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Towards e-Governance: An Exploratory Analysis of e-Tax Filing Adoption in Bangladesh

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Abstract

This study attempts to explore taxpayer behavioral intention to adopt Electronic Tax (e-Tax) filing systems in Bangladesh. Following an interpretive research paradigm this study employs an in-depth interview method for data collection from six individuals selected through a judgment sampling technique. Content analysis is employed through the application of inductive and deductive approach for the data analysis. The study explores a range of factors which may significantly affect adoption of e-Tax filing which includes, performance expectancy, effort expectancy, social influence, trust, security, facilitating condition and country readiness. The study also explores age, gender, and ICT experience as moderating variables. The exploratory analysis not only formulates a theoretical framework to examine individual taxpayer behavioral intention to adopt e-Tax filing but also helps develop government policy priorities to foster the pace of e-Tax filing system adoption in Bangladesh.

Keywords: *E-governance, e-Tax filing, behavioral intention, interpretive research paradigm, UTAUT model.*

1. Introduction

The treasuries of any government are highly reliant on imposing and collecting taxes from the citizen as well as from the business organizations. The successful execution of financial and development plans of a country largely depends on how efficiently and timely the target taxes are collected. In view of enhancing the productivity, efficiency and transparency in tax collection government employs a range of policies and administrative supports, which include rewards, rebates, and various promotional activities. Introduction of electronic tax (e-Tax) filing is now being considered as an important mean for making ease and saving costs in tax collection, which help enhance the efficiency (Chen, 2010) and transparency in government services.

Electronic tax filing refers to an automated taxation system which enables tax payers in preparation and submission of income tax returns and tax-payments online. E-taxation is

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as an effective tool for establishing e-governance (Stafford and Turan, 2011; Asianzu and Maiga, 2012, 2013; Decman, Stare and Klun, 2010; Wu and Chen, 2005; Wang, 2012; Chatfield, 2009; Chen et al., 2015). Use of information systems (IS) like electronic government (e-government) web sites enable governments to provide a wide range of advanced and innovative services to citizens (Hu et al., 2009; Matavire et al., 2010). As a result, governments around the world are emphasizing on the use of ICT in various forms, such as, electronic filing (e-filing) that help promote an automated citizen services throughe-governance (Dorasamy et al., 2010).

E-government is the provision of online public service to citizens and businesses (Teodora, 2008). It is the use of Internet or other digital means such as information and communication technologies (ICTs) in providing government services to the people and various other stakeholders with an anticipation of improved efficiency and transparency in various government services (Gil-Gracia and Pardo, 2005; Wong et al., 2006) that are useful to the respective stakeholders (West, 2004; Hart and Teeter 2000; Koh and Prybutok, 2003; Srivastava and Teo, 2007a; 2007b; ANOA, 2006). Services like registration for healthcare, education, employment benefits or taxation are usually included in e-government service systems (Teodora, 2008). This service can help reduce cost and time for both the parties-the government and the citizenry (Wang, 2012). Among all other e-services, e-tax (filing and payment) has significant roles in the dynamics of government and citizen (Wu and Chen, 2005).

E-taxation enables individuals and corporations to file taxes and the payments online (Hu et al., 2009; Chatfield, 2009). Taxpayers can gain substantial benefits from using e-Tax, including improved accuracy and efficiency over paper-based filing, lower costs, and faster refunds (Pant et al., 2004; Peterson and Washington, 1993).

E-taxation acceptance has become an important index of e-government in many countries across the world (Chen and Huang, 2006). However, the scenario of Bangladesh is different from other countries since the adoption and acceptance of e-Tax filling is in its infancy level. Although Bangladesh has set its vision to establish a digital technology based society, the nation is passing through a transitional period where it is experiencing a significantly large-scale improvement in the process of establishing a digital based operation in various government departments. In the process of development the government has established a wide range of networks, which linked the citizens from different interior locations to the main face of the government's networks, and the development initiative is titled as 'digital Bangladesh' where digital technology would be the key driving force of the nation's economy.

