalized, complete, relevant and easy-to-use, and provide for security aspects to encourage online transactions (Delone and McLean 2003). Information quality therefore embodies the objective and subjective perspective of consumed information. Low quality information distracts users and leads to higher information-processing costs (Zheng, Zhao, and Stylianou, 2013). It is therefore important to have an easy-to-use website for the purpose of looking for information. The relationship between information quality and continuance usage has been validated in a number of studies (e.g. Chiu, Chiu, and Chang, 2012; DeLone and McLean, 2003; Yang, Shao, Liu, and Liu, 2017; Zheng et al., 2013). Based on the preceding theoretical and empirical discussion, the following hypothesis is proposed:

H1: Information quality positively influences intention to continue using e-filing system.

Studies also suggest information quality influences service quality. The latter is a global judgment or attitude relating to the superiority of a service' (Parasuraman, Zeithaml, and Berry, 1985). It is the general support provided to users of an IS by the service provider (DeLone and McLean, 2003). Good information makes a positive contribution towards service quality (Bharati and Berg, 2003; Cenfetelli, Banbasat, and Al-Natour, 2008). Xu et al. (2013) hypothesized that information quality impacts directly on service quality. The researchers noted that it would be difficult or nearly impossible to achieve an increased level of online service quality without having a high level of information quality.

H2: Information quality positively influences service quality.

DeLone and McLean's (1992) IS success model posits that user satisfaction is determined by information quality. User Satisfaction refers to the subjective assessment of the multiple experiences encountered by an IS user (Seddon, 1997). Tax payers spend considerable time and effort with the e-filing system to file their income tax returns. According to Floropoulos et al. (2010), citizens must ensure that all calculations on the e-filing system are correct as they must pay the correct amount for their taxes. Since taxpayers want to ensure that no deductible expenses are omitted, information completeness becomes important to them (Chen, 2010). Therefore, high quality information is critical to their satisfaction. The relationship between information quality and user satisfaction with an IS has been validated in a number of studies. For example, in their study on continuance usage intention of social network service, Lee and Kim (2017) reported that quality of information was positively related to satisfaction. Zheng et al. (2013) also found a positive relationship between the two constructs in their study on virtual communities. A number of other studies reveal similar findings (e.g. Apostolou, Bélanger, and Schaupp, 2017; Chiu, Chiu, and Chang, 2007;

Laumer, Maier, and Weitzel, 2017; Xu et al., 2013). Accordingly, the following hypothesis is developed:

H3: Information quality positively influences user satisfaction

Researchers have also established a link between information quality and confirmation. Derived from the ECT, the confirmation construct lays emphasis on a user's psychological motivations arising after initial adoption (Limayem et al., 2007). In their study on e-learning continuance intention, Roca, Chiu, and Martinez (2006) extended the ECT by proposing that information quality positive influences confirmation. The researchers empirically validated this relationship. Likewise, in a study of online group-buying in the e-commerce domain, Li and Shi (2012) postulated that information pertaining to the product in terms of the description and pictures of the products has a direct influence on consumer's expectation. Based on the preceding discussion, the following hypothesis is proposed:

H4: Information quality positively influences confirmation.

2.2.2 System Quality

System quality represents the features of an online system that is preferred in terms of usability, availability, reliability, adaptability, and response time (Delone and McLean, 2003). It represents the technical capability of the website in providing simple and speedy access to information to the user while ensuring reliability and security (Teo et al., 2008). A number of studies suggests that system quality influence usage intention. For example, in their study on continuance intention of students toward participation in open line course, Yang et al. (2017) empirically demonstrated a positive relationship between the two constructs. Lin and Lu (2000) used the Internet as an example to confirm the positive effect of system quality on learners' using intention. Some other studies have also validated such a relationship in an e-

government context (e.g. Teo et al. 2008; Wangpipatwong, Chutimaskul, and Papasratorn 2009; Zhou, 2013). Based on the prior discussion, the following hypothesis is developed:

H5: System quality positively influences intention to continue using e-filing.

The relationship system quality and information quality has also been the subject of some research. Drawing from the communication theory, Mason (1978) argued that information is the output of several systems such as data processing, accounting, data analysis, and communication. Information is produced by a system (DeLone and McLean 2003; Mason 1978) and therefore any problems users encounter with the system are likely to have an adverse effect on the quality of information. On the other hand, a highly flexible system in terms of maintainability and useful features leads to relevant and up-to-date information while efficiently meeting the information needs of users (Gorla et al., 2010). Xu et al. (2013) found support for a positive relationship between system quality and information quality. Accordingly, we propose the following hypothesis:

H6: System quality positively influences information quality.

The four aspects of system quality - accessibility, usability, navigation and interactivity (McKinney, Yoon, and Zahedi, 2002) have also been found to influence service quality (Chang, Chen, and Lan 2012). The study of Bharati and Berg (2003) has also provided support for the influence of system quality on service quality. Furthermore, the study of Tan, Benbasat, and Cenfetelli (2013) has also empirically confirmed that perceived service content and perceived service delivery significantly influence users' perception of service quality. The study by Xu et al. (2013) also produced similar findings. Based on the preceding discussion, the following hypotheses are proposed:

H7: System quality positively influences service quality.

The IS success model suggests that system quality influences user satisfaction. The perception of system quality is formed when users interact with the online system, more specifically after the users complete a certain task. The aspects of system quality such as accessibility, interactivity, and ease of use determine user satisfaction (Chen, 2010). When users face problems while navigating through the website or have waited too long to access the webpage, they feel dissatisfied (Teo et al., 2008). Various studies in the IS literature have validated a positive relationship between system quality and user satisfaction (e.g. Chiu et al., 2007; DeLone and McLean, 2003; Laumer et al., 2017; Lee and Kim, 2017; McKnight, Choudhury, Kacmar, 2002; Wang and Liao, 2008; Xu et al., 2013; Zheng et al., 2013). Accordingly, we propose the following hypothesis:

H8: System quality positively influences user satisfaction

2.2.3 Service Quality

In a marketing context, research carried out across various contexts suggest that better service quality leads to loyalty toward the service provider (Nunkoo, Teeroovengadum, Thomas, and Leonard, 2017). In an e-context, a number of studies found that e-service quality is positively related to e-loyalty (Abou-Shouk and Khalifa, 2017; Ahmad, Rahman, and Khan, 2017; Toufaily and Pons, 2017; Pee, Jiang, and Klein, 2018). In an IS context, an individual's intention to continue using the system represents his loyalty toward the system. In this context, Kim, Hong, Min, and Lee (2011) continuance intention as a proxy for loyalty in their study on application service providers and found a significant direct effect of service quality on continuance intention. More recently, Yang et al. (2017) confirmed a positive relationship between students' perceived service quality and their intention to continue using open online course. Accordingly, the following hypothesis is developed:

H9: Service quality positively influences intention to continue using e-filing system.

