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Adoption of E-Government Services in Turkey

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ABSTRACT *Owing to the rapid global growth in the internet and information technology, many governments around the world have transformed their services from the traditional services to electronic means. The purpose of this paper is to investigate the factors that enable end-user adoption of e-government services in Turkey. E-government web portal service level and service quality are critical factors that determine user's adoption and continuance use. A research model is proposed and tested using data based on a sample of 242 individual e-government web portal users in Turkey. Results show that perceived usefulness and user satisfaction affects user's adoption and continuance intention. Implications based on the findings of the study are discussed in term of egovernment web portal implementation.*

Keywords: *E-government, Adoption, Citizens, Turkey, Developing countries*

Türkiye'de E-Devlet Hizmetlerinin Kabulü

ÖZ *Bu çalışmanın temel amacı Türkiye'de e-devlet hizmetlerinin son kullanıcılar tarafından kabulünü etkileyen faktörler ortaya çıkarılmıştır. Araştırma modeli Türkiye'de 242 bireysel e-devlet web portalı kullanıcıları örneklemine bağlı olarak önerilmiştir ve test edilmiştir, araştırma modeli en küçük kareler yöntemi kullanılarak değerlendirilmiştir ve araştırma modeline yapısal model değerlendirilmesi ve yapılar arasındaki ilişkilerin analizi uygulanmıştır. Analiz sonuçları algılanan kullanışlılık ve kullanıcı memnuniyeti kullanıcının kabulünü ve kullanmaya yönelik devam niyetini olumlu ve anlamlı yönde etkilediğini göstermektedir. Araştırma sonuçları, vatandaşların ihtiyaçlarının daha iyi anlaşılmasının geliştirilmesi için politikacılar ve karar vericiler için faydalıdır. Kabul edilen model Türkiye'de e-devlet hizmetlerinin uygulanmasında bir rehber olarak kullanılabilir. Bu çalışma hükümetin, insanların hizmetlerin farkında olduğundan ve bunları kullandığından emin olmak için kapsamlı reklam kampanyaları düzenlemesi gerektiğini önermektedir. Bu çalışma, hükümetin, hizmetlerin bilinirliğini artırmaya, vatandaşlara yararlarını göstermeye ve sisteme güvenin teşvik edilmesine önem vermesi gerektiğini göstermektedir.*

Anahtar Kelimeler: *E-Devlet, Kabül (Benimseme), Vatandaşlar, Türkiye, Gelişmekte olan ülkeler*

Introduction

The acceleration of the internet and the developments of Information and Communication Technologies (ICTs) provides new means for governments to attain the modernization and serve their citizens via internet. With the rise of the e-government concept, public services around the World has been developed significantly by means of these developments in ICT field, are moving away from the conventional form of government administration to electronic

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forms, because they realise the importance of making services more efficient and accessible to enhance the efficiency of public services constitutes the concept of e-government by using ICT's (Irani et al., 2007; Kamal et al., 2009; Sarikas and Weerakkody, 2007). The Utilization of Information and Communication Technologies (ICT) in administration for delivering services with the ultimate aim of generating value for the society is refered as the umbrella term of e-government. The World Bank (2012) defines e-government as: […] the use by government agencies of information technologies (such as Wide Area Networks, the Internet, and mobile computing) that have the ability to transform relations with citizens, businesses, and other arms of government. E-government presents citizens certain advantages, such as transparency; cost and time reduction through efficient services; simplification of procedures; improved office management; friendly attitudes of personnel; increase in service quality and speed and closer citizen-government engagement; ease of access; efficient service delivery; greater variety of service offerings; reduced corruption and higher revenues (Atkinson and Castro, 2008; Jaeger, 2003; Laudon and Laudon, 2009; Reffat, 2003). A widespread recognition of the benefits of implementing information and communication technologies (ICT) in government services has resulted into large-scale investments in ICT by the governments of a number of countries across the globe. Today, the use of e-government services is widespread in both developed and developing countries (United Nations, 2012). As people have become more internet-apprehension, citizens are reckon on superior criteria of e-services from government authorities. Governments around the world are propeled in boosting interaction with citizens, because of the low-priced and availability of ICT have remarked by researchers (Gauld et al., 2010; Irani et al., 2007). The usage of information and communication technologies is entailed to deliver a range of government services in a customized and interactive manner using optimum resource levels. E-government initiatives are being undertaken in public sectors in both developed and developing countries for the purposes of transparency, responsiveness and efficiency. E-government is considered to be an effective and efficient approach by governments to connect with users (Zhao et al., 2012). The higher level of transparency and user involvement is the mechanism to enhance the trust in government services. E-government projects have not been successful in many countries, although e-government services offer great advantages, especially developing countries are still affected by a lack of infrastructure, awareness, human resource capacity, technical skills, inexpensive technology and effective government regulation to utilize e-government's offerings (AlAwadhi and Morris, 2008; Alshehri et al., 2012; Carter and Weerakkody, 2008; Dwivedi and Irani, 2009; Gupta et al., 2008; Hwang, Li, Shen, & Chu, 2004; Irani et al., 2007; Rehman et al., 2012; UN, 2012; Verdegem and Verleye, 2009; Weerakkody et al., 2011).

Two distinct research approach can be identified based on analysing the existing literature on e-government. The first is viewing e-government from the supply side and the second from the demand side. The priority of e-government research arises to be on the supply side (Reddick, 2005). Supply side research has evaluated affairs in context of e-government development and delivery (Gauld et al., 2010; Heeks and Bailur, 2007; Reddick, 2005). Among the several variables affecting adoption of e-government, the quality of e-government services as perceived by the user can constitute one of the major determinants. The majority of the works related to ICT integration in e-government, however, study technology adoption (Davis, 1989; Davis et al., 1989; Venkatesh et al., 2003). In the literature, there are various