The National Board of Revenue (NBR) plays key role in tax administration in Bangladesh since it is the only authorized organization to implement and execute tax laws, rules, guidelines to collect and mobilize internal revenue for the successful implementation of government development initiatives. More particularly, NBR was established by the President's Order, No. 76 of 1972, to help implement the national budget and also to manage and operate domestic resource collection and mobilization process in Bangladesh.

Thus, to establish dynamic revenue management in the tax department and to comply with government's vision of establishing digital Bangladesh, NBR has initiated to establish many online services like online tax registration, online Tax Payer Identification Number (TIN) registration and online VAT calculation.

Online tax filing system in Bangladesh, although in existent, does not provide convenience to the individual taxpayer. For example, the official website of NBR provides a window to submit income tax return online which requires scanned copy of manually prepared income tax return form. Tax payers must have an user ID and password which is designed to be provided by the local income tax office for online return submission following the above mentioned procedures which projects a slow move in digitalization process in tax collection system. It is interesting to mention that, in the assessment year 2019-2020, 2.2 million of the 4.6 million electronic TIN (e-TIN) holders submitted their return (NBR, 2020) out of which only 4 to 5 percent returns were submitted online and less than one percent of the tax payers followed online payment system in the said assessment year[3].

The comprehensive implementation of online tax filing system in Bangladesh is still underway which posits a question how to implement the system by providing user convenience in the near future. Since the government has an urge to provide various government services to the doorsteps of the people through e-platforms, one important question comes out whether the potential users of e-services are ready to accept the system or not? Therefore, this study aims to assess the taxpayers' intention to use e-tax filing system in Bangladesh.

2. Conceptual framework

E-taxation enables online return preparation, submission, and payment, sitting at home which results in time and cost savings for both the parties, i.e., taxpayer and tax collector. E-tax filing also enhances the effectiveness of the tax authorities in assessing and collecting taxes. It is assumed that use of digital means in tax filing would reduce the corruption and inefficiencies in tax management. Realizing the abundant benefits of e-filing systems, governments around the world either have installed the digital based tax filing systems or about to establish e-tax filing systems. However, there remain big differences between tax payment systems around the world. Taxpayers in manly countries are quite habituated with this system since they have the technology and full-fledged infrastructure to implement e-tax filling systems, while the taxpayers in some countries are thinking to use the system. This global phenomena attracts bulk of researchers attention to analyze tax payers intention of using online tax filing system around the world (Bhuasiri et al., 2016; Chen et al., 2015; Venkatesh et al., 2014; Okoye and Ezejiofor, 2014; Maiga and Asianzu, 2013; Asianzu and Maiga, 2012; Wang, 2012; Stafford and Turan, 2011; Lu et al., 2010; Chen, 2010; Decmanet al., 2010; Dorasamy et al., 2010; Chatfield, 2009;

[3] Source of information regarding online return submission and online tax payment is the official record of a regional income tax office operated under the National Board of Revenue (NBR), Bangladesh.

Schaupp et al., 2009; Chen and Huang, 2009; Fu et al., 2006; Chen and Huang, 2006; Pant et al., 2004; Wang, 2002; McLure, 2000).

In the past, numerous studies (Hung et al., 2006; Van Dikj et al., 2007) examined the e-government services acceptance phenomena around the world. Since electronic taxation is being considered as an effective tool for a successful e-government initiative, a lot of studies also have been initiated to examine whether e-tax filing adds any value to the e-governance (Stafford and Turan, 2011; Decman et al., 2010) or to examine the success factors of e-governance and that of e-tax filing (Chen et al., 2015; Venkatesh et al., 2012; Srivastava, 2009; Horst, 2007).

