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THE FACTORS EFFECTING E-FILING ADOPTION AMONG JORDANIAN
FIRMS: THE MODERATING ROLE OF TRUST

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ABSTRACT

The Income and Sales Tax Department (ISTD) has initiated the e-government initiative which includes Electronic Tax Filing (ETF) at the beginning of 2005, to manage the problems associated with the manual filing system. Jordanian government seeks to enhance the relationship between the taxpayers and the tax authorities with the help of a transparent and the exact application of law that encourages deliberate compliance. It is well known that e-filing is essential for firms in enhancing their competitiveness, save time and cost reduction. However, Jordan is facing slow adoption of e-filing by large firms. This paper reviews the factors affecting e-filing adoption among Jordanian firms. Where, Trust is the key determinant in adopting and using such technology. In prior studies, trust has been categorized by researchers as motivational factors. Therefore, the present study investigates the role of the trust element as a moderator between TOE elements and e-filing adoption. To provide further clarification, the DOI theory and TOE framework suggest that adoption behavior is driven by motivational factors that are technological, organizational, and environmental. This argument could enhance e-filing comprehension and help to rectify variability and inconsistency of findings in the literature.

1. Introduction

Electronic tax (e-tax) filing adoption is a way to the provisions of good facilities provided to the citizens with a lower operational cost, researchers

conclude that low acceptance rate for the services are still evidenced in various developing economies until currently (Carter & Bélanger, 2005; Soneka & Phiri, 2019). In addition, although online payment is available, it is not widely used by taxpayers (World Bank, 2019) This includes the Jordanian taxpayers despite the availability of e-filing and its convenience and also the ISTD's effort to promote such e-services. In general, less than 10 percent of taxpayers use the electronic method (TADAT, 2016). Furthermore, several studies concludes that the Jordanian government significantly used the IT systems however the end results of this system is unfavorable and tremendously low (Jordan Times, 2018).

Jordan is still facing problems to utilize ICT in delivering the government services online (Al-rawahna et al., 2018; Elsheikh, Cullen & Hobbs, 2008; Kofahe, Hassan, & Mohamad, 2019). This highlights that there is a need to recognize the predictors that influence e-filing adoption in Jordan organisations as a major end user. Regardless of the popularity and the benefits of e-filing, it has not been well utilized thus needs some improvements (Schaupp & Carter, 2010; Veeramootoo, Nunkoo & Dwivedi, 2018). For instance, the strategic significance of the e-filing derives from their benefits to the taxpayers and among the benefits are that there is no need to mail the paper returns and also that this system is faster than the traditional systems to claims for refunds (Koong, Bai, Tejinder & Morris, 2019).

In the Jordanian context, the relationship between taxpayers and tax administration needs to be characterized by trust. Such relationship can develop when the tax administration facilitates taxpayers' task to comply with their obligations, and when it strictly respects taxpayers' rights (Public Financial Management Reform 2018 – 2021). Thus, one of the major reasons for citizens avoid sharing information to others is the lack of trust (Abu-Shanab, 2014). This is because sharing private and secret information with government through internet bring forth certain issues with data such as misused information due to privacy risk (McClure, 2001; Tjen, Indriani & Wicaksono, 2019).

Despite considerable studies focusing on e-filing (e.g., Schaupp, Carter, & Hibbs, 2009; Shao, Luo, & Liao, 2015), researchers have yet to study the factors effecting e-filing adoption among Jordanian firms. Thus, to extend the present knowledge one-filing, this paper aims to examine the influence of technological, organizational and environmental factors on e-filing adoption among Jordanian firms. Furthermore, this study anticipates trust as a viable moderator to explain the relationships between TOE factors and e-filing adoption. The findings of the study would facilitate greater understanding of the factors that determine e-filing adoption, especially from an organisational level perspective.

This paper comprises of five interlinking sections. The discussion in this section has signified vital issues relating to the e-filing adoption in Jordan that leads to the research objective. The subsequent sections elaborate relevant literature review, the determinants of e-filing adoption using DOI and TOE, and the proposed research framework. The third section

illustrates the proposed research method followed by an instrument development. Meanwhile, the final section offers the conclusion of the study.