adoption theories and models which are proposed to explain the acceptance/adoption of e-government services. Most of them are combined with previous models or extended them with new factors based on supply side or demand side. Furthermore, e-government works have revealed that an overwhelmingly portion of the published studies have been fulfilled in the developed countries, such as the USA, the UK, Australia, New Zealand and Korean (Carter and Weerakkody, 2008; Gauld et al., 2010; Il et al., 2011; Schaupp et al., 2010; Wang and Shih, 2009). Even though earlier studies appraised largely on the supply side, the demand side affairs have begun to attain more notice. Some researchers have stated that e-government literature disregards the fact that citizens obliged to use these systems (Heeks and Bailur, 2007; Verdegem and Verleye, 2009). The results of studies have shown that many governments still face the problem of a low-level of adoption of e-government services by their citizens (Bèlanger and Carter, 2008; Carter and Bèlanger, 2005; Gupta et al., 2008; Heeks, 2008; Kumar et al., 2007, UN, 2012), which includes inadequacy of access to e-government services, trust, security and the digital divide (Harby et al., 2012; Schaupp et al., 2010; UN, 2012; Venkatesh et al., 2011). The models and theories that investigate the adoption and acceptance of information systems literature utilizes technology acceptance models (TAMs) and theories. These covers theory of reason action (TRA), the Technology Acceptance Model (TAM), the motivational model (MM), the model of PC utilization (MPCU), the diffusion of innovations, the theory of planned behaviour (TPB), Diffusion Theory (IDT), social cognitive theory (SCT) and the unified theory of acceptance and use of technology (UTAUT). Excessive e-government works have been utilized by technology adoption models (Ahmad et al., 2012; Alhujran and Chatfield, 2008; Carter and Weerakkody, 2008; Harby et al., 2012; Rehman et al., 2012; Schaupp et al., 2010; Venkatesh et al., 2011; Venkatesh et al., 2003; Venkatesh, 2011).

A range of determinants that ease of use, perceived risk, reliability, relative advantage, trust, image, facilitating conditions and cultural differences affect the adoption of e-government services, which has been distinguished and examined by researchers. More specific issues, such as gender differences, lack of services and security awareness, self-efficacy and computer anxiety and technology adoption have been assessed by some other studies (Alkhattabi et al., 2012; El-Haddadeh et al., 2012; Nysveen et al., 2005; Panagiotis et al., 2012; Rehman et al., 2012; Venkatesh et al., 2003). As previously mentioned, less research has been done on services adoption in developing countries, such as Turkey, from a citizen perspective in context of Turkey although the e-government was originated almost two decades ago.

Literature Review

The failure of several e-government projects owing to poor acceptance of electronic technologies from the citizen's perspective resulted in an increased attention to the problems in this area. The e-government implementation lessons of advanced nations (early adopters) can provide insightful lessons to developing nations, which are struggling to cope with the challenges and opportunities that modern technology has to offer. A variety of works have been carried out the aim of refering e-government endeavors between advanced and developing nations to investigate e-government adoption factors and barriers to dissemination (Chen et al., 2006; Lee et al., 2005). Important studies in the area of e-government service adoption include (Alomari et al., 2012; Chong, 2012; Shareef et al., 2011). Much of the studies refer to early adopters of e-government and developing nations consider e-government adoption aspects and obstacles to dispersion (Al-Shihi and McGrath, 2006; Chen et al., 2006; Lee et al., 2005). The adoption of e-government services in terms of range of services, frequency

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and number of users can depend on the user's perception of the service experience and its benefits. Venkatesh et al. (2012) mention the need to integrate user perceived quality perspective in design of self-service technologies. Quality of service is a key determinant of the overall service experience, and the benefits of the service can be evaluated by the user post-experience. Poor service experience may result in non-completion of the service transaction by the user, resulting in a lack of awareness of the benefits and a higher likelihood of negative word-of-mouth advertising by the user. Quality of service has received considerable interest in the literature.

Service quality has been studied from government perspective and citizen/user perspective (Irani et al., 2012). Most of the studies in this area have addressed the adoption issues from government's perspective and not as much from the user's perspective (Al-Mamari et al., 2013; Lee et al., 2011). According to Kumar et al. (2007), adoption is "a simple decision of using, or not using, online services". Researchers have adopted various forms of TAM in order to investigate e-government adoption in different perspectives. A number of studies have investigated the adoption of e-government services in developed countries, for example, Australia, UK, Russia, USA, China, European Union, Hong Kong, New Zealand and Singapore (Shackleton, Fisher and Dawson, 2004; Tan et al., 2005), whereas relatively little has been undertaken in developing countries (Al-Shihi, 2005; Titah and Barki, 2006). Lebanon (Charbaji and Mikdashi, 2003); USA (Schaupp and Carter, 2005); Turkey (Akman et al., 2005); Oman (Al-Shihi, 2005); USA (Dimitrova and Chen, 2006); Australia (Titah and Barki, 2006); Netherlands (Horst et al., 2007); India (Sahu and Gupta, 2007); Kuwait (AlAwadhi & Morris, 2008); Romania (Colesca and Dobrica, 2008); Cambodia (Sang et al., 2009); Zambia (Bwalya, 2009); the state of Qatar (Al-Shafi and Weerakkody, 2009); Malaysia (Lean et al., 2009); Tanzania (Yonazi et al., 2010); United Arab Emirates (UAE) (Mouakket, 2010); Qatar (Al-Shafi & Weerakkody, 2010); Jordan (Al-Shibly and Tadros (2010); Malaysia (Suki and Ramayah, 2010); Jordan (AL-Soud and Nakata, 2010); Indonesia (Rokhman, 2011); Kingdom of Saudi Arabia (Alshehri, Drew, & AlGhamdi, 2013); Taiwan (Hsieh et al., 2013); Greece (Voutinioti, 2013); Jordan (Al-Soud et al., 2014) examined e-government adoption through technology adoption models is of a high interest.

Methodology

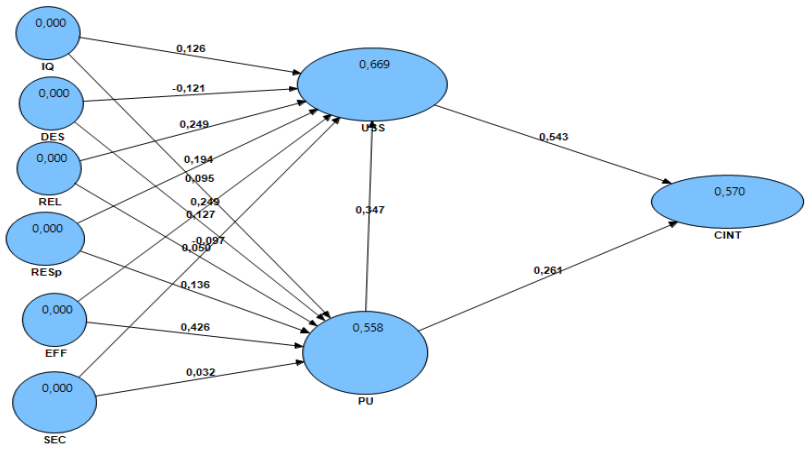
A cross-sectional research design is used for the study. Measurement for each variables included in the research model were developed and the questions associated with each variable was adapted from previous studies. The target respondents consisted of individuals who had used e-Government services in Turkey. Data were collected by using an online questionnaire. A survey questionnaire was developed to explore and understand the quality determinants of e-government services' adoption using Google docs. The survey was developed in Turkish language. The survey was translated into Turkish language by a language instructor to maintain consistency of words. The survey was pre-tested with 30 users of e-government services.