Notable theories have been applied to explore and analyze factors affecting organizations as well as individual's technology acceptance behavior. Many researchers have been applied DeLone and McLean's (1992, 2003) Information System (IS) Success model to judge information systems implementation success from the users' viewpoint (Chen, 2010; Chen et al., 2015; Floropoulos et al., 2010; Petter and McLean, 2009). According to DeLone and McLean (2003) success of information system adoption is dependent on users' perception about net benefit where the net benefit comes from the user satisfaction and intention to use the technology or information system. Hence, the intention to use and user satisfaction towards any particular information system is dependent on system quality, information quality and the system's service quality (DeLone and McLean, 2003). If the perception of net benefit is positive then the users will be intended to use the technology based services or information system services.

A countable number of past studies have applied Rogers' (1995) Diffusion of Innovation (DOI) theory (Agarwal and Prasad, 1998; Eastin, 2002; Bharatiand Chaudhury, 2006; Azamand Quaddus, 2009, 2012, 2013) and Tornatzky and Fleischer's (1990) Technology-Organization-Environment (TOE) model (Chau and Tam, 1997; Thong, 1999; Kuan and Chau, 2001; Vega et al., 2008; Zailani, Dahlan and Jallaludin, 2009; Awa et al., 2012) to explore and analyze factors affecting technology adoption behavior of individuals as well as of organizations. In fact these two theories mainly focus on organization's technology acceptance intention behavior.

Technology Acceptance Model (TAM) is one of the commonly used theories to look into the technology usage intention of individuals. It is developed by Davis (1986) which is derived from the Theory of Reasoned Action (TRA) that states technology acceptance intention of individual is influenced by the ease of use and usefulness perceptions regarding a technology (Davis, 1986). On the other hand, Theory of Planned Behavior (TPB), developed by Ajzen (1991) was extended from TRA also by adding a new construct namely perceived behavioral control. TPB implies attitude, subjective norms, and perceived behavioral control to explain individual's intention to accept and use of new technology or technology based services. A number of past studies employed integrated model of TAM and TPB (Fu et al., 2006; Lu et al., 2010; Stafford and Turan, 2011; Wang, 2012) whereas some studies employed an extended version of TAM (Wang, 2002; Hu et al., 2009; Asianzu and Maiga, 2012; Maigaand Asianzu, 2013) to explain the behavioral

intention of individuals towards technology based services acceptance, especially acceptance and use of e-tax filing and any other e-government services. During our study we also notice that some previous research initiatives have integrated TAM with DOI and other theories (Chen and Huang, 2006; Chen and Huang, 2009; Dorasamy et al., 2010) to predict tax payers' willingness of using self-service technology based online government services, more clearly to understand and assess the tax payers' intention of using e-tax filing system services.

Therefore, it is clear that in many cases two or more theories have been synthesized in view of constructing a comprehensive framework to intensively study a diffusion phenomenon. In such an effort Venkatesh et al. (2003) evaluated eight diffusion models and constructed a comprehensive framework to study the adoption-diffusion phenomena of a technological innovation which is Unified Theory of Acceptance and Use of Technology (Venkatesh et al., 2003).

The Unified Theory of Acceptance and Use of Technology (UTAUT) (Venkatesh et al., 2003) which has been employed in a number research initiatives to examine a range of technological innovations, such as technology, Information technology and mobile services, acceptance behavior in different parts around the world (Venkatesh et al., 2003; Venkatesh and Zhang, 2010; Foon and Fah, 2011; Taiwo and Downe, 2013). The model comprises four core determinants: performance expectancy, effort expectancy, social influence and facilitating conditions alongside it has four moderators as gender, age, experience, and voluntariness of use.

Performance expectancy was measured by the perceptions of using e-government services in terms of benefits, such as time saving, cost saving, effort saving, facilitating communication with government, improving the quality of government services and by providing citizens with an equal basis on which to carry out their citizens with an equal basis on which to carry out their business with government (Awadhi and Morris, 2008).