Service quality remains one of the traditional determinants of satisfaction. The relationship between the two constructs can be traced back to the literature on marketing and consumer behaviour (e.g. Kasiri, Cheng, Sambasivan, and Sidin, 2017; Khoo, Ha, and McGregor, 2017; Nunkoo et al., 2017). The IS success model draws on existing evidences to postulate that service quality influences user satisfaction with an IS (DeLone and McLean, 2003). When the perceived service quality of an IS is high, satisfaction also increases, discouraging users from switching to other alternatives. A number of studies validate the relationship with service quality and user satisfaction with an IS (e.g. Chiu et al., 2007; DeLone and McLean, 2003; Lee and Kim, 2017; Lien, Cao, and Zhou, 2017; Zheng et al., 2013). Based on the preceding discussion, we propose the following hypothesis:

H10: Service quality positively influences user satisfaction.

2.2.4 User Satisfaction

According to the ECT, intention to continue using an IS is mainly based on satisfaction with prior IS usage (Bhattacherjee, 2001). The IS literature evidences a close relationship between satisfaction and continuance intention. For example, in their study on web-based learning continuance intention, Chiu et al. (2007) showed that satisfaction was the strongest determinant of continuance usage. Zhen, Zao, and Stylianou (2013) demonstrated a significant relationship between user satisfaction and continuance usage intention in information-exchange virtual communities. Such a relationship has been validated in several other recent studies (e.g. Al-Samarraiea et al., 2017; Joo, Soo, and Kim, 2018; Lee and Kim, 2017; Weng, Zailani, Iranmanesh and Hyun, 2017). Following a review on the effectiveness of IS, Chen (2010) argued that measures of satisfaction are specifically essential in the

context of e-filing. Based on the preceding arguments, the following hypothesis is developed:

H11: User satisfaction positively influences intention to continue using e-filing system

Habit is a construct that is gaining popularity in the study of continuance usage intention. In the context of IS usage, habit refers to the extent to which users automatically make use of an IS system in response to specific situations (Limayem, Cheung, and Chan 2003). Aarts, Paulussen, and Schaalma (1997) stated that a satisfactory experience with a certain behaviour leads to the development of habit which in turn, determines a person's likelihood of repeating the same behaviour when presented with similar circumstances in the future. Limayem et al. (2007) and Thorngate (1976) found satisfaction to be positively related to habit. Based on the preceding theoretical and empirical discussion, the following hypothesis is developed:

H12: User satisfaction positively influences habit.

2.2.5 Confirmation

Bhattacherjee (2001) and Thong et al. (2006) posited that confirmation is positively associated with satisfaction with IS usage because it involves materialization of the expected benefits of using an IS. The relationship between confirmation and satisfaction has been validated in a number of studies (e.g. Ayanso, Herath, and O'Brian, 2015; Bae, 2018; Bhattacherjee 2001; Chen, 2014; Chen, Huang, Hsu, Tseng, and Lee, 2010; Hsu and Lin, 2015). Thus, we propose the following hypothesis:

H13: Confirmation positively influences user satisfaction

2.2.6 Habit

Continuance usage behaviour is likely to take on a highly habitualized nature when the same decision is continuously made as a result of the same repetitive circumstance because of learning (Limayem et al., 2007). Examples of previous studies examining the role of habit in an IS context include those of Chiu, Hsu, Lai, and Chang (2010), Limayem et al. (2007), and Venkatesh et al. (2012). Ortiz de Guinea and Markus (2009) argued that IS continuance usage is much less intentional and much more automatic as compared to what has been identified in the literature. Based on the preceding discussion, the following hypothesis is proposed:

H14: Habit positively influences intention to continue using e-filing system.

2.2.7 Perceived Risk

In e-filing research, perceived risks is one of such variables that hold much prominence (Fu et al., 2006; Santhanamery and Ramayah, 2016). Perceived risks is the risks associated with the exposure and loss of personal information when conducting online transactions. In the context of e-filing, perceived risks is the amount of uncertainty or anxiety that a user experiences when using the e-filing system (Azmi and Kamarulzaman, 2010). Due to the importance of exchanging personal information of highly confidential nature during the process of filing online returns, the e-filing system benefits from an increased level of trust between the taxpayers and the tax agencies. Even though perceived risks is not derived from a core adoption model, this construct has been found to influence usage behavior of e-filing. Carter et al. (2008) argued that perceived risks considerably influences an individual's intention to use e-filing because of the various uncertainties associated with the internet. The study of Ambali (2009) explored the impact of perceived risk/security on usage of e-filing and found an inverse relationship between the two constructs. We therefore propose the following hypotheses:

H15: Perceived risk negatively influences intention to continue using e-filing.

3. Research Methodology

3.1. Sample Selection and Survey Method

Given that this research aims to understand the factors influencing continuance usage intention of the e-filing system of the MRA, the target population comprised of only those Mauritian individuals who had experience in using e-fling. In the absence of a sampling frame, a convenience sampling method which is a non-probability sampling strategy was employed to select the sample. Convenience sampling is common in studies assessing continuance usage of e-government (e.g. Lim, Tan, Cyr, Pan, and Xiao, 2012; Wang and Liao, 2008). Surveys were conducted at strategic locations such as supermarkets and shopping centres situated in different parts of Mauritius. Respondents were approached at these locations and the purpose of the study were explained to those who agreed to take part in the survey. They were reassured that all information provided would be treated with full confidentiality.

The questionnaire included a filter question that asked the respondents whether they had previously used the e-filing system of the MRA. Only those who had used the system at least once were asked to complete the survey. While the majority of the respondents completed the questionnaire on the spot, others requested that the survey instrument be sent to them via email. In such cases, the researchers took note of the email addresses and the questionnaire were sent to them on the same day. Eight hundred hard copies and 109 e-copies were distributed to respondents. In total, 660 respondents completed the survey, resulting in a

response rate of 72%. In order to avoid statistical biases due to missing data, following Hair, Black, Babin, and Anderson (2010), we eliminated 15 questionnaires that contained more than 10% missing responses across any of the scale items, resulting in a final usable sample of 645.

