



The Influence of Effort and Performance Expectancy on Employees to Adopt E-government: Evidence from Oman

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ABSTRACT

In the same context of previous studies on the adoption of E-government, this paper employs the Unified theory of acceptance and use of technology model two constructs from this model were selected (performance expectancy, and effort expectancy) to examine their effect on the intention to adopt electronic government in Sultanate of Oman from an employees' perspective. A manual survey was conducted to collect the request data. The total number of valid questionnaires for analysis was 204 which formed (83.3%) of the study sample. To confirm the internal consistency of construct and measures validity, Factor analysis and Reliability test were used for this purpose. In addition to, the multiple linear regression was used to test the study hypotheses. The study model explained (50.5%) of the whole deviation in employees' Intention to adopt E-government. Moreover, both constructs performance expectancy, and effort expectancy have a significant influence on employees' intention to adopt the electronic government. To empower employees to response to the requested e-services by citizens or businesses in real time, the adopted system to provide E-government services must be simplified, in addition to equipping employees with needed skills to use the mentioned system. The study originality lies in narrowing the UTUAT model which adopted only two constructs (performance expectancy, and effort expectancy) of this model. Then, implementing this adopted model on employees as individuals, not as representatives of government institutions, which considered the first study attempted to do such investigation.

Keywords: Effort Expectancy, Performance Expectancy, Unified Theory of Acceptance and Use of Technology, E-government, Employees

JEL Classifications: C2, H11

1. INTRODUCTION

All governments realized that making their services more efficient, relying completely on the level that they are adopting electronic government. As we are living in digital era, our views of providing the government services has completely changed. e-government may be defined as the use of Information and Communication Technology (ICT), and the Internet's ability to boost the delivery of, and access to, government services and operations for the benefit of employees, citizens, businesses, and other stakeholders (Srivastava and Teo, 2007). Therefore, E-government became a necessity to help employees in government work to provide high quality government services, which will meet the actual needs of users. Thereby, offering more saving time, efficient, reduce costs, transparent, provide services on real time, and accessible public

services to citizens and businesses (Bertot et al., 2008). As well as reducing the chances of corruption in governments, which it is a significant motivation to adopt E-government (Al-Shafi, 2009). However, to develop and provide services that meet users' expectations and needs, government should disseminate the knowledge of E-government among its employees, and help them to adopt information technology (Alraja et al., 2015; Heeks and Bailur, 2007). This paper argues that the employees' adoption of E-government depends on various expectations related to the performance expectancy, and effort expectancy. Ideally, employees will adopt E-government, if they hold positive expectations regarding the said influences. Given the aforementioned argument, the main aim of this research is to investigate the key challenges that influence employees' adoption of E-government in Sultanate of Oman.

The remainder of this paper covers five sections as follows; the second section presents the literature review. The third section represents the methodology of the study. The fourth section presents data analysis and the results of the research tool. The fifth section shows the discussion of the study results. Whereas, the sixth section displays conclusion of the research.

2. LITERATURE REVIEW

Since the inception of the internet era, the number of ICT has doubled several times (Al-Shafi, 2009; (Ho, 2002), that pushed many researchers to investigate the level of information technology adoption in different disciplines such as e-learning, e-commerce, e-business and E-government using validated models such as technology acceptance model, Technology-organization-environment, and Unified Theory of Acceptance and Use of Technology (UTAUT) (Uddin, Ahmar and Alraja, 2016; Alraja, 2015; Alraja and Aref, 2015; Alraja and Malkawi, 2015). As well as the use of internet and information technology in different disciplines especially to enhance productivity (Hammami et al., 2015). Using internet technology to deliver government services (E-government) is a significant tool (Shackleton et al., 2006; Irani et al., 2007; Kamal et al., 2009). But beside the benefits of using E-government such as reduce bribery and corruption, increase transparency in government ministries, faster access to government information, and provide lower administrative costs. There will be many threats by low bandwidth and internet penetration, technological obsolescence, inadequate ICT infrastructure and technicians, privacy and security, incessant power outages, financial issues, and culture and the digital divide (Asogwa, 2013; Waller and Genius, 2015).