2. Literature Review

Considering the discerned issues indicated in the previous section, this section reviews the extant literature to substantiate the issues raised and then addresses them accordingly. This section comprises of the following discussions:

- Previous Studies on E-filing
- Theoretical Framework, and
- Conceptual framework and hypotheses.

2.1 Previous Studies on E-filing

The strategic significance of the e-filing derives from their benefits to the taxpayers and among the benefits are that there is no need to mail the paper returns and also that this system is faster than the traditional systems to claims for refunds (Koong, Bai, Tejinder & Morris, 2019). As a result of e-filing adoption in handling the filing process, this system allows tax payers to file, conduct, and finally redeem their tax payments while saving operation cost and save time (Barati & Bakhshayesh, 2015; Hammouri & Abu-Shanab, 2017). Furthermore, e-filing program is considered as e-government facility with enhanced communication technology that allows tax payers to carry out their tax payments using digital services (Anuar & Othman, 2010; Barati & Bakhshayesh, 2015; Hammouri & Abu-Shanab, 2017). Generally, innovation diffusion is conceptualized as an iterative, three-stage process pre-adoption, adoption, and post-adoption (Rogers, 2003). In the pre-adoption stage, organizations recognize the problems that occur and the innovation that is required to resolve this particular problem. Thus, this also highlights the need to adopt innovation in order to obtain advantages over the competitors (Alharbi & Sandhu, 2019; Kwon & Zmud, 1987). The current research pays attention on the adoption stage which is e-filing adoption among Jordanian firms. IT adoption research has been initiated to investigate the slow and frequently unexpected adoption of IT innovations. This problem has motivated scholars to understand, manage, and predict its diffusion. Majority of the studies seem to address this similar question that is what are the factors that facilitate or hinder the adoption of IT diffusion based on innovations within a population of the potential adopters (Yoon & George, 2013). Despite there are many studies being conducted by the researchers worldwide on the factors that effect on e-filing, a few studies in the middle east especially in Jordan. This paper serves to eliminate the research gap by investigating the factors that affect the adoption of e-filing among Jordanian firms.

2.2 Theoretical Framework

TOE framework has been widely tested in IT/IS adoption studies and has reported consistent empirical support (Al-Hujran, Al-Lozi, Al Debei & Maqableh, 2018; Oliveira, Thomas & Espadanal, 2014). In addition, The TOE framework can be combined with other frameworks so that organizations can understand more about IT adoption (Catherine

&Abdurachman, 2018; Gangwar, 2016).Moreover, researchers (Hsu, Ray & Li-Hsieh, 2014; Oliveira & Martins, 2011) have identified the TOE as the most widely-used innovation adoption theory in organisational-level adoption studies (Maduku, Mpinganjira& Duh, 2016). This framework covers three factors that are technological, organizational, and the environmental.In terms of the theoretical significance, the current research adopts the TOE framework combined with the Diffusion Of Innovation (DOI) theory to identify the factors that influence e-filing adoption of the organizations in Jordan. This study focuses on the Jordanian firms to examine the factors affecting e-filing adoption by integrating the TOE framework i.e., Technology, Organization, and Environment framework (Depietro, Wiarda& Fleischer, 1990;Tornatzky& Fleischer, 1990) and diffusion of innovations theory (Rogers, 1962) in order to further explore various key factors affecting the adoption of E-filing among Jordanian firms.

2.3 Proposed framework and hypotheses development

This paper helps to evaluate the factors that inhibiting or facilitating e-filing adoption among Jordanian firms. Figure 1 exhibits a research framework, identifying the association between the independent variables and the dependent variable with the role of trust as a moderator between TOE factors and e-filing adoption. The three main attributes that influence on e-filing adoption are examined from the contexts of technology, organization, and environment. The hypotheses of the study play a major role in completing the research model.

