Electronic Payment Adoption in Jordan case of (E-FAWATEERCOM)

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Abstract:

This paper discusses electronic bill presentment and paymentservice, known as e-FAWATEERcom adoption in the Jordan. By utilizing the unified theory of acceptance and use of technology (UTAUT), the paper proposes a framework on the antecedents of e-FAWATEERcom. Four hypothesis were developed on the basis of previous researches. All the four hypothesis were supported in the current research. The proposed framework could give significant practical insight and implication to e-government initiatives worldwide, particularly to Jordanian government in implementing e-FAWATEERCOM.

KEYWORDS: Performance Expectancy- Effort Expectancy -Social Influence- Facilitating Conditions Technology Adoption- Smart-PLS

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1. Introduction

(Bhuasiri, Zo, Lee, &Ciganek,. 2016) .e- government systems effectively deliver public services to citizens as well asimproveproductivity and reduce costs for government departments. A pressing issue for manygovernments is how to expand citizen acceptance of e- government systems (Bhuasiri, et al, 2016).

The internet changed the world today. These quick and recurrent changes contributed in making individuals more acceptable and in line with different and various technological applications around us. At the same time, dealers with this technology became unable to accept the idea of living without daily and effective use of available technological means like PCs and telephones. Most of these devices are connected with the internet services that join people with

The outraging technological advancements have made this world a global village. Most of the nations are interacting across borders for their common set of objectives (Hassan, Abbas, & Zainab, 2018). In this state, the dependence on online resources for faster communication and contact of multiple business features has become crucial and employee engagement based on services environment of an organization (Hassan et al., 2018). Therefore, the financial transactions are being carried out through online sources domestically and worldwide (Hong, Thong, Chasalow, & Dhillon, 2011). Governments worldwide have made considerable investments in information technology (IT) to facilitate online public services for citizens

provided for citizens and business sector, raising the productivity and efficiency of public sector, supporting and facilitating all transactions and public services to be more efficient and competitive ,at the same time, reducing costs and ease of communication with the governmental organizations, providing required information safely and accurately at the right time. The government put a legal legislative in collaboration with the concerned authorities and ministries like Ministry of Information and Communication, Ministry of Justice, Ministry of Finance, and Central Bank of Jordan In order to develop laws and legislations that control reciprocal processto get different governmental services and trying to restrict any violation or possible problems (Jordan.gov, 2015). The government began applying the E- government in accordance with these inclinations; the Jordanian government encouraged the applications and activities of the E-government by developing legislations and laws and providing all necessary facilitations for the concerned and interested authorities (Shannak&Aldhmour, 2009). The most recent service is E-bills (e- Fawateercom) which was launched as one of the e-commerce applications under the umbrella of the services offered by the e-government of Jordan which were applied through the Central Bank in 2012. The electronic payment services (e-bills, e-Fawateercom) through the electronic payment gate which was established in collaboration with (Your Payments Company) for electronic payment as the main operator of the gate, "MIGS" for electronic payment as a subsidiary of Master Card and "Emerging Markets Payments Jordan" (EMP) as the host company. A capable electronic system was established to each other despite far away distances. These changes contributed in transforming communicative patterns as they depend greatly on the internet web and social networks that contributed in building social relationships and facilitating communication process. These days, in the existence of society, school, work environment and commercial organizations, we are obliged to use all communicative technological means to get information, products, building relationships and performing life activities. For the aforementioned reasons, the Jordanian government entered internet technology and its applications to Jordan in the middle of 1990s (Ministry of Information and Communication Technology, MOICT, 2015). This environment witnessed many quick developments and changes in response of the government's vision of the importance of this technology. Since that time, many public and private companies exploited this technology to provide the latest services for its customers to keep pace with the tremendous developments the world witnessed lately in profit and non-profit sectors. In 2001, the government entered the DSL service with a small number of about (128,000) users, to amount 5.7 million users (Internet world stats, 2015). As a result of these procedures, there are a variety of serious steps taken by the Jordanian government in the information and communications sector to develop it to provide the best services for Jordanian people (Jordan.gov, 2015). The most prominent step was the initiation of electronic government project in response to His Majesty King Abdulla II's vision in 2002 by developing a national strategy that aims at improving the quality of services

real threat toall users. Therefore a special law has to be issued to protect theprivacy of citizens and institutions and protection of theirmoral and financial.