The electronic government reviewed literature shows that there are many factors influencing positively or negatively on adoption of E-government. In (Abu-Shanab, 2014; Alraja et al., 2015) studies, they focused on the trust in internet, trust in government, trust in technology, information quality, and privacy, Internet familiarity, and security, they found that this factors have significant influence on adopting E-government services from citizens's perspective. Moreover, in the trust context, many literatures distinguished between trust in government and trust in E-government. In this regard, users' perception on trustiness of entire government perspectives is called as trust in government (Tolbert and Mossberger, 2006; Welch et al., 2005). While the perception of individuals about the use of information technology in producing and delivering the services of government which referred to as trust in E-government (Carter and Bélanger, 2005), which has significant influence on people to adopt E-government not only in the initial stage of new technology adoption but also in the subsequent stages of this adoption, so trust is dynamic construct, then it should be nurtured for both experienced and novice users (Mäntymäki, 2008). In a cross-countries study the respondents are ready to adopt E-government if they receive significant benefits (Deakins et al., 2010). In context of Oman, the main factors identify quality of E-government services in Oman are responsiveness, efficiency, reliability, and security (Sharma et al., 2013). More, service quality has significant affect in the willingness to use E-government services (Sharma, 2015).

Furthermore, the acceptance of E-government service rely on availability and efficiency of public services (Al-Busaidy and Weerakkody, 2009).

From another view, there are many challenges to enable e-government services such as the maturity of e-government systems, E-government maturity models, the integration of process and information systems, differences in culture, political, technical, and organizational origin (Sarikas and Weerakkody, 2007; Lee et al., 2008; Shackleton et al., 2006).

2.1. Research Model and Hypotheses

Based on UTAUT model the researchers adopted two constructs include: Performance expectancy, and effort expectancy. These constructs have been proved in the literature as salient predictors for accepting technology (Al-Awadhi and Morris, 2008; Al-Shafi, 2009). Figure 1 presents the research model. In following we will define each one of those constructs.

2.1.1. Performance expectancy

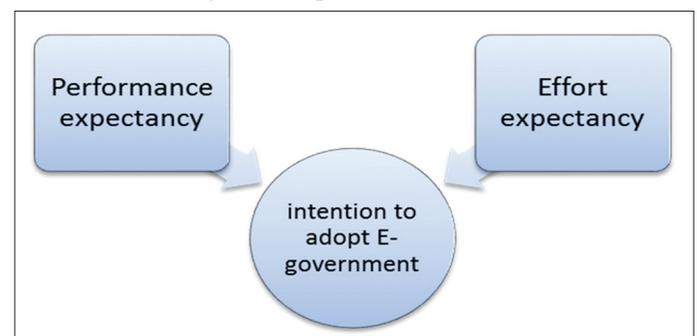
Performance expectancy refers to the individuals believes to what extent their performance will improve if they used the system. It contains five constructs: Perceived usefulness, outcome expectations, job-fit, relative advantage, and extrinsic motivation (Venkatesh et al., 2003). Many studies found that performance expectancy play significant role in intention to adopt information technology (Carter et al., 2011; Benbasat and Barki, 2007; Alraja, 2015). In another study, performance expectancy was correlated positively to E-government adoption but not significantly (Al-Shafi, 2009). To demonstrate performance expectancy toward employees' intention to adopt E-government, the researchers propose the following hypothesis:

H₁: Performance expectancy will have a positive influence on employees' intention to adopt E-government.