3.2. Measurement of Constructs

Items used to measure the various constructs were carefully selected from the existing literature. All items were measured on a 7-point Likert scale to provide respondents with more choices, and thus preventing them from giving biased answers by choosing neutral values (Dwivedi, Papazafeiropoulou, Brinkman, and Lal, 2010; Dwivedi, Choudrie, and Brinkman, 2006). Information quality (8 items: IQ1 – IQ8), system quality (8 items: SYQ1-SYQ8), service quality (SERVQ1-SERVQ8), and user satisfaction (5 items: US1-US5) were measured using scales borrowed from Chen (2010), Floropoulos et al. (2010), Teo et al. (2008), Wang and Liao (2008), Zhou (2013), Roca et al. (2006), and Floropoulos et al. (2010). Confirmation was measured using four items (C1-C4) adopted from Bhattacherjee (2001), Limayem et al. (2007), and Roca et al. (2006). Habit was measured with another five items (H1-H5) borrowed from Venkatesh et al. (2012). Five items (R1-R5) adapted from Carter et al. (2008) and Hsu and Chiu (2004) were used to measure perceived risks. Finally, continuance intention was measured using the five items (CI1-CI5) items adapted from Teo et al. (2008), Bhattacherjee (2001), and Sun (2014). The various items are presented in Table 2.

3.3. Preliminary Statistical Tests

We utilized structural equation modeling (SEM) using the AMOS software (Version 21) to test the model. Before the modeling process, a number of preliminary statistical tests

were carried out to ensure that the data were suitable for a SEM analysis. First, we tested the normality of the dataset which is a basic assumption underlying the maximum likelihood estimate of SEM (Nunkoo, Ramkissoon, and Gursoy, 2013). We analysed the kurtosis values which influence the analysis of variances and covariances underlying SEM. According to West, Finch, and Curran (1995), a rescaled value of greater than 7 indicates significant departure from normality. The results generated by the AMOS software indicated that no scale item had a kurtosis value greater than 7, satisfying the normality condition underlying the maximum likelihood estimation of SEM.

Second, we tested for common method variance which is the variance that is attributable to the measurement method rather than to the constructs the measures represent (Podsakoff, MacKenzie, Lee, and Podsakoff, 2003). Common method variance is inherent to behavioural research that uses cross-sectional data and presents a direct threat to the results (Podsakoff et al., 2003). We carried a confirmatory factor analysis (CFA) to examine whether a single factor can account for all of the variance in the data. A CFA with all 47 indicators of the different constructs loading onto a single common factor was estimated. We then carried out a chi-square difference tests to compare the results of the common factor model with the CFA results of the proposed measurement model that comprised of eight latent variables. Findings indicated that the proposed measurement model was a better fit to the data than the common factor model. These results indicated that there common method variance was not a problem in our study.

4. Results

4.1 Sample Profile

The profile of the respondent is presented in Table 1. The sample was dominated by male respondents (n = 359; 55.7%). With regards to the age distribution of the respondents, the majority of them was rather young (20.3% and 36.6% were between 18-29 years and 30-39 years respectively), compared to only 3.6% who were above 60 years of age. The sample comprised of a higher percentage of respondents who completed post-secondary education. Thirty-three percent (n = 215) and 26.5% (n = 171) of the sample had completed undergraduate and postgraduate education respectively. Only 1.4% (n = 9) of the sample studied up to the primary level. A high proportion of the respondents (41%; n = 262) were employed in public sector organizations, 36% (n = 232) were employed in the private sector, while the remaining (n = 151; 23.4%) were employed in semi-governmental organizations. An analysis by occupation group revealed that the majority of the sample (53%) were among that occupational group comprising of legislators, senior officials, managers, and other professionals.

INSERT TABLE 1 ABOUT HERE

4.2. Structural Equation Modeling

We followed the two-step approach to the SEM process recommended by Anderson and Gerbing (1988). First, we tested the measurement model, also known as the confirmatory factor model. The measurement model was tested using CFA (Anderson and Gerbing, 1988). Figure 1 presents the measurement model of the study. The model resulted in a significant chi-square value of 3062.37 (df = 1025, p < .0001), which is known to be highly sensitive to sample size. However, the ratio of the chi-square to degrees of freedom (χ^2/df = 2.83) was below the recommended cutoff point of 3 (Bagozzi and Yi 1988). The other fit indices of the model were within acceptable range with comparative fit index (CFI) = .935, Tucker–Lewis index (TLI) = .955, standardized root mean square residual (SRMR) = .051,

and root mean square error of approximation (RMSEA) = .055. The parsimonious normed fit index (PNFI = .823) and the root mean square error of approximation (RMSEA = .056) were within the threshold of >.50 and <.07 respectively (Hair et al., 2010).

The measurement model was further tested for its reliability and validity. Reliability was assessed using the criteria established by Hair et al. (2010). Results are presented in Table 2. We assessed the standardized loading values of the items which should .70 or above (Hair et al., 2010). The composite reliability and the average variance extracted (AVE) values for all the construct should be above .70 and .50 respectively. As noted from Table 2, these criteria were met, evidencing reliability of the measurement mode. Validity was assessed using convergent validity and discriminant validity. Convergent validity was met with statistically significant factor loadings as presented in Table 2 (Anderson and Gerbing, 1988). AVE scores above .50 also evidences convergent validity (Fornell and Larcker, 1981). Discriminant validity was tested by comparing all pairs of constructs in two-factor CFA models, where each model was estimated twice, with one constraining the correlation between the constructs to be one and the other allowing free estimation of the parameter. Discriminant validity is achieved if a significantly lower chi-square value is obtained for the unconstrained model (Bagozzi and Phillips, 1982). As shown in Table 3, this requirement was met, evidencing discriminant validity.

INSERT TABLE 2 ABOUT HERE

INSERT TABLE 3 ABOUT HERE

After ensuring that the measurement model had acceptable fit indices and was both reliable and valid, the structural model was tested. The fit indices of the structural model were within acceptable range with comparative fit index (CFI) = .929, Tucker–Lewis index (TLI) = .955, standardized root mean square residual (SRMR) = .052, and root mean square

error of approximation (RMSEA) = .053. The parsimonious normed fit index (PNFI = .828) and the root mean square error of approximation (RMSEA = .058) were within the threshold of >.50 and <.07 respectively (Hair et al., 2010). Figure 2 shows the tested structural model with the hypothesized path relationships and explained variance. The hypotheses results are presented in Table 4. Of the 15 hypotheses proposed, 11 were supported while 4 were rejected.