Theypresented the barriers from two differentperceptions. The first, government agencies(services providers) have explored the followingbarriers: IT infrastructure; lack of awareness; lack of security and privacy; lack of trust; lack of acomprehensive policy; legal and regulatory framework; insufficient skilled human resources; lackof public-private collaboration/partnerships; lack of training and knowledge transfer; lack of e-Gov transformation and resistance to change; budgets and operating costs and lack of clearstrategy. explored the technological challenges specially issuing andadopting standards for system interoperability and data exchange, setting up secured networksbased on common standards, developing shared applications (e.g. e-procurement), introducingdigital signatures, and authentication. On the other hand, the reasons of non-adoption E-Govservicers from citizens' perspectives referred to prefer face-to-face services, mistrust in e-services ,lack of financial ability to buy computer and subscribe to internet, useless and for reasons ofprivacy and security[9]. Also, inadequate the legislation and regulations governing electronictransactions. Jordanians prefer face-to-face servicesreferred that tocultural factor of favoritism, also known as "wasta". They add more cultural factors suchresistance to change and digital divide which means IT infrastructure centric in main cities andneglect the small and rural areas, financial ability. Notably, the overlap between technological ,cultural and accomplish payment processes by citizens for governmental agencies and joint private sectors by using the internet to facilitate safe electronic payment operations. This system might be used by financial organizations and providers of the offered services. This system works under the umbrella of rules and laws that ensure the secrecy of security and protection of buying procedures and access of services by citizens' subscription in this service. Since the application of this type of services in Jordan, there were few studies that were interested in identifying the factors that affect the attitudes of customers in Jordan by using the electronic payment services in Jordan (CBJ, 2015).

In June 2014, The Central Bank of Jordan (CBJ) officially launched the e-FAWATEERcom portal (www.eFAWATEERcom.jo) that enabled customers inquire about, review and settle their bills online via different paying outlets which has led to an expansion in the use of Internet banking services by organizations and individuals as well (The Central Bank of Jordan, 2018). Jordan government is keen on improving e-government services and aiming to automate procedures to reach an e-government by 2020. As of January 1, 2018, a number of ministries and other public institutions began providing 10 e-services to Jordanian citizens and businesses (The Jordanian E-Government, 2018).

In the case of Jordan, like many developing countries, alack of legal legislation for the protection of any form ofelectronic payment. At the same time taken in considerationcyber-crime, increase with the information technologyrevolution and the use of networks for data transmissionbetween individuals and institutions that form a

inquiring, reviewing their bills electronicallythrough ATM machines, Internet banks, phones, banking branches or any available payment way. Thesepayments can be directed to pay water electricity bills, communication, education, health, taxes, governmentalfines or any service is designed to be able to communicate between several parties like banks owning customers 'accounts and companies providing the service through the internet network, the Central Bank that monitorsmovements of this service in all direction (CBJ, 2015).

2.2 Performance Expectancy (PE)

Performance expectancy can be well-defined as a way of using the system to achieve better job performance (Venkatesh, et al., 2003). Performance expectancy can also be defined as a degree at which individuals can improve their job performance through the system (Venkatesh, et al., 2003). The existing literature suggests that technology adoption is an important factor in diffusion and adoption of information technology underperformance expectancy (Venkatesh, et al., 2003). Moreover, a study by AlAwadhi&Morris, (2008). discovered that performance expectancy, peer influence, effort expectancy and facilitating conditions aredeterminants of service adoption under e-government.

2.3Effort Expectancy (EE)

Effort expectancy has been defined as "the degree of ease associated with the use of the system" Venkatesh, et al., 2003. Venkatesh et al (2003) indicated that effort expectancy has a significant influence on the behavioral intention of information technology user. They added that the relationship between behavioral intention and effort expectancy may be organizational factors that affect e-Gov adoption and success.

2. Literature Review

2.1EFAWATEERCOM

The e-payment process is defined as "the process of transforming any kind of values from the payer to the payeeelectronically (Al-Ma'aitah, 2013). But the e-payment system is defined as "the existence of an e-payment gatein an integrated form and supportive banking services to facilitate payment in current transactions through theinternet and payment by the cell phones (CBJ, 2015). In response to the tremendous developments that theJordanian market witnessed in the field of communications an Information technology, the e-payment serviceswere applied in Jordan, the orientations of the Jordanian government toward the necessity for adopting e-servicesthat can facilitate access for services to improve level of economical and social life. This will be reflected on theeconomical system in general through cash flow processes, promotional campaigns for e-commerce applications ,reducing costs as a result of saving the bills' printed paper (Jordan.gov, 2015). So the government developed ane-payment system called "e-fawateercom" as an electronic website, specialized for inquiries about monetarytransactions electronically without need to field visits by the service providers in different ministries that aim atproviding time and achieving tasks safely and without any efforts and additional costs .e-fawateercom is the first national and governmental service to be applied by the Central Bank in Jordan inconjunction with public and private providers of services and Jordanian Bank in June, 2014 which enablecitizens, users or foreigners who has bank accounts in Jordan from

toward behavior) on their usage intention. Based on the results of their study, the authors argued that the descending sequence of significant determinants of e-government services adoption be as follows: self-efficacy; trust; interpersonal influence; perceived usefulness; compatibility; facilitating condition; perceived risk; external influence, and perceived ease of use. They also suggested that government organizations can set their priority based on the relative significance of these factors.