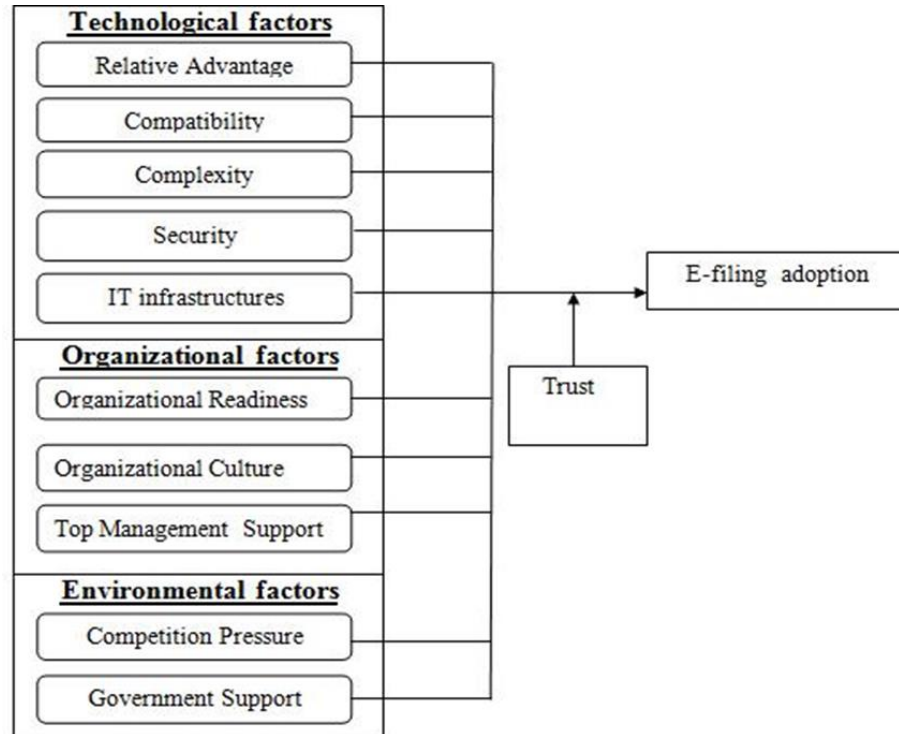


Figure 1: Proposed framework

2.3.1 Technological Factors

The literature has identified many technical predictors that influence adoption decision in terms of technical factors that are associated with IS adoption. The literature has identified many technical factors associated with IS usage that influence adoption decision. The following section explains the technological factors that are likely to influence the e-filing adoption according to the studies and theories cited.

There are limited researches in the world that focused on e-filing with TOE theory. Therefore, current study will cover researches that studied e-filing and e-government because e-filing is a type of e-government program.

2.3.1.1 Relative Advantage

Firms will adopt an innovation if the technology is likely to improve their returns on investments (Boateng et al., 2011; Zhu, Kraemer, et al., 2006). Rogers (1995) explained that relative advantage shows the level to which innovation is better than the existing technology, and organizations adopt the innovation to enhance the performance (Safari, Safari, Hasanzadeh&Ghatari, 2015). Previous scholars have comprehensively examined the impact of relative advantage factor on organizations technological adoption (Ghobakhloo, Arias-Aranda& Benitez-Amado, 2011; Hassan, Nasir, Herry, Khairudin&Adon, 2017). They discovered that once businesses understand the relative advantages of an innovation, the chance of adoption may improve (Gutierrez, Boukrami&Lumsden, 2015; Hussein, Baharudin, Jayaraman&Kiumarsi, 2019). This leads to the following hypothesis:

H1: Relative advantage has a positive influence on E- filing adoption.

2.3.1.2 Compatibility

The term compatibility means the level to which an innovation is perceived as steady with the current values, previous experiences, and the needs of the probable adopters (Rogers, 2003). Moreover, compatibility is one of the greatest driving force in the use of technology in a firm when compared with other innovation attributes (Daoud & Ibrahim, 2018; Grandon & Pearson, 2004; K. Zhu, Kraemer, et al., 2006). Thus, based on the DOI theory and the literature findings, the current research proposes that a high level of compatibility with previous experience is likely to enhance adoption of e- filing. The following is the proposed hypothesis:

H2: Compatibility has a positive influence on E- filing adoption.