INSERT FIGURE 2 ABOUT HERE

INSERT TABLE 4 ABOUT HERE

5 Discussions and Implications for Theory and Practice

Hypothesis 1, proposing a relationship between information quality and continuance usage intention was rejected (β = .01, p > 0.05). This finding is in contradiction with previous studies (Teo et al., 2008; Wang and Liao, 2008) that revealed a significant positive relationship between the two constructs. In contexts where searching for information is the main motive for using an IS, information quality matters for continuance usage as revealed by the studies of Zheng et al.'s (2013) on information-exchange virtual communities and that of Teo et al.'s (2008) on the general usage of e-government services. However, in the case of e-filing, the e-government platform provides all the necessary information needed by users to file their income tax returns. Furthermore, since the nature of citizens' interaction with the e-filing platform is mainly for transaction needs and not for information needs, information quality matters less, explaining its insignificant relationship with continuance usage. Information quality was also found to influence service quality (β = .25, p < 0.001), providing support for Hypothesis 2. This result corroborates with existing literature (e.g. Xu et al., 2013). The service quality of a website is the users' general appraisal and judgments concerning the superiority of the service provided through the website (Xu et al., 2013). In the context of e-filing, users' positive experience with regards

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to information on the e-filing system leads to an improved perception of the level of service quality provided by the online system. For instance, the availability of automatically pre-filled forms helps to file one's tax return in a simple and rapid manner. Hence, quality of information directly influences the quality of service (Xu et al., 2013).

The relationship between information quality and user satisfaction was tested in Hypothesis 3. Result did not support this relationship (β = .01, p > 0.05) and is consistent with previous research (e.g. Teo et al., 2008; Zhou 2013). Information quality is mainly concerned with the usual requirements of the citizens and is therefore not significantly related to user satisfaction as compared to constructs such as system quality and service quality of websites that are directly related to use of an IS platform(Teo et al., 2008). Furthermore, Teo et al. (2008) noted that citizens who can perform online transactions with the e-government websites may be very knowledgeable about using an IS and as a result, information quality becomes less important to them as compared to system quality and service quality. Result also suggested that information quality was a significant determinant of confirmation, providing support for Hypothesis 4 (β = .62, p < 0.001). This means that prior usage experience of the e-filing system has confirmed users' expectations about the online system. Sufficient amount of information related to the products or services give rises to adequate expectation and increases confirmation level (Li and Shi 2012). In the case of e-filing, information quality relates to the quality documentation of prior transactions. Roca et al. (2006) and Li and Shi (2012) also found support for a positive relationship between information quality and confirmation.

Findings provided support for Hypothesis 5, suggesting that system quality positively influences intention to continue using e-filing (β = .17, p < 0.05). The results corroborate that of Ramayah, Ahmad, and Hong (2012) who demonstrated empirically that better

system quality leads to higher usage continuance intention of online technologies. In their meta-analysis of the DeLone and McLean IS success model, Petter and Mclean (2009) classified the relationship between system quality and continuance usage as "strong" (p. 164). In the case of e-filing, taxpayers rely on the technical capabilities and ease of use of the system because their primary motivation is to fulfil their tax obligations successfully. This is why previous studies on usage of e-filing also support a positive relationship between the two constructs. The study found support for Hypothesis 6 proposing that system quality positively influences information quality ($\beta = .91, p > 0.001$). This finding is in line with those of Gorla et al. (2010) and Xu et al. (2013). Enhanced system quality leads to easy-to-understand information outputs and just-in-time reports while meeting users' information needs (Gorla et al., 2010). In the context of e-filing system of tax collection agencies, system quality is manifested in the form of a user-friendly platform that provides helpful instructions for filing returns, is easy to navigate, and contains fast information access on a 24-hour basis in a logical sequence to enable users to complete the filing of their tax returns, thus leading to predicted results in a reliable manner. Therefore, having an efficient and effective system in place undoubtedly leads to better information quality.

The relationship between system quality and service quality was tested by Hypothesis 7 and was found to be statistically significant ($\beta = .62, p < 0.001$). The strong influence of system quality on service quality is due to the fact that the e-filing system actually provides for flexibility, conciseness, ease of use, and quick response time and is user-friendly. Researchers argue that the e-service quality of an organization can be enhanced by improving information quality and service quality. This is why some studies confirmed a positive relationship between system quality and service quality (Bharati and Berg 2003; Xu et al., 2013). Hypothesis 8 postulating that system quality would positively affect user

satisfaction was supported by the results (β = .26, p < 0.01). This finding is coherent with those of Teo et al. (2008), Wei et al. (2017), Wang and Liao (2008), Chiu et al. (2007), and Zheng et al. (2013). Our result is also in line with the finding of the meta-analytic study of Petter and Mclean (2009) who found a strong relationship between the two constructs.

Hypothesis 9 that proposed a positive relationship between service quality and intention to continue using e-filing system was rejected by the study findings (β = .01, p > 0.05). This finding confirm previous studies (e.g. Wei et al., 2017) and is also in line with the meta-analytic exercise by Petter and Mclean (2009) who found that the relationship between service quality and use was insignificant. The result however, goes against DeLone and McLean IS success model and some empirical studies in this area (e.g. Wang & Lioa, 2008; Yang et al., 2017). Our insignificant finding can be attributed to the fact that when it comes to e-filing, system quality holds more prominence than service quality as taxpayers are mainly interested in submitting their tax returns efficiently and quickly which depends on the quality of the system than any other attributes like service quality. Thus, service quality loses its prominence, while constructs like system quality become far more important in determining continuance usage. The result also provided support for Hypothesis 10 that proposed a positive relationship between service quality and user satisfaction (β = .46, p < 0.001). The finding validates the long-established argument in the marketing literature that service quality remains the one of most important determinants of satisfaction (Rust and Oliver, 1994). The IS literature also reveals similar findings (e.g. Wang and Lioa, 2008; Zheng et al., 2013). Petter and Mclean (1999) meta-analysis study also classified the relationship between service quality and user satisfaction with an IS as strong.

Result provided support for Hypothesis 11 that postulated a positive relationship between user satisfaction and continuance intention (β = .57, p > 0.001). Studies carried out across various contexts corroborate this finding. Among the different constructs of the ECT, the relationship between satisfaction and continuance usage intention has been the most validated one by previous studies (e.g. Bhattacherjee, 2001; Oghuma et al., 2016; Teo et al., 2008; Thong et al., 2006; Venkatesh et al., 2011; Wei et al., 2017; Zhou, 2013). The revalidation of the satisfaction and continuance usage intention in the context of e-filing in the present study further confirms the robust association between these two constructs. Hypothesis 12 that predicted a positive relationship between user satisfaction and habit was supported by the study findings (β = .69, p < 0.001). In general, satisfactory experiences upon completion of an intended objective as part of a particular behavior leads to the repetition of the behavior under the same circumstances (Limayem et al., 2007). The study of Aarts et al. (1997) found that user satisfaction with a specific behavior becomes vital in establishing habit. While performing the behavior on a continuous basis, the level of satisfaction is intensified by related feelings, increasing capability and ease of use (Limayem 2007). In the case of e-filing, if taxpayers are satisfied with system and have been able to submit their tax returns successfully, they are likely to get into the habit of re-using the system as and when required.