Measurement

A survey instrument was constructed by adapting measures from prior research to ensure the content validity of the scales. The measurement of Information quality (IQ) adapted from the scale developed by Ding et al., (2011), Doll and Torkzadeh (1988), Stephens (2004), Wan (2000),

Wang and Liao (2008), Wixom and Todd (2005), Design and functions (DES) Aladwani and Palvia (2002), Collier and Bienstock (2006), Liu et al. (2009), Parasuraman et al., (2005), Wangpipatwong et al. (2009), Wolfinbarger and Gilly (2003) Reliability (REL) Aladwani and Palvia (2002), Chang et al. (2005), Ding et al. (2011), Parasuraman et al. (2005), Wan (2000), Wangpipatwong et al. (2009), Wolfinbarger and Gilly (2003) Security and privacy protection (SEC) Adapted from Belanger and Carter (2005), Collier and Bienstock (2006), Janda et al. (2002), Parasuraman et al., (2005), Rehman et al., (2012) System responsiveness (RESP) Collier and Bienstock (2006) and Lee and Lin (2005) Efficiency adopted by Sharma et al., (2013) and Sohail and Shaikh (2008). Perceived usefulness (PU) Carter and Belanger (2005), Davis (1989), Gefen and Straub (2000) User satisfaction (USS), Lee and Lin (2005), Wang and Liao (2008), Yang et al. (2005) Continuance intention (CINT) Chong et al. (2012), Hsu and Chiu (2004) and Roca and Chiu (2006). Finally, the survey instrument used in this study consisted of a total of 50 items related to the nine constructs of the research model. The items were measured using a five-point Likert-type scale for all constructs.

Figure 1. Proposed research model



Sample and Data Collection

Since the targeted population for the study is individual citizen who has used e-government web portal previously, it was decided that an online data collection approach be used since the potential respondents would have had access to the internet. Data were collected over a 3-week period. A snowball sampling method was applied. A total of 263 surveys were collected from the participants, of which 242 were found to be usable in the data analysis.

The descriptive statistics of the sample showed that females account for 42 and males 58 percent of the e-government web portal users. About half of the respondents were between 20-30 years of age, the percent of 8 was in the age group below 18 years, 25 percent of respondents were between 31-40 years of age, 6 percent of respondents were between 41-50 years of age and 7 percent was in the age group 51 and + years. In this context, younger generation prefers to use e-government services compared to older age groups. In addition, majority respondents claimed that they use internet for daily (94 percent), followed by less often (6 percent). The majority of respondents were high school degree and represented 34%. followed by vocational school degree (29 percent), bachelor degree (19 percent), master degree (13 percent), Ph.D. degree (5 percent).

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Statistical Analysis and Hypotheses Testing

The Research model utilized partial least squares (PLS) to understand the relations among the sets of observed variables using SmartPLS software 2.0 (M3) (Ringle, Wende, & Will, 2005) provides the software to conduct the analysis. A variance-based PLS approach is preferable to covariance-based methods, since PLS impose less strict restrictions on sample size and distribution (Chin et al., 2003). PLS is a SEM technique that has been widely used for theory testing, structural model and validation (Chin, 1998). In addition, PLS are an adequate method to resolve multicollinearity problems that frequently appear inmultivariate regression analysis, since PLS transform predictor variables to an orthogonal component (Chin et al., 2003). Although the estimation of the measurement and the structural parameters occurs simultaneously, the application of a PLS model typically performs data analysis in accordance with a two-stage. The first step was to test the content, convergent, and discriminant validity of constructs using the measurement model, while the second step was to test the structural model and hypotheses.

Measurement Model

Assessment of convergent and discriminant validity determines the validation of the measurement model. Convergent validity of the scales is contingent on the fulfillment of three criteria (Fornell & Larker, 1981; Hair et al., 1998): (1) all indicator loadings should exceed 0.65 (2) composite reliabilities should exceed 0.80; (3) the average variance extracted (AVE) for each construct should exceed 0.50. and (4) Cronbach alpha values should exceed the cut-off value of .70. As Table 1 shows, all the indicator loadings are above the recommended threshold, the CR values range from 0.92 to 0.97, and the AVE ranges from 0.59 to 0.92. Indicators clearly exceeds the minimum recommended level of 0.70 for Cronbach's alpha (Nunnally and Bernstein, 1994), respectively. According to the suggested four cut-off points, which are excellent (0.90 and above), high (0.70-0.90), high moderate (0.50-0.70), and low (0.50 and below), by Hinton, Brownlow, McMurray, and Cozens (2004), out of 9 constructs in this research model, 8 possess excellent reliability and the remaining 1 possess high reliability. The high Cronbach's Alpha values indicate that all constructs are internally consistent; that is to say, items belonging to same construct are, in fact, measuring the same content. To evaluate discriminant validity, Fornell and Larcker (1981) suggested that the value of CR for each construct must exceed 0.70 while the value of the AVE must exceed 0.50 for the convergent validity to be assured. The CR and AVE values for the constructs included in the study model are all above acceptable levels.

Table 1: Descriptive statistics and convergent and discriminant validity.

Construct	Range of loadings	CR[a]	AVE[b]	A[c]	Correlation between constructs [d]								
					CINT	**DES**	**EFF**	**IQ**	**PU**	**REL**	**RESp**	**SEC**	**USS**
CINT	0,91-0,95	0,96	0,87	0,93	**1**								
DES	0,72-0,81	0,92	0,59	0,90	0,64	**1**							
EFF	0,92-0,94	0,97	0,87	0,95	0,69	0,70	**1**						
IQ	0,81-0,88	0,92	0,73	0,88	0,58	0,70	0,49	**1**					
PU	0,88-0,93	0,95	0,81	0,92	0,70	0,68	0,74	0,55	**1**				
REL	0,78-0,88	0,95	0,70	0,93	0,71	0,84	0,71	0,73	0,68	**1**			
RESp	0,81-0,90	0,96	0,74	0,95	0,63	0,76	0,78	0,61	0,69	0,73	**1**		
SEC	0,77-0,91	0,97	0,76	0,96	0,64	0,72	0,67	0,72	0,63	0,76	0,77	**1**	
USS	0,95-0,96	0,97	0,92	0,96	0,76	0,66	0,75	0,59	0,77	0,72	0,72	0,63	**1**

[a]Composite reliability (CR)=(square of the summation of the factor loadings)/{(square of the summation of the factor loadings)+(square of the summation of the error variances)}.
[b]Average variance extracted (AVE)=(summation of the square of the factor loadings)/{(summation of the square of the factor loadings)+(summation of the error variances)}.
[c]Cronbach's alpha.
[d] The square roots of the constructs' AVE values are shown in the diagonal line (in bold); non-diagonal elements are latent variable correlations.