2.3.1.3 Complexity

The term complexity refers to the level to which an innovation is comparatively complex to understand, execute, and use (Rogers, 2003). Moreover, complexity is also frequently considered as a hindering factor for the acceptance of the latest technology (Rogers, 2003). Therefore, researchers conclude that the more simple the technology and can be understood by the members of the organizations, the quickly the

organization adopt this technology (Alsaad, Mohamad, & Ismail, 2017). Therefore, researchers conclude that complexity plays a vital role in the obstruction of the technology adoption (Jang, Kim, Jung & Gim, 2018; Lim & Oh, 2012). This leads to following hypothesis:

H3: Complexity has a negative influence on the e-filing adoption.

2.3.1.4 Security

The term security refers to the level of that the particular innovation within organization does not harm the valuable information of the citizens using the system and that this technology secures the confidential information of every user (Haneem, Kama, Taskin, Pauleen & Bakar, 2019; Soliman & Janz, 2004). Data privacy and data security are critical factors that should be focused by organizations when adopting new technologies (Haneem et al., 2019). Hence, to increase the actual participation by businesses in the adoption of e-government initiative, issues regarding safety and accessibility of IT infrastructure must be further explored (Lean, Zailani, Ramayah & Fernando, 2009). Some studies support that privacy and security play a significant role in the adoption of new technology such as e-government service (Abu Shanab, 2014). Notably, many studies have found that security is an important element in e-government adoption and also a key barrier to e-government adoption among citizens and businesses (Joia, 2004). Thus, the following is the proposed hypothesis:

H4: Security has a positive influence on e-filing adoption.

2.3.1.5 IT Infrastructure

The IT infrastructure refers to the tangible resources of an organization that are used to accept the new technology in the organization. IT infrastructure capability is the firm's ability to leverage its technical and human IT resource infrastructure (Benitez-Amado & Ray, 2012). According to Akram, Goraya, Malik and Aljarallah (2018) the technology infrastructure consists of all the perspective that are related to IT capabilities of an enterprise like data storage, hardware, networks, and the software. Empirically, some studies conclude that there is a significant and increasing relationship between the IT innovation and IT infrastructure and capabilities (Lai et al., 2018). Hence, it is believed that an organization's IT infrastructure and their capabilities significantly enhance the adoption of new technologies like e-filing systems. Organizations with improved IT infrastructure and capabilities perform better than their competitors in the existing market and gain the sustainable competitive advantage in the current technological environment (Akram et al., 2018; Oliveira, Thomas & Espadanal, 2014). Following is the proposed hypothesis:

H5: An IT infrastructure has a positive influence on the e-filing adoption.

2.3.2 Organization Factor

The organizational factors are the distinctive characteristics of an organization which leads to the decision to accept the new technology

(Tornatzky& Fleischer, 1990). These factors have a significant influence over the intention of an organization to use the latest technology.

2.3.2.1 Organizational Readiness

Organizational readiness is conceptualized as the availability of specific organizational resources to adopt new IT innovations (Wang et al., 2010). According to previous studies, most significant organizational factors that help firms to adopt innovation is organizational readiness (Alsaad, Mohamad& Ismail, 2014; Chwelos, Daoud&Ibrahim, 2018). The availability of IT professionals, top management support, and viable funding strategy are the key factors that often used to assess organizational readiness (Dewi et al., 2018;Yang et al., 2015). Conversely, if an organization is hesitant to spend on training of employees and education to get the required skills and the expertise that are linked to that specific technology, most likely the adoption of the technology will be reversed (Bosch-Sijtsema, Isaksson, Lennartsson&Linderoth, 2017;Chen et al., 2019). Thus, the following hypothesis is proposed:

H6: Organizational Readiness has a positive influence on the e-filing adoption.