3. Research Framework and Hypotheses Development

In this study Unified Theory of Acceptance and Use Technology (UTAUT) (Venkatesh et al., 2003). adaptedto theories that underpinned the research framework to e- FAWATEERcom Adoption in Jordan .There could be lots of benefits that can be obtained from UTAUT. Reflecting on the model, the researcher believes that UTAUT is more suitable to large organizations than other models of acceptance technology because the design of this model is based on the data collected from employees' environment (Venkatesh et al., 2003). Additionally, it could successfully predict the adoption of information technology in approximately 70 percent of the cases, compared to 40 percent by other user adoption models (Davis et al., 1989; Venkatesh et al., 2003). Furthermore, the constructs of UTAUT were generated from eight models (Venkatesh et al., 2003). Moreover, the prior scales used to measure the constructs can be combined to come up with new scales that can be applied to the adopt e- FAWATEERcom. Last but not least, this model covers almost the main factors that influence user acceptance of technology such as technology-related and social factors (Venkatesh et al., 2003).

moderated by gender, experience and age (Venkatesh, et al., 2003). Other studies also indicated the possible link between effort expectancy and adoption of e-services alongside other variables (Venkatesh, et al., 2003).

2.4Social Influence (SI)

Social influence is defined as the point at which the individual recognizes the gains others believe she or he must use the new system (Venkatesh, et al., 2003). Social influence can also be defined as the degree to which an individual perceives other person's belief about the system to determine if he or she should use the new system (Venkatesh, et al., 2003).It denotes that the outcome of people's ideas of the view on individuals' use of technology Social influence is a strong predictor of intention to use an information and communication technology (Venkatesh, et al., 2003).Numerous studies have specified that social impact has a straight effect on behavioral intention to accept IT usage (Venkatesh, et al., 2003).

2.5Facilitating Conditions (FC)

Facilitating condition refers to the level to which individuals think that an organizational and technical infrastructure exists to support the use of new information technology (Venkatesh, et al., 2003). Kraemer Gurbaxani&King, (1992). developed a theoretical model to identify the factors that determine public acceptance of e-government services in Taiwan. The results revealed that ease of use; perceived usefulness; perceived risk; compatibility; trust; self-efficacy; external influences; interpersonal influence; and facilitating condition, are important predictors of citizen acceptance of e-government services. The results also show strong evidence of theimpact of citizen attitude toward using online tax filing and payment system (i.e. attitude

influence and facilitating condition one-FAWATEERcom adoption,

The proposed model of this study, therefore, includes influence performance expectancy, effort expectancy, social

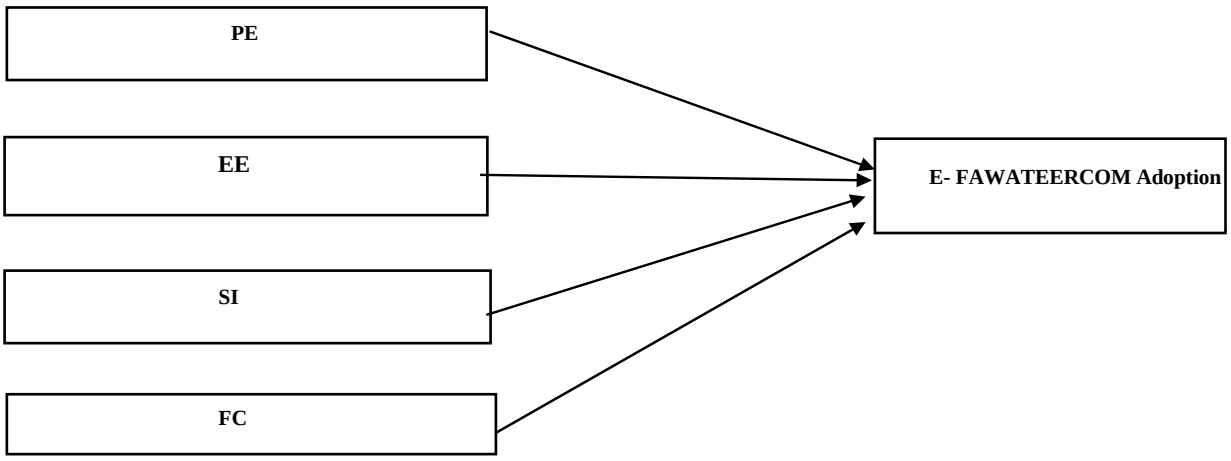

Figure 1. Proposed framework

indicate that such relationship has been explored in Jordanian context. Thus, the following hypothesis is formulated.