Structural Model

Prior to the hypotheses testing, the quality of the structural model assessed based on cross validation (CV)-communality and (CV)-redundancy indices. The mean of the CV-communality indices confirms the global quality of the structural model if the indices are positive for all the blocks, taking into account the measurement model as a whole. In addition, the quality of each structural equation evaluated by the CV-redundancy index, which offers a metric. This index should be positive for all endogenous constructs (Tenenhaus et al., 2008). For this study, the model demonstrates adequate predictive validity and fit, since all the latent variables have positive values for cross validation (CV)-redundancy and (CV)-communality indexes (Table 2).

After analyzing the quality of the structural equation, the next step is to test the relations between all constructs. In addition to PLS Algorithm, the bootstrapping procedure was used and 242 cases were selected, 5000 samples, and the no sign changes option to evaluate the significance of the path coefficients (Hair et al., 2012). Consistent with Chin (1998), bootstrapping (5000 subsamples) generates standard errors and t-values. The results of the structural model analysis, showing the path coefficients along with their significance levels. Table 3 shows the decomposition of effects. The results of the statistical model offer support for H2, H8, H9, H10, H11, H12, H14 and H15, and fail to corroborate H1 H3, H4, H5, H6, H7 and H13.

Contrary to expectations, nevertheless, results fail to confirm that design and functions has a direct relationship with the perceived uselfulness, as the effect is statistically non-significant (path coefficient = 0.12; t value=1.13; $p<0.05$). The results thus lead to the rejection of H1. H2 predicts a positive impact from efficiency on perceived uselfulness, which the analysis confirms. Diamantopoulos and Siguaw (2000) classify path coefficients that are below 0.30 as (causing) moderate (effects), from 0.30 to 0.60 as strong, and above 0.60 as very strong. Therefore, efficiency demonstrate a strong, positive, significant effect on perceived uselfulness (path coefficient = 0.45, t value=5.19 $p < 0.001$.). The more a website develops efficient services, the better its perceived uselfulness.

Results also fail to yield empirical evidence for the relationships in H3 and H4, due to the non-significant t values for the parameters (path coefficients = 0.11; t value=1.18 and 0.10; t value=0.85, $p<0.05$, respectively). In conclusion, information quality do not have a relationship with perceived uselfulness, and either reliability. Similar results emerge for responsiveness and security, which also have no positive, significant effect on perceived uselfulness (path coefficient = 0.11, t value= 1.10; 0.03 t value=0.31 $p <0.05$). The results thus lead to the rejection of H5 and H6. Nevertheless, results fail to confirm that design has an user satisfaction, as the effect is statistically non-significant (path coefficient = –0.15; t value=1.58; $p<0.05$). The results thus lead to the rejection of H7.

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On the other hand, H8, H9, H10, H11 and H12 obtains empirical support from the data. Therefore, the efficiency, information quality, perceived usefulness, reliability and responsiveness of a website toward user satisfaction (path coefficient = 0.26, t value=2.17, p <0.01), (path coefficient = 0.13, t value=2.02 p <0.01), (path coefficient =0.37, t value=4.36 p<0.001), (path coefficient =0.27, t value=2.76 p<0.001) and (path coefficient =0.19, t value=1.89 p<0.01). Results also fail to yield empirical evidence for the relationship in H13, due to the non-significant t values for the parameters (path coefficients = -0.11; t value=1.19). In conclusion, security do not have a relationship with user satisfaction.

Finally, results also confirm the effect of user satisfaction on continuance intention. Therefore, efficiency demonstrate a strong, positive, significant effect on perceived uselfulness H13 (path coefficient = 0.55, t value=6.94 p < 0.001.). The more a person satisfy, the better its intention to continue. H14 obtains empirical support from the data. Therefore, perceived uselfulness demonstrate a strong, positive, significant effect on continuance intention (path coefficient = 0.28, t value=3.8, p <0.001),

Thus, the explanatory power of information quality, design and functions, reliability, responsiveness, efficiency and security variables together explained 62% of the variance in perceived uselfulness, 71% of the variance in user satisfaction. All eight variables together explained 61% of the variance in continuance intention.

Table 2 Quality of structural equation.

CV-communality		CV-redundancy
CINT	0,87	0,52
DES	0,59	0,59
EFF	0,87	0,87
IQ	0,73	0,73
PU	0,81	0,50
REL	0,70	0,70
RESp	0,74	0,74
SEC	0,76	0,76
USS	0,92	0,65

Table 3. Results of hypothesis testing.

Hypotheses and path	β path coef.	*t*-value[a]	R^2
H1 DES -> PU	0,12	1,13	0,62
H2 EFF -> PU	0,45	5,19***	
H3 IQ -> PU	0,11	1,28	
H4 REL -> PU	0,10	0,85	
H5 RESp -> PU	0,11	1,10	
H6 SEC -> PU	0,03	0,31	
H7 DES -> USS	-0,15	1,58	0,71
H8 EFF -> USS	0,26	2,17**	
H9 IQ -> USS	0,13	2,02**	
H10 PU -> USS	0,37	4,36***	
H11 REL -> USS	0,27	2,76***	
H12 RESp -> USS	0,19	1,89*	
H13 SEC -> USS	-0,11	1,19	
H14 USS -> CINT	0,55	6,94***	0,61
H15 PU -> CINT	0,28	3,38***	

[a] t-values for two-tailed test:
* 1.65 (sig. level 10%).

** 1.96 (sig. level=5%).
*** t-value 2.58 (sig. level = 1%) (Hair et al., 2011).
Notes:***p<0.01, **p<0.05, *p<0.1 (two-sided).