2.1.2. Effort expectancy

Effort expectancy is the degree of ease associated with the use of the system (Venkatesh et al., 2003). Many researchers found that effort expectancy has a significant influence on intention to adopt new technology (Alraja, 2015; Chang et al., 2007; Schaper and Pervan, 2007; Gupta et al., 2008; Al-Shafi, 2009). In the study of Venkatesh et al (2003) he found that the effort expectancy is significant only in initial stage of information technology adoption. While, Carter et al (2011) found that the effort expectancy has no

Figure 1: Proposed research model



positive impact on intention to adopt information technology. In our research, if employees believe that it is easy to use information technology they will be more likely to adopt E-government. That led us to propose the following hypothesis:

H₂: Effort expectancy will have a positive influence on employees' intention to adopt E-government.

3. METHODOLOGY

To produce quantitative statistics about the aspects that have been selected in this study, a questionnaire-based survey was used to collect requested data. The survey was used in this study to know the employees' perceptions about the adoption of E-government, which it will lead to identify the acceptance of the generalization. Based on previous literature the questionnaire was developed taking in consider the literature that focused on information technology adoption such as (Venkatesh et al., 2003; Carter et al., 2011; Raaij and Schepers, 2008). To assure the ease of response the first page of the questionnaire contained very clear instructions, clarifying the purpose of the study, and assuring the confidentiality and privacy, so they were not asked to mention any thing may reveal their identity. The main instrument in the questionnaire was five-point-Likert scale, ranging from 1 (strongly disagree) to 5 (strongly agree). The questionnaire was divided into two main divisions the first for demographic background-related viewpoint, the second for covering the constructs of adopted model.

Before administering the actual survey, five individuals were selected for a pilot study to improve the questions, to test the clarity of the questions, and to test the respondents' understanding. All received comments were taken in consider in improving the questionnaire, so some statements removed, or amended.

The reviewed questionnaire was distributed to a total 250 employees at Dhofar governorate. Out of 250 distributed questionnaires, only 217 questionnaires were returned. A number of 13 questionnaires out of the completed questionnaires were rejected because some respondents gave the same answer to all questions, no answers for some questions, or/and others gave more than one answer to a question that must have only one answer. Therefore, the accepted and usable questionnaires for the subsequent analysis were 204 questionnaires with a rate of (81.6%), this response rate is considered a very good rate in the field of information systems.

Factor analysis and reliability test are used to check the validity and reliability of the gathered data which obtained by questionnaire. The results of those aforementioned tests confirmed the internal consistency of construct and measures validity.

4. DATA ANALYSIS

4.1. Factor Analysis

To examine the construct validity the researchers used the exploratory factor analysis utilizing the principal component analysis with Varimax rotation. According to (Straub et al., 2004; Dwivedi et al., 2006; Carter et al., 2008), the recommended value for constructs to be valid is the items loaded must be at

least 0.40, as well as, the cross-loading value of items must not exceed 0.40.

As can be seen in Table 1 for the performance expectancy all its underlying constructs are loaded at factor 1. The coefficients of this construct ranging from (0.688) to (0.839). Eventually, for the effort expectancy, all its underlying constructs are loaded at factor 2. The coefficients of this construct ranging from (0.569) to (0.922). The results of factor analysis utilizing the principal component analysis with Varimax rotation illustrate that the items loaded duly in the construct discriminate validity. Which confirm that the collected data is valid.

4.2. Reliability Test

Before getting the paper findings, our instrument was tested for internal consistency using Cronbach's coefficient alpha.

Table 2 presents the results of Cronbach's coefficient alpha which varied between (0.824) for Intention to adopt E-government, (0.874) for the effort expectancy constructs, (0.895) for performance expectancy.

4.3. Multiple Linear Regressions

Multiple linear regression analysis was performed with the effort expectancy, performance expectancy as the predictor variables, and intention to adopt electronic government as a dependent variable.

A number of 204 cases have been analyzed. Relying on the results of regression analysis displayed in Table 3. The entire model was significant ($F [2.204] = 104.353, P < 0.001$) with adjusted R² being (0.505) which explains (50.5%) of the changes in the intention to adopt E-government. Both constructs performance expectancy, and Effort expectancy were significant (PE = 0.414, and EE = 0.372). Table 4 shows the significant and Non-significant constructs, and supported and unsupported hypotheses.