H1: There is a positive relationship between performance expectancy and e-FAWATEERcom adoption in Jordan.

In most studies conducted using UTAUT model, effort expectancy was found to influence positively behavioral intention to use information system platform. Venkatesh et al. (2003), indicated that effort expectancy has a significant influence on the user behavioral intention towards the usage of information technology. Despite this theoretical insight, available evidence did not show that the influence of effort expectancy on e- FAWATEERcom adoption in Jordan has been investigated. Hence, the following hypothesis is formulated.

H2: There is a positive relationship between effort expectancy ande-FAWATEERcom adoption in Jordan.

Extant literature revealed that social influence is an important predictor of intention to adopt information technology. A study by Tung and Rieck

In line with the above framework, literature and supporting theories the following hypotheses were developed. This is in congruent to the earlier studies that display that performance expectancy is one of the main factor in acceptance and use of technology (e.g., Venkatesh et al., 2003; Bandyopadhyay and Fraccastoro, 2007; Al-Gahtani et al., 2007; Wang and Shih, 2009; McLeod et al., 2009). However, Carter et al. (2011) found that three out of four UTAUT's constructs that encompass facilitating conditions, performance expectancy, and social influence were significant variables that influence the Americans intention to use the e-filing. UTAUT also suggests that performance expectancy is the strongest predictor of an individual's behavioral intention to use an information system/technology and is significant at all points of measurement for mandatory and voluntary settings (Venkatesh et al., 2003). While theory and literature highlight that performance expectancy predicts intention to adopt e-FAWATEERcom, the evidence did not

H4: There is a positive relationship between facilitating conditions and e-FAWATEERcom adoption in Jordan.

3.0 RESEARCH DESIGN

Questionnaire Design

The questionnaire is divided into two sections. The first section of the questionnaire contains the demographic profile of the respondent. The second section has been assigned to each investigated variable; the endogenous (dependent) variable is e- FAWATEERcom Adoption, while the exogenous (independent) variables are performance expectancy, effort expectancy,social influences,andfacilitating conditions. In the questionnaire, the respondents were being asked to mark their option as a check in the box provided in front of every question and fill it with great care. Each box in front of every question is devising a Seven Likert scale. Every box of Likert scale has a degree of agreement option from one to seven.

Sample and Data Collection Instrument

The population of the current study was all the Government department working in Jordan. The online survey technique was utilized; questionnaires were distributed among 250 government officials. Convenience sampling technique was used because of the Covid-19 situation around the whole world, and it was difficult to collect data. About 215 questionnaires were returned back. After cleaning, 200 questionnaires were retained for further analysis.

4.0 ANALYSIS AND RESULTS

For multiple regression analyses, the PLS-SEM technique was adopted. Smart-PLS 3.2.8 was used to assess the measurement model and the structural model.

(2005) found that perceived benefit, external pressure, and social influence to be positively related to firms' decision to adopt e-government services. The study of Tung and Rieck (2005) also found that e-government adoption is positively associated with perceived benefits, external pressure, and social influence. In fact, it was stressed that social influence is a strong predictor of behavioral intention to use aninformation and communication technology (Dadayan& Ferro, 2005; Venkatesh et al., 2003). Additionally, evidence also revealed a significant relationship between the social influence construct and behavioral intention (Venkatesh et al., 2003). However, evidence in Jordanian context on the influence of social influence on e- FAWATEERcom adoption lacks in the extant literature. Consequently, the following hypothesis is formulated.

H3: There is a positive relationship between social influences and e-FAWATEERcom adoption in Jordan.

Facilitating condition is an important construct in technology adoption models including UTAUT (Venkatesh et al., 2003). Carter et al. (2011) discovered that three out of four UTAUT's constructs that cover facilitating conditions, performance expectancy and social influence were significant factors that affect the Americans' intention to use the e-filing. Wang and Shih (2008) found a positive relationship between facilitating conditions and actual usage of technology. While available evidence depicts the influence of facilitating condition of IT adopting, the evidenceisnot readily available on the influence of facilitating condition on e-FAWATEERcom adoption in Jordan. Thus, the following hypothesis is formulated.