Regarding model quality, Wetzels et al. (2009) provide a global fit (GoF) measure for PLS path modeling and derive a GoF measure with effect sizes for R^2 by substituting the minimum average AVE of 0.50. The GoF measures have been suggested as baseline values for validating the PLS model globally (the cut value of GoFsmall=0.1, GoFmedium=0.25, and GoFlarge=0.36) (Tenenhaus et al., 2005; Wetzels et al., 2009). The research model obtained a GoF value of 0.709, which is greater than the cut-off value of 0.36 and is considered an adequate GoF. These results demonstrate this model performs well (see Table 4).

Table 4. Structural Model.

Fit measures	Endogenous construct	Final Model
R^2	Perceived usefulness	0.62
	User satisfaction	0.71
	Continuance intention	0.61
GoF		0,709

Note. GoF = √ Average Communality x Average R^2

Conclusion, Limitations and Future Research

In this study, responsiveness, reliability, security, design, information quality and efficiency were statistically significant predictors of adoption in regression model. Reliability has a positive and significant effect on willingness to use e-government services in this study. This result is consistent with the study (Liao and Cheung, 2008), which shows that perceived reliability is a positive determinant of consumer satisfaction in Internet banking. The services offered by Internet banking have many similarities with the e-government services, particularly in terms of flow of personal and sensitive data. The reliability of the service has a clear effect on the acceptance of quality of the e-government services in Turkey. Reliability implies the degree of readiness of the Web site for businesses. Higher reliability means time reduction, which includes enhanced speed of downloading and updating information and a lower probability of service failure. Furthermore, higher reliability can result in higher customer satisfaction. A study conducted by Griffith and Krampf (1998) have also found responsiveness as a key indicator of service quality in online retailing users. Following responsiveness, "reliability" is the most important construct affecting the acceptance of quality of the e-government services in Turkey. Reliability implies that the Web sites are available for business; this includes quick uploading of the right Web site contents and consistent execution of intended functionality by the Web page. The findings of the present study are in line with a study conducted done by Wolfinbarger and Gilly (2003), who found reliability to be a strong predictor of customer satisfaction and quality and the second strongest predictor of loyalty/ intentions to repurchase through a Web site. Reliability has also been observed as the most important factor in electronic service quality (Palmer et al., 2000). The third important construct was "security", which involves saving users from the risk of fraud and financial loss. The lower importance for security compared to reliability and responsiveness may be ascribed to the lower financial risk associated with government transactions, timely transaction completion and cancellation reports and higher level of confidence of users in the systems offering these services. The fourth construct deemed important in the evaluation of the quality of the e-government services in Turkey is "efficiency". Efficiency in e-government services is the simplicity and organization of the Web site, which, in turn, attracts more users toward the use of e-government portals. Ease of service quality is also an important aspect of the efficiency. This result is consistent with the study (Liao and Cheung, 2008), which shows that perceived reliability is a positive determinant of consumer satisfaction in Internet banking. One of the vital predictors of the willingness to use e-government services is security is Turkey. This finding is consistent with the studies of Santos (2003) and Liao and Cheung (2008) on the service quality modeling of e-services. Security measures protect the e-government Web site users from the deception and risk of loss, and hence, security is considered one of the important predictors of the use of e-government services. More resources should be allocated to secure e-government Web site.

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Efficiency is another important predictor of the use of e-government services in Turkey. It has a positive relationship with the use of e-government services. This finding is consistent with the study (Santos, 2003), which shows that the efficiency is an incubative dimension of e-commerce. In e-government services, it is commonly expected that efforts in the use of Web site are minimum and, hence, can attract more users. Responsiveness is also positively associated with the use of e-government services in Turkey. This finding is similar to the study (Liao and Cheung, 2008), which also asserts that responsiveness is a key determinant in the customer satisfaction of Internet banking. Internet service largely depends on the satisfaction of users. In case of e-government services too, the satisfaction resulting from the use of e-government services can depend on the responsiveness, which can be improved by reducing the time lag in the help provided to users by service providers.

This study is of paramount importance to managers of the e-government portals in Turkey and will help in understanding and predicting the common perception of end users. Although it is not advisable to generalize results of this study to the whole of Turkey owing to the small sample size and limited geographical area covered by the study, the study can prove useful to decision-makers in highlighting potential areas where they need to focus for enhancing adoption of e-government services. The improvement in adoption of e-government portals has become extremely important considering the high priority assigned by the government to achieve better economic and social returns on the significant investments in the development e-government technology infrastructure over the past fifteen years. Further research can be conducted using cluster sampling and expanding the geographical scope of the study to all major cities of Turkey.

REFERENCES

1. Akman I, Mishra Y, Arifoglu A. E-government: a global view an empirical evaluation of some attributes of citizens. Government Information Quarterly. 2005;22,2:239-257.
2. AlAwadhi S, Morris A. The use of the UTAUT model in the adoption of egovernment services in Kuwait. In Hawaii international conference on system sciences, proceedings of the 41st annual. IEEE. 2008;219-219.
3. Alshehri M, Drew S, AlGhamdi R. Analysis of citizens acceptance for egovernment Services: Applying the UTAUT model. arXiv preprint arXiv:2013;1304.3157.
4. Al-Shafi S, Weerakkody V. Factors affecting e-government adoption in the State of Qatar. The Proceedings of the European Mediterranean Conference on Information Systems, Dhabi, UAE.2009;1-23.
5. Al-Shafi S, Weerakkody V. Understanding citizens' behavioral intention in the adoption of e-government services in the state of Qatar. In ECIS proceedings.2009
6. Alshehri M, Drew S, Alhussain T, Alghamdi R. The Effect of Website Quality on Adoption of e-Government Service: An Empirical Study Applying UTAUT Model Using SEM, 2012, December 2-5, 23rd Australasian Conference on Information Systems, Geelong, Australia.2012.
7. Al-Shihi H. E-government development adoption dilemma: Oman case study. 6th International We-B (Working for e-Business) Conference, Victoria University, Melbourne, Australia, 2005.
8. Al Shibly H, Tadros I. Employee's perceptions towards electronic government in Jordan. European Journal of Scientific Research.2010;48,2:169-176.
9. Al-Soud A.H, Al-Yaseen Al-Jaghoub S. Jordan's e-Government at the crossroads. Transforming Government: People, Process Policy. 2014;8,4:597-619.
10. Al-Soud A, Nakata K. Evaluating e-government websites in Jordan: accessibility, usability, transparency responsiveness. Proceedings of the 2010 International Conference on Progress in Informatics Computing (PIC-2010), Shanghai.2010;2:761-765.