The relationship between confirmation and user satisfaction was investigated by Hypothesis 13 and was found to be statistically significant (β = .24, p < 0.001). This finding is in line with the postulate of the ECT and several empirical studies. For example, Bhattacherjee, Perlos, and Sanford (2008) found confirmation to be a key determinant of user satisfaction. Thong et al. (2006) also noted that user satisfaction was dependent on the extent to which their initial expectations were confirmed when using the IS. Hypothesis 13, proposing a relationship between habit and continuance intention was supported by the

results (β = .20, p < 0.001). Venkatesh et al.'s (2012) research has shown that when predicting continuance usage of IT, habit is one of the constructs that play a pertinent role. This relationship has also been supported by the study of Orbell, Blair, Sherlock, and Conner (2010). Ortiz de Guinea and Markus (2009) argue that IS usage continuance is automatic rather than intention and as such, habit plays an important role in informing usage behavior.

Findings suggested that perceived risk did not influence continuance usage intention. Therefore, Hypothesis 15 was rejected (β = -.04, p > 0.05), confirming the results of earlier studies (Fu et al., 2006; Bhuasiri, Zob, Leec, and Ciganek 2016; Munoz-Leiva, Climent-Climent, and Liebana-Cabanillas, 2017). In their examination of the e-filing system in Thailand, Bhuasiri et al. (2016) argue that perceived risks loses its importance when citizens display positive attitudes and trust toward an e-government system. In the context of the study, the MRA is considered to be a credible and trustworthy organization by the Mauritian citizens and such, it is not surprising that perceived risks has been found to be insignificantly related to continuance usage intention. Another plausible explanation is that with the increase in the use of smartphones and the internet, the Mauritian citizens are becoming more knowledgeable about information technology and IS. Consequently, they may be less bothered about potential risks inherent to online systems such as e-filing.

5.1 Theoretical Implications

The study makes some important theoretical contributions to the literature on IS continuance usage. Researchers have been advocating for the use of more relevant theories to study continuance usage intention instead of relying on traditional models such as TAM, TPB, UTAUT, and TPB that are more applicable to study initial adoption than re-use of an IS (Bhattacherjee and Barfar, 2011; Nabavi et al., 2016; Ortiz de Guinea and Markus 2009). However, a review of existing literature on e-filing continuance usage indicates that studies

have yet to derive the full benefits offered by the ECT and IS Success model. There is a paucity of research on e-filing that combines constructs from both models to predict e-filing continuance usage. By developing a model that incorporates variables from the ECT and IS success model, this study makes an important contribution to existing literature. We also extended the model by incorporating two additional constructs relevant to e-filing continuance usage: habit and perceived risks.

By demonstrating empirically that both system quality and user satisfaction are significant predictors of e-filing continuance usage intention in Mauritius, we make an important theoretical contribution. The importance of system quality (Ramayah et al., 2012; Wangpipatwong et al., 2009) and user satisfaction (Azmi and Aziz, 2015; Bhattacherjee 2001; Hsu et al., 2004; Oghuma et al., Teo et al., 2008; Thong et al., 2006; 2016) in determining continuance usage across several e-government and geographical contexts including in the present research, suggests that these constructs cannot be excluded in future studies on continuance intention. Furthermore, we also demonstrated in this study that that the three quality constructs from the IS Success model are theoretically linked. System quality and service quality were found to influence service quality while information quality was influenced by system quality. These results provide the impetus for future studies on IS continuance usage to investigate the relationships between these quality constructs in other e-government contexts to further our understanding on the theoretical links between them. The significant relationships revealed between confirmation, user satisfaction, and information quality justify our motivation for using the ECT as theoretical basis jointly with the IS Success model. In fact, joint use of these two models here led to a model with high explanatory power, enabling us to explain 75.7% of variance in e-filing continuance usage. The ECT and IS Success model therefore deserves to be treated jointly in future studies on e-government continuance usage.

5.2 Practical Implications

From a practical standpoint, a primary objective of studies on IS usage is to ensure that any IS becomes more efficient and effective for society. This is only possible if IS is utilized on a continuous basis. Research on continuance usage intention is essential to guarantee an organization's long-term success (Bhattacherjee, 2001). This study has provided an understanding on the salient factors influencing e-filing continuance usage intention. Results from the research can be useful for tax collection agencies like MRA which can use the findings to improve their e-filing platform to promote continuance usage. Findings indicate that system quality is a significant determinant of intention to continue using e-filing. Therefore, tax authorities should consider investing additional resources in improving the technical infrastructure of the e-filing platform to avoid system breakdowns. Emphasis should be laid on augmenting system capacity and stability, putting in place more robust system structures, and maximizing security and protection.

The study also suggests that user satisfaction is a strong predictor of continuance intention. User satisfaction can be enhanced by improving the system quality and service quality. The MRA may consider engaging and involving taxpayers to improve the design of the system and its services (OECD, 2016). Service quality can be improved further by providing personal log-in information via short messaging service. At present, such information can only be retrieved via email. The level of service can also be enhanced by improving the quality of the taxation process through standardized tax services and improved decision-making processes (Floropoulos et al., 2010). Service quality can also be built by improving website design and ensuring that information is accurate and up-to-date (Xu et al., 2013). The design must reflect the perspective of users of the online system to and provide easy access (Chang et al., 2012). OECD (2016) encourages the use of

technology-enabled support such as smart portal to provide improved and efficient online services to taxpayers. These may include tools such as virtual assistant video facilities and click to call or online chat options that can be of instant help to taxpayers. In this way, users would not have to switch to other web pages or wait for offline assistance which is currently the case.