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ranges from 0.733-0.863 and 0.832 - 0.852 respectively, as mentioned in Table 1. The convergent validity, i.e., AVE of all the constructs were also above the threshold value that 0.5. AVE values for all the constructs ranges from 0.583 – 0.636.

Measurement model Assessment

In Smart-PLS, first, we assessed all parameters for model fit, i.e., reliability and validity of the constructs. For reliability, we assessed the composite-reliability (CR) and Cronbach Alpha (CA). The CR and CA value of all the constructs

Table 1. Reliability and Validity

	Cronbach's Alpha	CR	AVE
E- FAWATEERcom Adoption	0.733	0.852	0.636
performance expectancy	0.863	0.846	0.591
effort expectancy	0.815	0.847	0.583
social influences	0.831	0.842	0.612
facilitating conditions	0.822	0.832	0.606

However, discriminant validity (DV) is the "extent to which a construct is truly distinct from other constructs by empirical standards" (Hair et al., 2017, p. 115). However, DV for this model has been measured by Fornell-Larcker Criterion (J. F. Hair et al., 2010), as shown in Table 2. It indicates that "the square root of AVE (diagonal) is higher than the correlations (off-diagonal) for all reflective constructs" (Hair et al., 2017, p. 115)

Table 2. Fornel-Larcker Criterion

	E-FAWATEERcom Adoption	performance expectancy	effort expectancy	social influences	facilitating conditions
E- FAWATEERcom Adoption	0.747				
performance expectancy	0.529	0.772			
effort expectancy	0.656	0.583	0.673		
social influences	0.432	0.511	0.623	0.699	
facilitating conditions	0.521	0.423	0.511	0.603	0.721

FAWATEERcom Adoption. The bootstrapping process was run in Smart-PLS with a significant level of 5% to examine the "P-value" and "T-Value" hypotheses testing, i.e., path coefficient. Table 3 below presents the results of the structural model. The first hypothesis H1 "*There is a positive relationship between performance expectancy and E-FAWATEERcom adoption in Jordan*" was significant at 0.05 level of significance (β=0.428, t=8.546, p<0.01). Based on the analysis, second hypothesis H2 "*There is a*

Structural model Assessment

Once the parameters of the measurement model are achieved, the structural model parameters were assessed. We examined the Coefficient of determination (R^2 value) and hypothesis testing (path coefficient). The R^2 value (coefficient of determination) of this study is 71%, which means that 71% variance is explained by independent variables, i.e., performance expectancy, effort expectancy, social influences, and facilitating conditions, towards dependent variable, i.e.,E-

E- FAWATEERcom adoption in Jordan" also supported (β=0.516, t=10.302, p<0.01). And the final hypothesis H4 "*There is a positive relationship between facilitating conditions and E- FAWATEERcom adoption in Jordan.*" also supported (β=0.516, t=10.302, p<0.01). Similarlythird hypothesis H3 "*There is a positive relationship between social influences and E- FAWATEERcom adoption in Jordan*" also supported (β=0.516, t=10.302, p<0.01). And the final hypothesis H4 "*There is a positive relationship between facilitating conditions and E- FAWATEERcom adoption in Jordan.*" also supported (β=0.516, t=10.302, p<0.01).

Table 3

Direct Hypothesis Testing

	Hypo	Beta	T-Value	P-Value	Remarks
H1	*performance expectancy ->E-FAWATEERcom Adoption*	.428	8.546	0.000*	Supported
H2	*effort expectancy ->E-FAWATEERcom Adoption*	.516	10.302	0.000*	Supported
H3	*social influences ->E-FAWATEERcom Adoption*	.435	8.723	0.000*	Supported
H4	*facilitating conditions ->E-FAWATEERcom Adoption*	.435	8.723	0.000*	Supported

accounting field using UTAUT variables and also on e- FAWATEERcom adoption in the Middle East region, especially in the context of Jordan. Therefore, this study can be considered the first that proposed the assessment of e- FAWATEERcom adoption

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4. Conclusion

This paper provides a theoretical basis on the determinants of e- FAWATEERcom adoption, through the UTAUT theory. The major reason for using UTAUT as underpinning theory is that it is comprehensive in nature and recently more acceptable among researchers compared to other technology acceptance models. The UTAUT framework has some key advantages, among them is that the theory is suitable in the prediction acceptability of information system among employees in large organizations. Currently, the authors are conducting a study and the result is expected to provide some evidence in terms of the impact of e-FAWATEERcomadoption , adding to existing literature which concentrated on the impact of E- FAWATEERcom adoption. Additionally, the study offer contribution to the literature for the fact that relatively few studies were conducted in the

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