11. Ahmad M.O, Jouni M, Markku O. Factors influencing the adoption of e-government services in Pakistan. Proceedings of the European, Mediterranean and Middle Eastern Conference on Information Systems (EMCIS), 2012;Paper 79.
12. Aladwani A.M, Palvia P. C. Developing and validating an instrument formeasuring user-perceived web quality. Information Management, 2002;39: 467–476.
13. AlAwadhi S, Morris A. The use of the UTAUT model in adoption of e-government services in Kuwait. Proceedings of the 41st HICSS, 2008.
14. Alhujran O, Chatfield A. Toward a model for e-government services adoption: the case of Jordan. Proceedings of the 8th European Conference on e-Government, Ecole Polytechnique, Lausanne, 2008:13-22.
15. Alkhattabi M, Neagu D, Cullen A. User perceptions of information quality in e-learning systems: a gender and cultural perspective. in Pande, R. and van der Weide, T. (Eds), Globalization, Technology Diffusion and Gender Disparity: Social Impacts of ICTs, IGI Global, Hershey, PA, 2012: 138-145.
16. Al-Mamari Q, Corbitt B, Gekara V.O. E-Government adoption in Oman: motivating factors from a government perspective. Transforming Government: People, Process and Policy, 2013;7,2:199-224.
17. Alomari M, Woods P, Sandhu K. Predictors for e-Government adoption in Jordan: deployment of an empirical evaluation based on a citizen-centric approach. Information Technology & People, 2012;25, 2:207-234.
18. Alshehri M, Steve D, Osama A. A comprehensive analysis of e-government services adoption in Saudi Arabia: obstacles and challenges. International Journal of Advanced Computer Science and Applications, 2012;3, 2.
19. Al-Shihi H, McGrath M. E-government adoption and diffusion in less-developed nations: lessons from the West. Proceedings of the 7th International We-B (Working for e-Business) Conference, Victoria University, Melbourne;2006.
20. Atkinson R. D, Castro D. Digital quality of life: Understanding the personal and social benefits of the information technology revolution, 2008.
21. Bèlanger F, Carter L. Trust and risk in e-government adoption. Proceedings of the Eleventh Americas Conference on Information Systems, Omaha, NE, USA;2005.
22. Bèlanger F, Carter L. Trust and risk in e-government adoption. Journal of Strategic Information Systems, 2008;17, 2: 165-176.
23. Bwalya K. J. Factors affecting adoption of e-government in Zambia. The Electronic Journal of Information Systems in Developing Countries, 2009;38.
24. Carter L, Weerakkody V. E-government adoption: a culture comparison. Information Systems Frontiers, 2008;10, 4:473-482.
25. Carter L, Bèlanger F. The utilization of e-government services: citizen trust, innovation and acceptance factors. Information Systems Journal, 2005;15,1: 5-25.
26. Chang I.C, Li Y.C, Hung W.F, Hwang H.G. An Empirical Study on the Impact of Quality Antecedents on Tax Payers' Acceptance of Internet Tax-Filing Systems. Government Information Quarterly, 2005;22,3:389-410.
27. Charbaji A, Mikdashi T. A path analytic study of the attitude towards e-government in Lebanon. Corporate Governance, 2003;3,1:76-82.
28. Chen Y.N, Chen H.M, Huang W, Ching R.K.H. E-Government strategies in developed and developing countries: an implementation framework and case study. Journal of Global Information Management, 2006;1,14:23-46.
29. Chin W.W.The partial least squares approach to structural equation modeling. In G. A. Marcoulides (Ed.), Modern methods for business research (pp. 295–336). Mahwah, NJ: Lawrence Erlbaum Associates Publisher;1998.

30. Chin W.W, Marcolin B.L, Newsted P. R. A partial least squares latent variable modelling approach for measuring interaction effects: Results from a Monte Carlo simulation study and an electronic mail emotion/adoption study. Information Systems Research, 2003;14,2:189–217.
31. Chong A.Y.L, Chan F.T, Ooi K.B. Predicting consumer decisions to adopt mobile commerce: cross country empirical examination between China and Malaysia. Decision Support Systems, 2012;53,1:34-43.
32. Chong A.Y.L. Predicting m-commerce adoption determinants: a neural network approach. Expert Systems with Applications, 2012;40,2:523-530.
33. Colesca S, Dobrica L. Adoption use of e-government services: The case of Romania. Journal of Applied Research Technology, 2008;6,3:204-217.
34. Collier J. E, Bienstock C. C. Measuring service quality in e-retailing. Journalof Service Research, 2006;8,3:260–275.
35. Davis F.D. Perceived usefulness, perceived ease of use, and user acceptance of information technology. MIS Quarterly, 1989;13,3:319-340.
36. Davis F.D, Bagozzi R.P, Warshaw P.R. User acceptance of computer technology: a comparison of two theoretical models. Management Science, 1989;35, 8:982-1003.
37. Diamantopoulos A, Siguaw J. A. Introducing LISREL. London: SAGE Publications;2000.
38. Dimitrova V, Chen Y. Profiling the adopters of e-government information services: the influence of psychological characteristics, civic mindedness, information channels. Social Science Computer Review, 2006;24,2:172-188.
39. Ding D.X, Hu P.J.H, Sheng O.R.L. E-SELFQUAL: a scale for measuring online self-service quality. Journal of Business Research, 2011;64,5:508–515.
40. Doll W.J, Torkzadeh G. The measurement of end-user computing satisfaction. MIS Quarterly,1988; 12,2:259-274.
41. Dwivedi Y, Irani Z. Understanding the adopters and non-adopters of broadband. Communications of the ACM, 2009;52,1:122-125.
42. El-Haddadeh R, Tsohou A, Karyda M. Implementation challenges for information security awareness initiatives in e-government. ECIS Proceedings, Paper 179;2012.
43. Fornell C, Larker D. F. Evaluating structural equation models with unobservable variables and measurement error. Journal of Marketing Research, 1981;18,1:39–50.
44. Gauld R, Goldfinch S, Horsburgh S. Do they want it? Do they use it? The 'demand-side' of e-government in Australia and New Zealand. Government Information Quarterly, 2010;27,2:177-186.
45. Gefen D, Straub D. The Relative Importance of Perceived Ease of Use in IS Adoption: A Study of ECommerce Adoption. Journal of the Association for Information Systems, 2000;1,8:1-28.
46. Griffith D.A, Krampf R.A. An examination of the web based strategies of the top 100 US retailers. Journal of Marketing Theory and Practice, 1998;6,3:12-23.
47. Gupta B, Dasgupta S, Gupta A. Adoption of ICT in a government organization in a developing country: an empirical study. Journal of Strategic Information Systems, 2008;17,2:140-154.
48. Hair J. F, Anderson R. E, Tatham R. L, Black W. C. Multivariate data analysis (5th ed.). Prentice-Hall: London;1998.
49. Harby F.A, Qahwaji R, Kamala M.End-users' acceptance of biometrics authentication to secure e-commerce within the context of Saudi culture: applying the UTAUT model. in Pande, R. and van der Weide, T. (Eds), Globalization, Technology Diffusion and Gender Disparity: Social Impacts of ICTs, IGI Global, Hershey, PA, pp. 225-246;2012.
50. Heeks R.B, Bailur S. Analyzing e-government research: perspectives, philosophies, theories, methods, and practice. Government Information Quarterly, 2007;24,2:243-265.
51. Heeks R.B. E-government for Development, Institute for Development Policy and Management. University of Manchester, Manchester;2008.