Confirmation was found to significantly predict user satisfaction. Therefore, the MRA should explore means to increase the possibility of positive confirmation. The tax agency should become more responsive to users' expectations regarding the online system (Thong et al., 2006). At the same time, the MRA should respond as quickly as possible to changes happening in the tax ecosystem (Oghuma et al., 2016). The compliance of tax return can be made more seamless and trouble-free to taxpayers and the online tax services should be integrated and be in line with the natural environment of taxpayers (OECD, 2016). The natural environment consists of accounting and record keeping software solutions and social media such as Facebook (OECD, 2016). User confirmation can also be enhanced by improving information quality. The tax authority should give due consideration to information quality because users tend to use e-filing when they believe that the information help to provide more clarity, understanding, and job relevance (Roca et al., 2006).

Habit was found to influence intention to continue using e-filing. In addition to improving user satisfaction that promotes the habit of using e-filing, it is also important for the MRA to understand the nature and associated benefits of user habit regarding use of IS. They should encourage the habitualization of certain behaviors and at the same time take necessary measures to create a habit-conducive environment (Limayem et al., 2007). Habit development should go above the normal attempt to influence users with rational arguments to change their behavior (Limayem et al., 2007). Venkatesh et al. (2012) suggest that there

should be increased marketing communication to reinforce habit. The MRA may focus on establishing incentives to reward system usage and continuously communicating the advantages of e-filing usage to tax payers. Moreover, continuance usage can also be increased by educating users about the ways to use the online system effectively, while ensuring their confirmation and satisfaction with such system.

5.3 Study Limitations

Readers should interpret the findings in the light of the study's limitations. First, although the study has validated an integrated model of intention to continue using e-filing, it did not analyze actual usage behavior. Continuance usage intention does not necessarily drive actual behavior and the inclusion of actual behavior can allow researchers to make more precise and credible conclusions (Dwivedi, Rana, Jeyaraj Clement, and Williams, 2017; Limayem et al., 2007). Given that research on IS continuance is intended to promote actual re-usage, it is preferable to measure IS usage behavior instead of intention (Bhattacherjee and Barfar, 2011). However, few studies have analyzed the association between intention to use e-government services and actual use. This remains an important gap in the literature which future studies should bridge.

Second, the model has its theoretical foundation in the ECT and IS Success model. Although the study includes those constructs that are relevant to continuance usage of e-filing, it omits a number of important variables that could potentially explain usage behaviour. Future studies could consider extending the study by including such concepts as user's trust in the website, trust in the government, compatibility, e-filing self-efficacy, social influence, and privacy concerns (Janssen, Rana, Slade, and Dwivedi, 2017; Zhou and Li, 2014) to improve on the explanatory power of the theoretical model. Third, the study is also limited as it focuses on satisfaction at the individual-level of taxpayers. Hossein and Quaddus (2012) suggest that examining group-level satisfaction in terms of an

organization's satisfaction, can lead to the development of concrete strategies for an organization. Therefore, researchers can extend their survey to businesses and corporates. Forth, the findings may be limited to continuance usage of e-filing only. The extent to which the results of the path relationships can be extended to other e-government system remains to be verified. Therefore, it is important for future studies to test the model in other e-government contexts to validate the results. Finally, the study relied on a survey method to collect data. Findings should therefore be interpreted in the light of the caveats of such a research design, commonly referred to as total survey error (Eckman and de Leeuw, 2017). Therefore, future studies should consider testing the theoretical model using other types of design approaches such as experiments and observations to improve on the reliability and validity of the findings (Ortiz de Guinea and Markus, 2009).

6. Conclusion

This study aimed to determine the factors influencing continuance usage intention of e-filing. It made a theoretical distinction between initial adoption and continuance usage behaviors. Accordingly, following a review of existing literature, it was concluded that the majority of research on e-filing has adopted constructs from the adoption literature to study continuance usage behavior. The paper argued that existing IS models designed to study initial adoption may not be entirely relevant to study continuance usage of e-filing. Accordingly, the ECT and IS Success model were found to be most relevant to study continuance usage intention. Using these theories as basis, the study validated a model of continuance usage intention of e-filing. In response to the calls of researchers for extending existing theories by adding new constructs relevant to specific contexts of e-government usage, perceived risks and habit were added as two additional determinants of e-filing continuance usage.

The fifteen hypotheses that emanated from the model were tested using data collected from e-filing users in the island of Mauritius. A structural equation modeling approach was used to test the model. System quality, user satisfaction, and habit were found to be significant predictors of e-filing continuance usage while information quality, service quality, and perceived risks were found not to predict continuance usage. The study also found interrelationships among the three quality constructs of the IS Success model. System quality was found to a good predictor of information quality while the latter in turn influenced service quality. The high predictive power of the structural model indicates that the IS Success model and the ECT are effective theoretical bases for investigating continuance usage of e-government services such as e-filing. Our model can therefore be used by researchers to understand continuance usage in other e-government contexts. However, given that each e-government service has its own idiosyncratic features (Dwivedi, Rana, Janssen, Lal, Williams, and Clement, 2017), researchers should add to the model context-specific constructs to improve its predictive power. Nevertheless, the model of this study can be used as an inspiration for further studies in continuance usage of e-filing.

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Table 1. Sample profile

Variables	n	Percentage
Gender		
Female	286	44.3
Male	359	55.7
Age		
18-29 years	131	20.3
30-39 years	236	36.6
40-49 years	161	25
50-59 years	94	14.6
>60 years	23	3.6
Education level		
Primary	9	1.4
Secondary	141	21.9
Diploma	105	16.3
Degree	215	33.3
Post Graduate	171	26.5
Sector of employment		
Public Sector	262	40.6
Private Sector	232	36
Semi-governmental institutions	151	23.4
Occupation group		
Legislators, Senior Officials & Managers	91	14.1
Professionals	248	38.4
Technicians & associate professionals	116	18
Clerks	138	21.4
Service workers, shop & market sales workers	21	3.3
Skilled Agricultural & fishery workers	4	0.6
Craft and machine operators & assemblers	9	1.4
Elementary occupation	12	1.9
Retired	6	0.9