2.3.2.2 Organizational Culture

Organizational culture refers to a combination of some common characteristics within an organization in the employees such as norms, assumptions, beliefs, and values (Liu, Ke,Wei, Gu& Chen, 2010; Mohtaramzadeh, Ramayah& Jun-hwa, 2018). Researchers pay much attention over organizational culture because it plays a vital role in accepting the latest technology within an organization(Khazanchi et al., 2007; Liu et al., 2010;Mohtaramzadeh et al., 2018). Recent studies conclude that organizational culture is a key factor for technological innovation adoption and helps to implement technology within an organization (Qashoua&Saleh, 2018). The following is the proposed hypothesis:

H7: Organizational Culture has a positive influence on the e-filing adoption.

2.3.2.3 Top Management Support

The top management support refers to the level of the management's ability to offer support to the whole team and facilitates to handle problems and solve these problems within specified time. Moreover, the term top management support means the level of the support from the management to accept the new technology (Haneem, Kama,Taskin, Pauleen, Azaliah, et al., 2019; Premkumar& Roberts, 1999). as researchers conclude that top management is considered as a significant variable for the success of the acceptance of new technology within an organisation (Mohtaramzadeh et al., 2018;Premkumar& Roberts, 1999;Mahajan & Balasubramanian, 2003). as researchers conclude that top management is considered as a significant variable for the success of the acceptance of new technology within an

organization (Mohtaramzadeh et al., 2018; Premkumar & Roberts, 1999; Mahajan & Balasubramanian, 2003). Hence, following is the proposed hypothesis:

H8: Top management support has a positive influence on e-filing adoption.

2.3.3 Environment Factors

According to Tornatzky and Fleischer (1990), based on the TOE framework, environmental factor plays its role when an organization carries out their activities such as their competitors, industry, reach to resources, and the dealings with government (Salleh & Janczewski, 2018).

2.3.3.1 Competitive Pressure

Competitive pressure from the competitors is the results from a firm's response to uncertainty which means that the level of the competitors in the existing market has an influence over that particular firm (Scott, 2013). Some researchers conclude that in a competitive market, there is a need to focus on the latest technology which helps organizations to enhance their productivity that leads to sustained competitive advantage (Mohtaramzadeh et al., 2018). Literature reveals that pressure from the competitors is considered a vital factor for the technology diffusion (Jang et al., 2018; Low et al., 2011; Oliveira & Martins, 2010). Recent studies conclude that in a high competitive market, organizations who launch their big data first will gain advantage over competitors and then they could use this technology for the betterment of organization (Jang et al., 2018). Hence, we propose that:

H9: Competitive pressures have a positive influence on the e-filing adoption.

2.3.3.2 Government Support

Researcher's empirical evidence demonstrate the importance of government support in IT adoption (Ocloo et al., 2018). Meanwhile, some studies examine the influence of government support over technology adoption and their findings reveal that government support plays a vital role in accepting new technology (Elahi & Hassanzadeh, 2009; Mohtaramzadeh et al., 2018; Scupola, 2003; Thatcher et al., 2006; Zhu & Thatcher, 2010). In the previous studies, government support was found to have a positive influence on technology adoption (Gibbs & Kraemer, 2004; Teo & Ranganathan, 2004; Wang & Lo, 2019). Following is the proposed hypothesis:

H10: Government Support has a positive influence on the e-filing adoption.

2.3.4 The Moderating Role of Trust

Trust is a variable that has been under discussion over the last five decades along with the development of human dealings (Alzahrani et al., 2017).