52. Hinton P. R, Brownlow C, McMurray I, Cozens B. *SPSS explained*. London, UK: Routledge;2004.
53. Horst M, Kuttschreuter M, Gutteling J. M. Perceived usefulness, personal xperiences, risk perception and trust as determinants of adoption of e- government services in The Netherlands. Computers in Human Behavior, 2007;23,4:1838-1852.
54. Hsieh P.H, Huang C.S, Yen D.C. Assessing Web Services of Emerging Economies in an Eastern Country – Taiwan's e-Government. Government Information Quarterly, 2013;30,3:267-276.
55. Hsu M.H, Chiu C. M. Predicting Electronic Service Continuance with a Decomposed Theory of Planned Behaviour. Behaviour & Information Technology, 2004;23,5:359-373.
56. Hwang M. S, Li C. T, Shen J. J, Chu Y. P. Challenges in e-government and security of information. Information & Security, 2004;15,1:9-20.
57. Il I. Seongtae H, Myung S.K. An international comparison of technology adoption testing theUTAUTmodel. Journal of Information & Management, 2011;48:1-8.
58. Irani Z, Elliman T, Jackson P. Electronic transformation of government in theUK: a research agenda. European Journal of Information Systems, 2007;16:327-335.
59. Irani Z, Weerakkody V, Kamal M, Hindi N.M, Osman I.H, Anouze A. L, El-Haddadeh R, Lee, H, Osmani M, Al-Ayoubi B. An analysis of methodologies utilised in e-Government research: a user satisfaction perspective. Journal of Enterprise Information Management, 2012;25,3:298-313.
60. Jaeger P.T. The endless wire: e-Government as global phenomenon. Government Information Quarterly, 2003;20,4:323-331.
61. Janda S, Trocchia P. J, Gwinner K. P. Consumer perceptions of Internet retail service quality. International Journal of Service Industry Management, 2002;13,5:412–431.
62. Kamal M.M, Themistocleous M, Morabito V. Justifying the decisions for EAI adoption in LGAs: a validated proposition of factors, adoption lifecycle phases, mapping and prioritisation of factors. Proceedings of the 42nd HICSS, 1-10:2009.
63. Kumar V, Mukerji B, Butt I, Persaud A. Factors for successful e-government adoption: a conceptual framework. Electronic Journal of e-Government, 2007;5,1:63-76.
64. Laudon K, Laudon J. Management Information Systems, 11th ed., Prentice-Hall, Upper Saddle River, NJ;2009.
65. Lean O. K, Zailani S, Ramayah T, Fernando Y. Factors influencing intention to use e-government services among citizens in Malaysia. International Journal of Information Management, 2009;29,6:458-475.
66. Lee S.M, Tan X, Trimi S. Current practices of leading e-government countries. Communications of the Association for Computing Machinery, 2005;48,10:99-104.
67. Liao Z, Cheung M.T. Measuring consumer satisfaction in internet banking: a core framework. Communications of the ACM, 2008;51,4:47-51.
68. Liu C.T, Du T. C,Tsai H.H. (2009). A study of the service quality of general portals. Information Management, 2009;46:52–56.
69. Morris D.F, Jae Moon M. Advancing e-government at the grassroots: tortoise or hare?. Public Administration Review, 2005;65,1:64-75.
70. Mouakket S. The motivations for citizens' adoption of e-government: an empirical study in the UAE. International Journal of Business Information Systems, 2010;6,2:240-264.
71. Nunnally J. C, I. H. Bernstein. Psychometric Theory. 3rd ed. New York: McGraw-Hill;1994.
72. Nysveen H, Pedersen P.E, Thorbjørnsen H. Explaining intention to use mobile chat services: moderating effects of gender. Journal of Consumer Marketing, 2005;22,5:247-256.
73. Palmer J.W, Bailey J.P, Faraj S. The role of intermediaries in the development of trust on the WWW: the use and prominence of trusted third parties and privacy statements. Journal of Computer Mediated Communication, 2000;1,3:7-20.
74. Panagiotis G, Naoum M, Eugenia P. The effect of perceived external prestige on Greek public employees organizational identification: gender as a moderator. An International Journal: Gender in Management, 2012;27,1:51-62.