Table 2.Psychometric properties of the measurement model

Table 3: Discriminant validity of the measurement model

Comparisons		Unconstrained model		Constrained model		x^2 difference		Discriminant Validity
		x^2	df	x^2	df	Δx^2	Δdf	
PR	CI	489.105	34	778.162	35	289.057	1	Yes
PR	HT	395.224	34	647.598	35	252.374	1	Yes
PR	C	312.348	26	500.159	27	187.811	1	Yes
PR	US	406.277	34	691.581	35	285.304	1	Yes
PR	SYSQ	801.561	64	1123.494	65	321.933	1	Yes
PR	SERVQ	1019.582	64	1329.434	65	309.852	1	Yes
PR	IQ	673.525	64	967.534	65	294.009	1	Yes
CI	HT	293.675	34	299.724	35	6.049	1	Yes
CI	C	232.992	26	247.785	27	14.793	1	Yes
CI	US	462.373	34	469.441	35	7.068	1	Yes
CI	SYSQ	728.161	64	755.87	65	27.709	1	Yes
CI	SERVQ	979.883	64	997.76	65	17.877	1	Yes
CI	IQ	638.619	64	678.16	65	39.541	1	Yes
HT	C	169.262	26	194.142	27	24.88	1	Yes
HT	US	311.963	34	344.808	35	32.845	1	Yes
HT	SERVQ	862.839	64	897.557	65	34.718	1	Yes
HT	IQ	491.369	64	550.224	65	58.855	1	Yes
C	US	144.57	26	167.882	27	23.312	1	Yes
C	SYSQ	599.385	53	644.752	54	45.367	1	Yes
C	SERVQ	776.665	53	815.401	54	38.736	1	Yes
C	IQ	392.812	53	444.583	54	51.771	1	Yes
US	SYSQ	747.688	64	783.366	65	35.678	1	Yes
US	SERVQ	918.389	64	939.292	65	20.903	1	Yes
US	IQ	531.949	64	576.525	65	44.576	1	Yes
SYSQ	SERVQ	1428.855	103	1442.553	104	13.698	1	Yes
SYSQ	IQ	1066.003	103	1091.236	104	25.233	1	Yes
SERVQ	IQ	1161.161	103	1201.288	104	40.127	1	Yes

Notes: CI – continuance intention; IQ – information quality; SYSQ – system quality; SERVQ – service quality; US – user satisfaction; C – confirmation; PR – perceived risk; HT – habit.

Table 4. Path relationships

Hypotheses	Path relationships	Standardized beta	t-value	Results
Hypothesis 1	IQ→CI	0.01	0.127	Rejected
Hypothesis 2	IQ → SERVQ	0.25***	3.290	Supported
Hypothesis 3	IQ → US	0.01	0.091	Rejected
Hypothesis 4	IQ → C	0.62***	14.519	Supported
Hypothesis 5	SYSQ→CI	0.17*	2.072	Supported
Hypothesis 6	SYSQ → IQ	0.91***	19.143	Supported
Hypothesis 7	SYSQ→ SERVQ	0.62***	7.672	Supported
Hypothesis 8	SYSQ →US	0.26**	3.065	Supported
Hypothesis 9	SERVQ→CI	0.01	0.145	Rejected
Hypothesis 10	SERVQ →US	0.46***	8.251	Supported
Hypothesis 11	US →CI	0.57***	9.548	Supported
Hypothesis 12	US→ HT	0.69***	16.316	Supported
Hypothesis 13	C → US	0.24***	7.278	Supported
Hypothesis 14	HT → CI	0.20***	5.558	Supported
Hypothesis 15	PR→ CI	-0.043	-1.795	Rejected