Trust is deemed as a significant element which demonstrates that how well individuals interact with each other and how well they trust others (Alzahrani et al., 2017; Lewicki & Wiethoff, 2000). According to Venkatesh, Thong, Chan and Hu (2016), trust refers to the level in which e-government system will deliver the necessary facilities to the citizens. The literature reveals that trust is considered as an antecedent of the cooperation (Zhang et al., 2018) and encourages organizations to look for the latest strategic options (Zahra, Hayton, Neubaum, Dibrell & Craig, 2008; Zhang et al., 2018). Notably, trust is considered as a crucial factor that helps to satisfy the general public and enhances the relationship between general public and e-government (Teo, Srivastava & Jiang, 2008). The successful acceptance of e-government provides various benefits to general public, businesses, and the government (Al-Kofahi, Hassan, & Mohamad, 2020). However, in various economies, general public is still facing the issues on trust in the internet transactions which gives a significant influence over e-government (Alzahrani et al., 2017; Ndou, 2004; Ramadoss & Palanisamy, 2012; Reilly & Cullen, 2006). Interestingly, trust has been discussed in detail in the prior studies about e-commerce (Alzahrani et al., 2017; Chang & Cheung, 2005). However, limited studies are conducted to discuss the role of trust in the e-government facilities (Alzahrani et al., 2017; Horst, Kuttschreuter & Gutteling, 2007; Schaupp, Carter & Hobbs, 2009).

Sekaran and Bougie (2016) proposed that whenever the relationship between the independent-dependent variables becomes contingent or dependent on another variable, thus, the third variable has a moderating effect on the independent-dependent variables relationship (Sekaran & Bougie, 2016). Based on the previous discussions, this study proposes to analyse the interconnections amongst TOE factors and e-filing adoption. While, there is reason to believe that other factors could impact these relationships. Accordingly, this study proposes trust as moderating factor in the relationships between TOE factors and e-filing adoption. Hence, this paper hypothesizes the following:

H11A: Trust moderates the relationship between relative advantage and e-filing adoption has a positively.

H11B: Trust moderates the relationship between compatibility and e-filing adoption has positively.

H11C: Trust moderates the relationship between complexity and e-filing adoption has negatively.

H11D: Trust moderates the relationship between security and e-filing adoption has positively.

H11E: Trust moderates the relationship between IT infrastructure and e-filing adoption has positively.

H11F: Trust moderates the relationship between organizational readiness and e-filing adoption has positively.

H11G: Trust moderates the relationship between organizational culture and e-filing adoption has positively.

H11H: Trust moderates the relationship between top management support and e-filing adoption has a positively.

H11I: Trust moderates the relationship between competitive pressures and e-filing adoption has positively.

H11J: Trust moderates the relationship between government support and e-filing adoption has positively.

3. Proposed Method

The propositions and model set out above will be tested empirically. This study is going to employ a quantitative research approach to examine the influence of technological, organizational and environmental factors on e-filing adoption among Jordanian firms. The hypotheses of this study will be tested using Partial Least Squares (PLS) path modelling. The collected data will be statistically subjected to analysis and interpretation to generate conclusion or make necessary inferences to the population of the study. In addition, this study considers survey questionnaire for data collection purpose. In this study, the proposed population are the large firms that are listed under Companies Control Department, Jordan. The unit of analysis of this study is, therefore, organizational level.

4. Instrument development

This study considers a self-administered questionnaire survey instrument as a data collection approach. The questionnaire comprises of two parts. The first part assesses users' perception on all the study constructs, the variables of this study that include relative advantage, compatibility, complexity, security, IT infrastructure, organizational readiness, organizational culture, top management support, competitive pressures, government support, trust, and e-filing adoption are adopted from previous studies, but being modified accordingly to fit the specific context of e-filing adoption in Jordanian private sector. Meanwhile, the second part requests for respondent's profile, i.e. gender, age, qualifications, experience, job description, and workplace. This study will use five-Likert scale to measure the existing study variables.

5. Conclusion

The current research discusses factors affecting e-filing adoption among businesses firms in Jordanian private sector, as most organizations in Jordan do not fully utilize an e-filing system therefore could not realize the benefits of e-filing. The use of e-filing provides the country with more efficient and productive work in the country, through improved performance and efficiency in the private sector, thus increasing the competitiveness of Jordanian organizations while improving and promoting the development of the ICT sector in Jordan. In addition, this study provides critical inputs for the business decision makers and the consultants, particularly in private sector of Jordan. The results of the current research offer several recommendations to the top management

within organizations to enforce higher diffusion of e-filing technologies through determining the factors that influence e-filing.

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