

**Factors Affecting The Staff In Higher  
Education Institutions At The Level Of  
The Electronic Environment In  
Developing Countries: A Case Study Of  
Iraq**

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**Abstract**

The objective of the E-Environment is to help countries, jurisdictions, communities and organizations, particularly those in the developing world. Nowadays, there are many applications usage in every day's life such as electronic banking, electronic learning and electronic government, etc. Electronic government is the application of computers, or/and electronic appliances in the governing activities and operations of a government; whereby both the government and the public interact transact electronically. Variables like social factors, Performance Expectancy, Effort Expectancy and Users Behaviour be determined majorly before the adoption of EG as a technological package. With the theoretical perspectives of the Unified Theory of Use of Technology (UTAUT) this study is aimed at investigating the related variables that could mitigate the adoption of EG in Iraq. Scores of studies have employed UTAUT to achieve similar objective, but none has implemented UTAUT to the adoption of EG among electronic environment in higher education institutes in Iraq. This study tests the usage behaviour of EG in Iraq, with that, data gathered from higher education institutes in Iraq.

**الخلاصة**

الهدف من البيئة الإلكترونية هو مساعدة البلدان والمجتمعات والمنظمات بشكل عام وخاصة تلك الموجودة في العالم النامي . حاليا هناك العديد من التطبيقات نستخدمها في حياتنا اليومية مثل الخدمات المصرفية الإلكترونية ، والتعلم الإلكتروني والحكومة الإلكترونية ، الخ. والحكومة الإلكترونية ببساطة هو استخدام أجهزة الكمبيوتر والتطبيقات الإلكترونية والأجهزة الإلكترونية في الأنشطة والعمليات الإدارية للحكومة ؛ حيث ان الحكومة تتعامل مع المستخدمين بشكل إلكتروني. هناك العديد من المتغيرات والمؤثرات مثل العوامل الاجتماعية والأداء المتوقع والجهد المتوقع ، وسلوك المستخدمين وغيرها ومن المهم ان يتم تحديد العوامل الرئيسية قبل اعتماد الحكومة الإلكترونية كحزمة رقمية . ومع الرؤى النظرية للنظرية الموحدة لقبول واستخدام تكنولوجيا ( UTAUT ) وتهدف هذه الدراسة إلى التعرف على المتغيرات ذات الصلة والتي يمكن أن تؤثر على اعتماد الحكومة الإلكترونية EG في العراق . هناك العشرات من الدراسات التي استخدمت ( UTAUT ) لتحقيق هدف مماثل ، ولكن لم يكن أيا منها قد استخدم ( UTAUT ) في اعتماد الحكومة الإلكترونية EG على صعيد البيئة الإلكترونية في مؤسسات التعليم العالي في العراق . ان هذه الدراسة درست سلوك استخدام الحكومة الإلكترونية EG في العراق ، مع ذلك ، جمعت بيانات هذا البحث من مؤسسات التعليم العالي في العراق .

Keywords; Iraq, UTAUT, Electronic environment, EG, Adoption.

## Introduction

In general, Iraq is facing huge problems in many fields such as education, sciences, K.Faaq, Ismail *et al.* 2009). Iraqi government is aiming at developing the country's infrastructure under which electronic government is enlisted (James A. Wall 1995; UN & ESCWA 2007). Through this, the government dreams of user transactions with the health and electronic services (James A. Wall 1995; Pascal C. Sanginga, *et al.* 2007; governmental services to be done electronically, while the serve can be accessed throughout the country widely and timely. Additionally, electronic government is an electronic application with the main orientation of serving beneficiaries faster and wider than the traditional governmental settings can offer. The EG will transform the traditional access and transaction of governmental services through portal where everyone can logon anywhere and anytime. Logically, besides the technical (infrastructure) and financial needs to determine the success of such project, there are still some social impediments that can still hinder the practicability of EG in Iraq, some of them are investigating the adoptability EG by the people of Iraq. The attitude of the users towards technology as whole and EG in particular, examine the technical know-how of the users and the more under social variables that have been studied before and have been reported capable of intervening the success of a technology application. The report from the Portal Iraq (2011) shows that 3% of the Iraqis use the internet, and highlighted that Iraqis still don't believe that the internet have a better influence on their lives and could transform their lives positively (Portal Iraq 2011). The literature show that the internet in Iraq is not yet a widespread tool and used, which is enough to pose some doubt on the success of EG in Iraq, believing the inevitable notion that without internet there can be successful usage of EG portal, therefore it becomes an obligatory to examine the proper adoptability of EG in Iraq (Al-Dabbagh 2011; Portal Iraq 2011; Trading Economics 2012). In corroborating with the claims of Almutiri (2007) some factors dictate the success and the failure of technology implementation, and these factors ought-to to be identified explicitly (Chris 1957), hence this study is oblige to examine the factors that inform the success and the failure of E-environment in general and EG in specific.