75. Parasuraman A, Zeithaml V.A, Malhotra A. E-S-QUAL: a multiple-item scale for assessing electronic service quality. Journal of Service Research, 2005;7,3:213-233.
76. Reddick C. Citizen interaction with e-government: from the streets to servers?. Government Information Quarterly, 2005;22,1:38-57.
77. Reffat R. Developing a successful e-government. In Proc. Sympos. e-Government: Opportunities and Challenge, Muscat Municipality, Oman,IV1-IV13;2003.
78. Rehman M, Esichaikul V, Kamal M. Factors influencing e-government adoption in Pakistan. Transforming Government: People, Process and Policy, 2012;6,3:258-282.
79. Ringle C.M, Wende S, Will S. SmartPLS 2.0 (M3) beta, Hamburg. http://www.smartpls.de (accessed 01/10/2017);2005
80. Roca J.C, Chiu C.M, Martinez F. J. Understanding E-Learning Continuance Intention: An Extension of the Technology Acceptance Model. International Journal of Human-Computer Studies, 2006;64,8:683-696.
81. Rokhman A. E-Government Adoption in Developing Countries; the Case of Indonesia. Journal of Emerging Trends in Computing Information Sciences, 2011;2,5:228-236.
82. Sahu G.P, Gupta M.P. Users' acceptance of e-government: A study of Indian central excise. International journal of electronic government research, 2007;3,3:1-21.
83. Sang S, Lee J. D, Lee J. E-government adoption in ASEAN: The case of Cambodia. Internet Research, 2009;19;5:517-534.
84. Santos J. E-service quality: a model of virtual service quality dimensions. Managing service quality, 2003;13, 3:233-246.
85. Sarikas O, Weerakkody V. Realising integrated e-government services: a UK local government perspective. Transforming Government: People, Process and Policy, 2007;1,2:153-173.
86. Schaupp C, Carter L. E-voting: from apathy to adoption. Journal of Enterprise Information Management, 2005;18,5:586-601.
87. Schaupp L.C, Carter L, McBride M.E. E-file adoption: a study of US tax payers intentions. Computers in Human Behavior, 2010;26,4:636-644.
88. Shackleton P, Fisher J, Dawson L. Internal external factors impacting on e-government maturity: a local government case study. Journal of Information Technology Cases Applications, 2004;6, 4:36–50.
89. Shareef M.A, Kumar V, Kumar U, Dwivedi Y.K. e-Government adoption model (GAM): differing service maturity levels. Government Information Quarterly, 2011;28,1:17-35.
90. Sharma S.K, Al-Shihi H, Govindaluri S.M. Exploring quality of e-Government services in Oman. Education, Business and Society: Contemporary Middle Eastern Issues, 2013;6,2:87-100.
91. Sohail M.S, Shaikh N.M. Internet banking and quality of service: perspectives from a developing nation in the Middle East. Online Information Review, 2008;32,1:58-72.
92. Stephens R.T. A framework for the identification of electronic commerce visual design elements that enable trust within the small hotel industry. Unpublished doctoral dissertation, Nova Southeastern University, Fort Lauderdale, FL;2004.
93. Suki N.M, Ramayah T. User acceptance of the e-government services in Malaysia: Structural equation modeling approach. Interdisciplinary Journal of Information, Knowledge, Management, 2010;5:395-413.
94. Tan C.W, Pan S.L, Lim E.T.K. Managing stakeholder interests in e-government implementation: Lessons learned from a Singapore e-government Project. Journal of Global Information Management, 2005;13,1:31-53.
95. Tenenhaus, M, V. Esposito Vinzi Y.-M, Chatelin, Lauro C. PLS Path Modeling. Computational Statistics & Data Analysis, 2005;48,1:159–205.
96. Tenenhaus M, Esposito V, Chatelin Y, Lauro C. PLS path modelling. Computational Statistics & Data Analysis, 2008;48:159–205.

97. The World Bank. E-government definition. http://web.worldbank.org (Accessed 20 October 2017);2012.
98. Titah R, Barki H. E-government adoption acceptance: a literature review. International Journal of Electronic Government Research, 2006;2,3:23-57.
99. United Nations. UN e-Government survey 2012: e-Government for the people. March;2012.
100. Venkatesh V, Morris M, Davis G.B, Davis F.D. User acceptance of information technology: toward a unified view. MIS Quarterly, 2003;27,3:425-478.
101. Venkatesh V, Thong J.Y.L, Chan F.K.Y, Hu P.J.H, Brown S.A. Extending the Two-Stage Information Systems Continuance Model: Incorporating UTAUT Predictors and the Role of Context. Information Systems Journal, 2011;21,6:527-555.
102. Venkatesh V, Sykes T.A, Xiaojun Z. Just what the doctor ordered: a revised UTAUT for EMR system adoption and use by doctors. System Sciences (HICSS), 44th Hawaii International Conference, 2011:1-10.
103. Venkatesh V, Chan F.K, Thong J.Y. Designing e-Government services: key service attributes and citizens' preference structures. Journal of Operations Management, 2012;30,1:116-133.
104. Verdegem P, Verleye G. User-centred e-Government in practice: a comprehensive model for measuring user satisfaction. Government Information Quarterly, 2009;26,3:487-497.
105. Voutinioti A. Determinants of User Adoption of e-Government Services in Greece and the Role of Citizen Service Centres. Procedia Technology, 2013;8:238-244.
106. Wan H.A. Opportunities to enhance a commercial web site. Information and Management, 2000;38, 1:15–21.
107. Wang Y.S, Liao Y.W. Assessing eGovernment systems success: a validation of the DeLone and McLean model of information systems success. Government Information Quarterly, 2008;25, 4:717-733.
108. Wang Y. S, Shih Y.W. Why do people use information kiosks? A validation of the Unified Theory of Acceptance and Use of Technology. Government Information Quarterly, 2009;26, 1:158-165.
109. Wangpipatwong S, Chutimaskul W, Papasratorn B. Understanding Citizen's Continuance Intention to Use E-Government Website: a Composite View of Technology Acceptance Model and Computer Self-Efficacy. The Electronic Journal of e-Government, 2008;6,1:55-64.
110. Wangpipatwong S, Chutimaskul W, Papasratorn B. Quality Enhancing the Continued Use of E-Government Websites: Evidence from E-Citizens of Thailand. International Journal of Electronic Government Research, 2009;5, 1:19-35.
111. Weerakkody V, Janssen M, Dwivedi Y.K. Transformational change and business process reengineering (BPR): lessons from the British and Dutch public sector. Government Information Quarterly, 2011;28,1:320-328.
112. Wetzels M, Odekerken-Schroder G, Oppen C.V. Using PLS path modeling for assessing hierarchical construct models: guidelines and empirical illustration. MIS Quarterly,2009;33, 1:177-195.
113. Wixom B. H, Todd P. A. A Theoretical Integration of User Satisfaction and Technology Acceptance. Information Systems Research, 2005;16,1:85-102.
114. Wolfinbarger M.F, Gilly M.C. eTailQ: dimensionalizing, measuring, and predicting eTail quality. Journal of Retailing, 2003;79,3:183-198.
115. Yang Z, Cai S, Zhou Z. Development and Validation of an Instrument to Measure User Perceived Service Quality of Information Presenting Web Portals. Information & Management, 2005;42,4:575-589.
116. Yonazi J, Sol H, Boonstra A. Exploring issues underlying citizen adoption of e-government initiatives in developing countries: The case of Tanzania. In Proceedings of the 10th European Conference on E-Government (p. 425). Ireland: National Center for Taxation Studies University of Limerick;2010.
117. Zhao F, Scavarda A.J, Waxin M.F. Key issues and challenges in e-government development: an integrative case study of the number one eCity in the Arab World. Information Technology & People, 2012;25,4:395-422.

DOI: 10.5824/1309-1581.2018.2.001.x