Notes: CI – continuance intention; IQ – information quality; SYSQ – system quality; SERVQ – service quality; US – user satisfaction; C – confirmation; PR – perceived risk; HT – habit; $*p < 0.05$; $**p < 0.01$; $***p < 0.001$
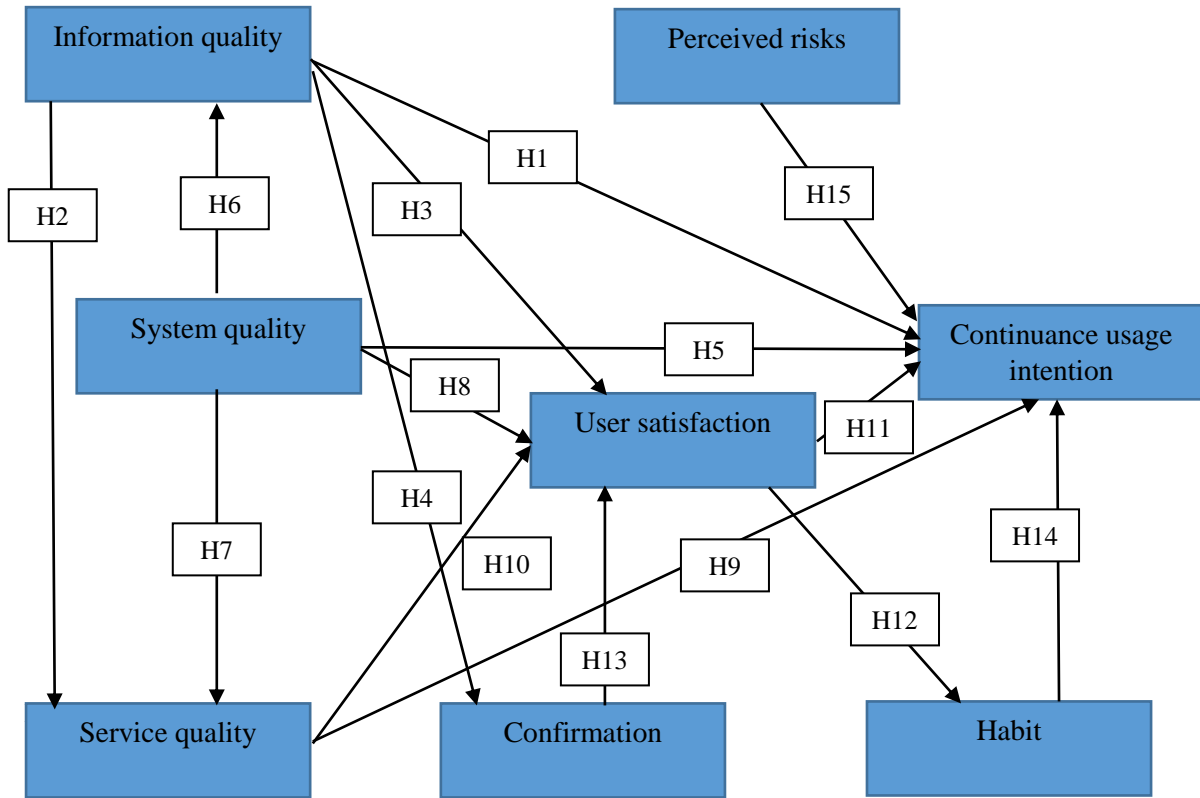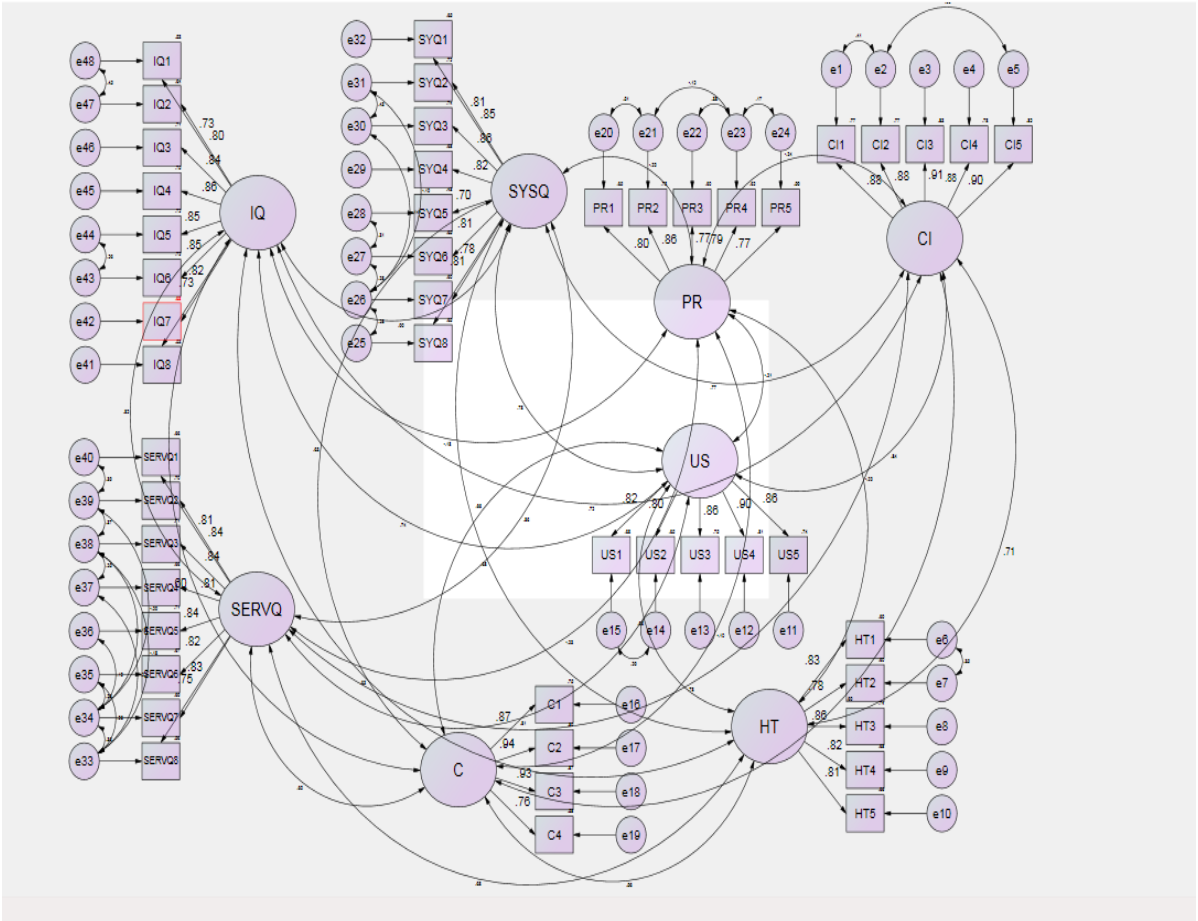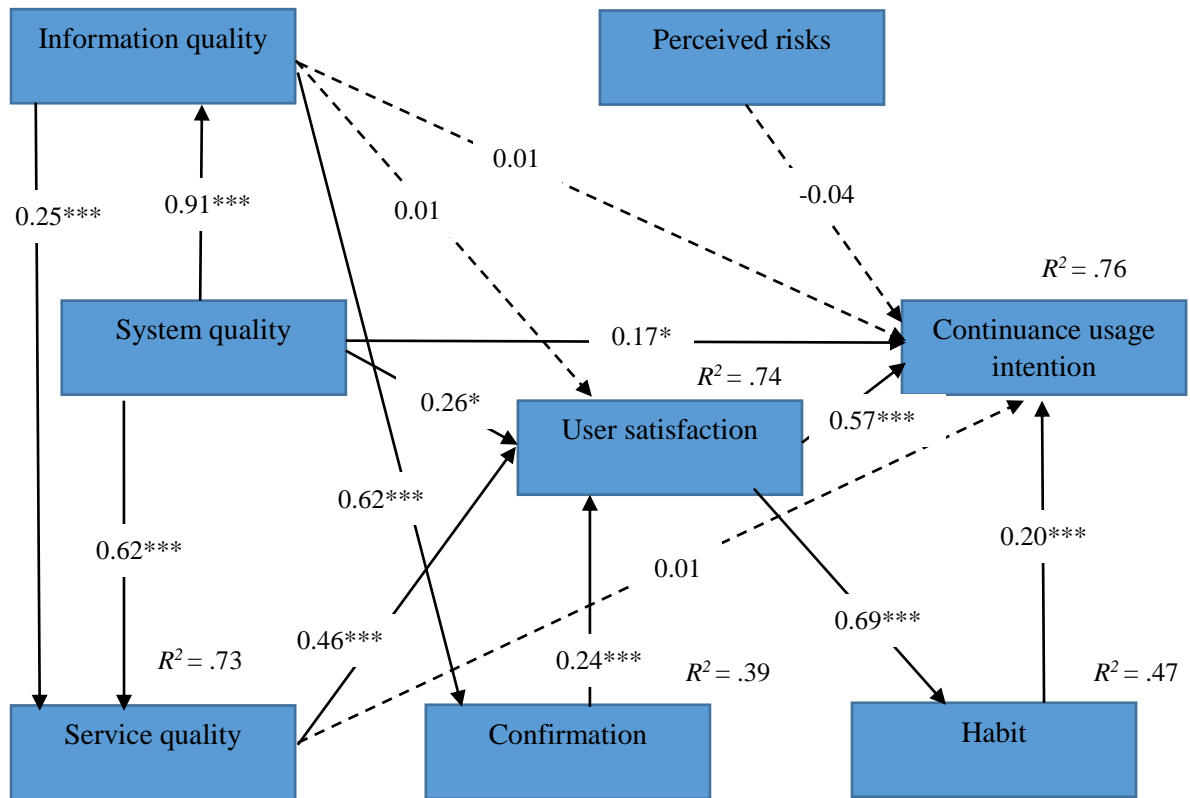
Figure 1. The conceptual model

Figure 2. The measurement model

*Notes: Broken line indicates insignificant paths; *p < 0.05; **p < 0.01; ***p < 0.001*

Figure 3. The structural model with standardized beta values and explained variance