Effort expectancy is the degree of ease associated with the use of the system. The UTAUT model identifies three constructs from the eight models which make up the concept of effort expectancy: perceived ease of use, complexity, and ease of use (Venkatesh et al., 2003). This construct has been found to be significant in both voluntary and mandatory usage contexts, but only in the initial usage of the technology (Venkatesh et al., 2003).

Social influence is the degree to which an individual perceives that others who are deemed important to them believe that they should use the system (Venkatesh et al., 2003). Social influence is comprised of subjective norms, social factors, and image (Schaupp et al., 2009). None of the social influence constructs were found to be significant in voluntary contexts; however, all of them were found to be significant when usage was mandatory (Venkatesh et al., 2003).

Facilitating conditions was measured by the perception of being able to access required resources, as well as to obtain knowledge and the necessary support needed to use an e-file

system (Schaupp et al., 2009). It is also influenced by the perception of the technology fitting into the lifestyle of the user (Awadhi and Morris, 2008).

The application of UTAUT model is very comprehensive and contemporary; however, it still lacks to describe the roles of some important variables influencing ICT based technological innovation adoption such as *Trust* and *Security* as well as *country e-readiness*. Hence, trust implies peoples' perception toward the reliability of technology. On the other hand security includes the payment security and information security, whereas country e-readiness means the IT infrastructural development of the country. This study thus attempts to extract additional variables and finalize the conceptual framework by applying an interpretive research approach through field study. The analyses of the in-depth interviews in conjunction with an extensive literature review, constructs the conceptual framework of this paper.

3. Research method

An interpretive research paradigm is employed to attain the objectives of this study where the research method includes literature review and field study. The aim of this study is to explore factors affecting taxpayer's willingness to use online tax filing services. By design, firstly we went through previous studies to primarily understand about the factors affecting the e-tax filing services usage intention of the taxpayers. Finally, a field study has been conducted to explore and validate the previously identified factors and variables affecting individual taxpayers' intention behavior to use online tax filing systems. The field study conducts six in-depth interviews with six individual taxpayers. A purposive sampling technique has been employed to get an expert and insightful respondent comments on the study matter. The following section addresses a detail of data collection and analyses process.

3.1. Sample

Since the main objective of this study is to explore and validate factors and variables affecting tax payers willingness of using e-tax filing, we undertook a purposive sampling approach to select six individual tax payer who have experience of using government websites, especially the website of tax authority and also are willing to be included in the field study. It is important to note that, use of a judgmental sampling is a common technique in business research (Zikmund, 2000).

However, there are different propositions and suggestions by the researchers in selecting the sample size. For the purpose of this study, we stopped at sixth interview as information redundancy was experienced which is suggested by Lincoln and Guba (1985) and Denzin and Lincoln (2003). This sample size is also supported by Eisenhardt (1989) and Perry (1998), where they proposed 4-8 cases are appropriate for qualitative research that has been follow edin various prior studies like Quaddus and Xu (2005).The interview respondents are selected based on the persons' involvement in tax filing, availability of the persons and convenience to reach them. Six interviewees were selected on the basis of

personal contact. Importantly, each person uses Internet for various purposes in their daily life. For the purpose of this study, we contacted six persons of different educational background via telephone. The respondents are also well known about interactions over the Internet who has been given clear ideas about the objectives of the study. The participants took part in the interview voluntarily. *Table 1* refers demographic information on the firms and the details of the respondents.

3.2. Data collection

Data were collected through an in-depth interview by employing a semi structured interview technique. The existing literature provides the primary guide for undertaking a semi-structured interview. The interview questions focused on the areas of information needed in this research which include among others: (i) degree of internet usage, (ii) factors that influencing to practice e-tax filing, (iii) barriers that inhibiting to use e-tax filing services, and (iv) things that would encourage people to file tax online.