Table 1: Rotated component matrix

Items	Component	
	1	2
PE1	0.807	
PE2	0.839	
PE3	0.826	
PE4	0.688	
EE1		0.853
EE2		0.569
EE3		0.922

Extraction method: Principal component analysis. Rotation method: Varimax with Kaiser normalization

Table 2: The result of Cronbach's alpha test

Variables	No. items	Result
PE	4	0.895
EE	3	0.874
IAEG	3	0.824

Table 3: Results of regression analysis

Adjusted R ²	F	Significant
0.505	104.353	0.000

Predictors: (Constant), PE, EE. Dependent variable: IAEG

Table 4: Final results of hypotheses testing

Suggested-Hypotheses	β	T	Significant	Accepted
H ₁ (PE)	0.414	6.380	0.000	Yes
H ₂ (EE)	0.372	5.726	0.000	Yes

5. DISCUSSION

Two main constructs empirically investigated the intention to adopt electronic government from the employees' perspective. The total rate of response to the research instrument was (83.3%). This rate is between 5% and 95% (Fowler, 2002), therefore, it is considered satisfactory and acceptable. The instrument checked for validation pre and post data collection; this was for content and construct validity, and reliability. The two constructs of our adopted model significantly interpreted the intention of employees to adopt an electronic government. Performance expectancy contributed to the largest variance ($\beta = 0.414$) when explaining employees intention to adopt an electronic government. While the effort expectancy contributed to the second largest variance ($\beta = 0.372$) when explaining employees intention to adopt an electronic government.

Performance expectancy play significant role in intention to adopt information technology (Carter et al., 2011; Benbasat and Barki, 2007; Alraja, 2015). This theoretical proposition is confirmed in the survey findings that are gained in this research which suggest that the performance expectancy has a positive influence on intentions to use electronic government. Also, this study provides evidence that Performance expectancy is not merely reflected performance will improve if they used the system, but also it has a significant positive influence on the intention to adopt electronic government. This result leads to suggest that government have to do more efforts to simplify the system and make it more useful to employees to help them to response to the requested e-services by citizens or businesses in real time.

Effort expectancy has a significant influence on intention to adopt new technology (Alraja, 2015; Chang et al., 2007; Schaper and Pervan, 2007; Gupta et al., 2008). This theoretical supposition is confirmed in the survey findings that are obtained in this research which suggest that the effort expectancy has a positive influence on intentions to adopt electronic government. Also, this study provides evidence that Effort expectancy is not merely reflected the degree of ease associated with the use of the system, but also it has a significant positive influence on the intention to adopt electronic government. In spite of, this result is opposed with the findings of Carter et al. (2011) which found that the effort expectancy has no positive impact on intention to adopt information technology. This effect may explain depending on the study of Venkatesh et al. (2003) which found that the effort expectancy is significant only in an initial stage of information technology adoption, this perspective fit with research case that the Sultanate of Oman in the initial stage of electronic government adoption this result leads to suggest that government have to do more efforts in equipping employees with the skills needed to use information technology especially these related to electronic government, and doing this equip continually, particularly, with new adopted technology.

6. CONCLUSION

In this study, the two constructs (performance expectancy and effort expectancy) are used to investigate employees' perceptions about the adoption of electronic government. The study illustrates that both performance expectancy and effort expectancy can be considered salient indicators for the adoption of electronic government. We have to take in consideration that this study implemented in a country still in its initial stages of the adoption of electronic government, also the data was collected using hand administered questionnaire, so that rise the potential of having self-report bias. For future studies it is recommended that there should be a try to validate the results of this study by implementing its model in a different environment, from the perspective e-services receivers (citizens and businesses, and moderate all the constructs by other constructs like age, gender, culture or by adding new constructs like social influence, trust, and facilitating conditions. However, it is even better to use multiple methods to collect data in the future studies.

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