Table 1: Participants Demographic Profile

	Person A	Person B	Person C	Person D	Person E	Person F
Profession	Teacher	Teacher	Govt. Service Holder	Pvt. Service Holder	Banker	Banker
Age group	45-60	45-60	25-34	25-34	25-34	25-34
Position	Associate Professor	Professor	Assistant Manager	Assistant Manager	Senior Executive Officer	Senior Executive Officer
Education	PhD	PhD	MSc	MBA	MBA	MBA
IT knowledge	Yes	Yes	Yes	Yes	Yes	Yes
First use of computer	1997	2001	2001	2005	2004	2006
Frequency of website visit	Daily	Most often	Daily	Daily	Daily	Daily
Tax Paying Status	Tax Payer	Tax Payer	Tax Payer	Tax Payer	Tax Payer	Tax Payer

We were concerned to ensure a less rush working schedule of the interviewees so that there could have a limited chance of facing disruption and interruption during the interview. Therefore, all the interviews were scheduled as per the convenience of the interviewees. The basic and fundamental information regarding the study issues and the methods employed were conveyed through an introductory session prior to the final interview via telephone which enable each interviewee well aware about the interview

process as well as feel comfortable to participate in the interview. In total we conducted six interviews. Each interview lasted for about 1 (one) hour. In view of explaining the body language and other cues received during the interview which we believe have a great value in interpreting the results, we transcribed all the interviews on the following day of the interview.

3.3. Data analysis

Researchers face a challenge in the data analysis as this study stands at interpretive research paradigm. Content analysis has been chosen as the tool for data analysis (to analyzing the interview transcripts) among many other analytical tools used in qualitative research. This study analyzes the in-depth interviews from multiple perspectives by carefully reviewing the interview transcripts. It is noted that content analyses were done manually and a combination of inductive and deductive approaches was used to categorize the factors and variables.

4. Results and implications

4.1. Demography

The demographic information of the interviewees involved in the field study are presented in *Table 1*. It is noted that all the persons involved in the field study are service holder. Three of them are from public service and three are from private sector. All of them are taxpayers. Some of the interviewees are paying taxes for a long time. All the interviewees have prior experience of using or visiting government websites. They also visited the website of tax authority for TIN (Taxpayer Identification Number) registration, to download TIN certificate or to download income tax circulars declared by the government. The interviewees are from different academic backgrounds; however, one of them has had his graduation in computer science and engineering.

4.2. Factors and variables influencing e-tax filing system adoption

The field study explores 11 factors along with 21 distinct variables which are justified by literature review. In our study *performance expectancy* has been found to be the strongest predictor of intention. This finding was expected. All the six interviewees state that an online tax filing system would be time saving, and cost saving to them. The interviewees also say that they can choose any moment of the day to submit their tax return. Four respondents opined that accuracy in performance could be ensured more effectively using technology which leads them to use technological means in the various operations. Therefore, performance expectancy has been identified as a significant predictor of use in the Information Technology (IT) adoption literature (Venkatesh et al., 2003).

Table 2: Factors and Variables

Factors	Variables	Interviewees						Literatures
		A	B	C	D	E	F	
Performance expectancy	Cost saving	√	√	√	√	√	√	Stockdale and Standing, (2004); Bakos, (1998)
	24*7 operation	√	√	√	√	√	√	Hurwitz, (2000)
	Easy execution	√	√	√		√	√	Awadhi and Morris, 2008
	Time saving	√	√	√	√	√	√	Awadhi and Morris, 2008
	Accuracy		√	√	√	√		Floropoulos et al. 2010
	Quality information					√		DeLone and McLean, 2003
	Sufficient information				√			Field study
Effort expectancy	Understandable interaction	√		√		√	√	Venkatesh et al. 2003; Awadhi and Morris, 2008
	Easy to use	√		√		√	√	Venkatesh et al. 2003
Social influence	Coworkers' influence		√			√	√	Venkatesh et al. 2003
	Family members' influence						√	Venkatesh et al. 2003
	Technology usage trend			√		√	√	Field study
Facilitating condition	Available resources					√		Venkatesh et al. 2003
	Knowledge about the system	√	√	√	√	√		Venkatesh et al. 2003
	Available guidance			√	√	√		Venkatesh et al. 2003
	Assistance group				√	√		Venkatesh et al. 2003
	Organizational support					√	√	Venkatesh et al. 2003
Trust and Security	Trust in technology	√	√	√		√	√	Lee et al. 2011
	Trust in authority	√		√		√		Lee et al. 2011
User's Innovativeness	User's Innovativeness			√		√	√	Azam and Quaddus, 2009
Confidentiality	Confidentiality				√	√		Field study
Gender	Gender							Venkatesh et al. 2003
Age	Age							Venkatesh et al. 2003
Experience	Experience					√	√	Venkatesh et al. 2003
Country e-readiness	IT infrastructure			√	√	√	√	Azam and Quaddus, 2012
	Legal framework							Azam and Quaddus, 2012
	Public awareness			√	√	√	√	Azam and Quaddus, 2012

Source: Field study and literature review.

A mixed opinion was derived about *effort expectancy* during our study. Since the idea of e-tax filing system is a new issue in Bangladesh most of the tax payers are not aware of the system. Two of the interviewees have visited the website of NBR only to register and get e-TIN certificate. As a result neither they think using e-tax filing is a complex task nor they think it is an easy one. It is important to note that interviewee D states that *"[...] the website should be designed in such a way so that all the necessary information and guidelines necessary for submitting income tax return as well as direction for online tax payment would be available [...].*" However, respondent E has a clear opinion regarding effort expectancy. Respondent E states that, *"[...] most of the tax payers of Bangladesh belong to a developed society and are very much habituated in technology usage. I don't think online tax filing would be a complex task at all."* In addition to this, respondent F mentions that using computer and some specific accounting software is an inevitable part of her professional life. That's why she doesn't feel that online tax filing would be a difficult task.

It is interestingly observed that *social influence* was found less significant in our study. This result is unusual since the past literature supports that *social influence* has a strong effect on individual's IT acceptance intention. It is only the interviewee B who can remember that very few of his colleagues prepare income tax return using computer.

We noticed that all the respondents have faith on the efficiency and accuracy of technology, but few of them have doubt on the authority's honesty and integrity. Respondent A mentions that *"[...] how could I be sure that my online payment was done properly?"* This statement indicates that there is an ambiguity about the payment system. If the taxpayers get assured that their online payment is going to be safe and secured then they would be interested to pay tax online, our analysis explores. Respondent A also mentions that there is still a chance of avoiding tax because people may not show all of their assets and income accordingly in the tax return. In this connection respondent C says*"[...] e-tax filing would only be able to minimize corruption in tax collection and in tax avoidance if all the incomes and expenses of tax payers of a country are recorded digitally and is stored in a central database."* Respondent E opined the same during conversation.

It is interesting to note that *facilitating conditions* have a great impact on peoples' intention of using online tax filing services. In present days, use of digital devices has got a revolution around the world. Internet services are available to the doorsteps of the people. In the context of this study we realize that taxpayers wish to use the online tax filing system. But they want to get sure that there would be a helpline for the assistance of the taxpayers in any disruptions or interruptions during filling and paying taxes online.

From the analyses of these factors and variables and the effects of those, the following model (*Figure 1*) was formulated to validate the factors which influence individual taxpayers' e-tax filing intention.

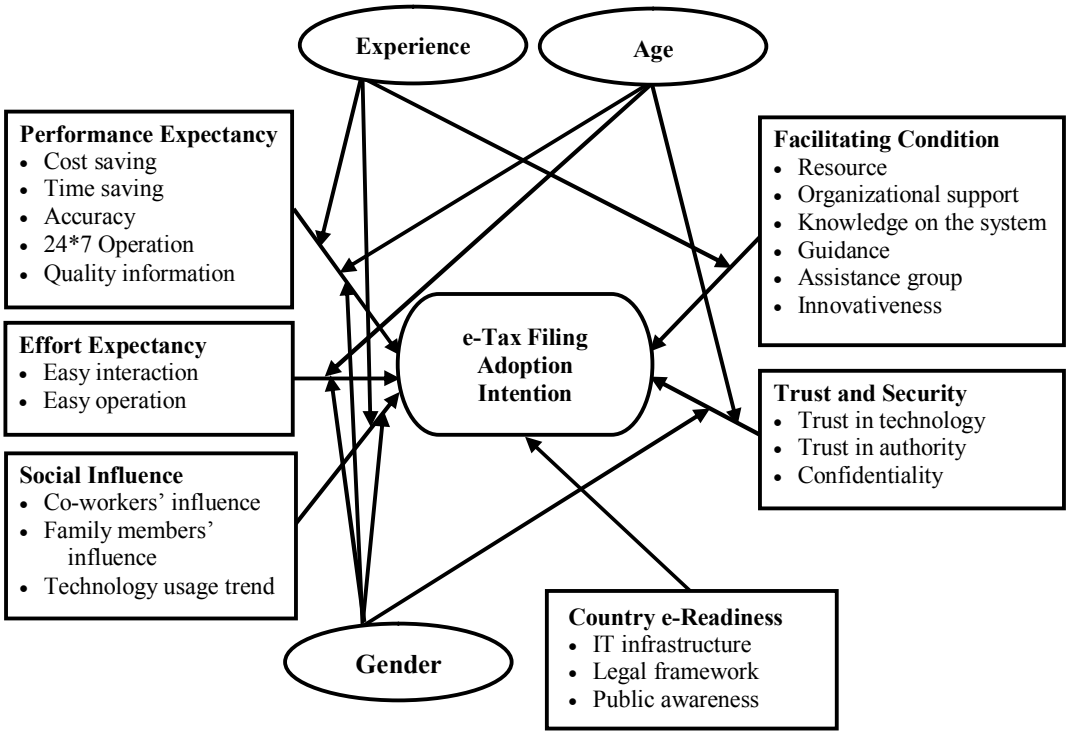

Figure 1: Proposed Research Model

4.3 Research implications

The model shows that the performance expectancy derives taxpayers to use online tax filing system. If the use of tax authority's website requires less technical effort then people would be encouraged using e-tax filing. On the other hand, people will only be interested to accept e-tax filing system trustworthy and provides sound payment system along with protecting information secrecy.

The model may also help in drawing a hypothesis that government's motivational activities like awareness building campaigning, advertisement explaining the benefits of online tax return submission and tax payment over the traditional paper based system would influence people to use the intended system. Another distinct independent variable, namely "country e-readiness" in the model shows that a developed IT infrastructure has positive impact on individual taxpayers' e-tax filing adoption intention.

It should be noted that the projected model in Figure 1 would serve as the basic research model, which would help develop appropriate research hypotheses to initiate a quantitative study to justify them.

Figure 1 presents a practical model explaining individual taxpayers' e-tax filing adoption behavior. All the factors, sub-factors and variables have been obtained from the practical field. The tax authority, policy makers, government, and the taxpayers planning to implement, generalize, and use e-tax filing can consider the factors shown in the model as 'criteria' of successful decision for e-tax filing adoption and implementation.

5. Conclusions and future study

The objective of this study is to explore the factors affecting individuals' e-tax filing adoption decision. Therefore, an interpretive research paradigm has been applied in exploring the factors and variables that influences individual taxpayers' e-filing system adoption decision. The exploratory analysis identifies a range of factors that affect individuals' e-tax filing acceptance behavior. The government, tax authority, policy makers, and potential users may look into these factors for any initiative regarding e-tax filing system development, adoption and implementation.

This study contributes to the e-Tax filing adoption literature by providing a theoretical framework, which can be applied in different countries around the world. This study is exploratory in nature. Since, most of the existing research studies on e-Tax filing adoption follow positivist approach, the projected model can be used in initiating further research studies to develop hypotheses for empirical validation from different country perspectives, especially from a developing country perspective.

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