## Unified Theory of Acceptance and Use of Technology in Context:

The main aim of this study is to explore the theoretical perspective of Unified Theory of Acceptance and Use of Technology (UTUAT) in the context of e-environment. The adoption of EG would be examined in while employing the theoretical elements of UTAUT to set the paradigm of the examination (Venkatesh, Morris *et al.* 2003). Further noted that examining theories in new contexts can result in their breakdown and opportunities for the creation of new knowledge (Alvesson & Karreman 2007; Faaeq, Ismail, Osman, Al-Swidi, Faieq, 2013). Moreover, (UTAUT) has four constructs to predict users' behavioural intention and behaviour of use, namely: (i) performance expectancy, (ii) effort expectancy, (iii) social influence, and (iv) facilitating conditions Venkatesh (2003). The relationships between these constructs, behaviour intention and behaviour of use are moderated by four key factors i.e. age, gender, voluntariness, and experience (Venkatesh *et al.*, 2003). The following Figure (1) shows the UTAUT diagram. Among other technology adoption and acceptance model,

UTAUT is the most complex model that combines the elements of other models to present a more appropriate adoptable model for the purpose of this study. UTAUT has been widely adopted in bounties of researches that tend to be relevant and recent in the realm of technology studies.

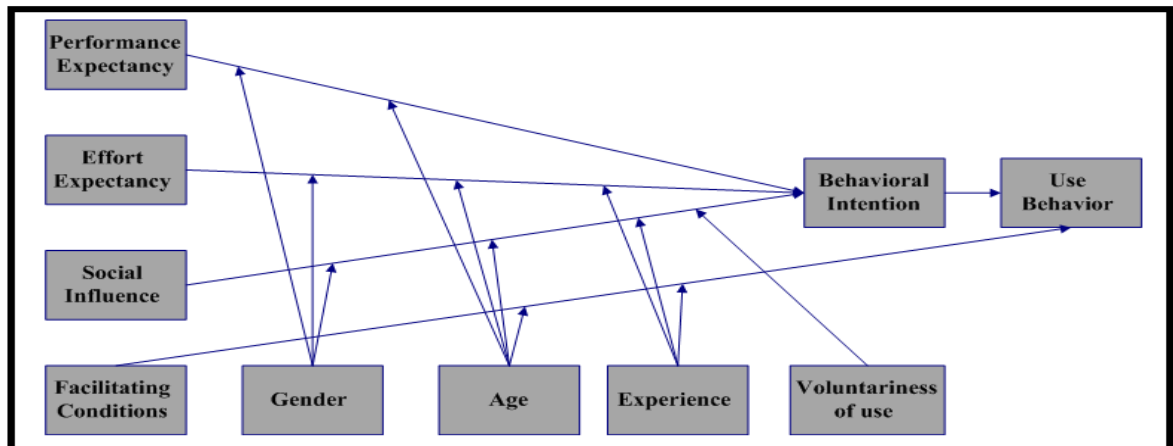


Figure (1) UTAUT

Source: Venkatesh et al. (2003)

The UTAUT has been adopted widely, and several studies have confirmed and reconfirmed the model validity and reliability in different countries (Carlsson *et al.* 2006; Wu, Tao et al. 2007; Al Awadhi & Morris, 2008; Adulwahab & Dahalin 2011; Maldonado *et al.*, 2011), evidently that justified it suitable for this study.

Scores of studies have examined the technology adopted behaviour of users from developing countries (AlAwadhi & Morris 2008; Al-Shafi & Weerakkody, 2009; Al-Shafi & Weerakkody 2010; Yahya *et al.*, 2011). Venkatesh and Davis (2000) identified a strong relationship between successful implementation of a technology and the behaviour of the technology (Venkatesh & Davis, 2000). Similarly, (Straub, 1997) planted that successful implementation of a technology is proportionated and related to the usage behaviour. Implementations and development of a technology is an inevitable crucial stage before determine the adoption, the use of the technology at all (K.Faaq, Ismail *et al.* 2009).

Wang and Shih (2009) illuminate that UTAUT has been aptly used to test for the adoptability and acceptance of a mass oriented technology and reported that several studies have adopted the UTAUT theoretical view to examine the adoption of EG in particular (Al-Shafi & Weerakkody, 2009; Wang & Shih, 2009; Al-Shafi & Weerakkody, 2010) The UTAUT model is a universal model that can be employed to test for any technology adoption process, most specifically to examine user's behavioural intentions (Liao & Jr 2000). However, the main contribution of this study is the establishment of the mediating relationship between UTAUT antecedents (EE, PE, and SI), and UB in uncertain and risky environment. Based on the above discussions, the research model for this present research is illustrated in Figure 2.

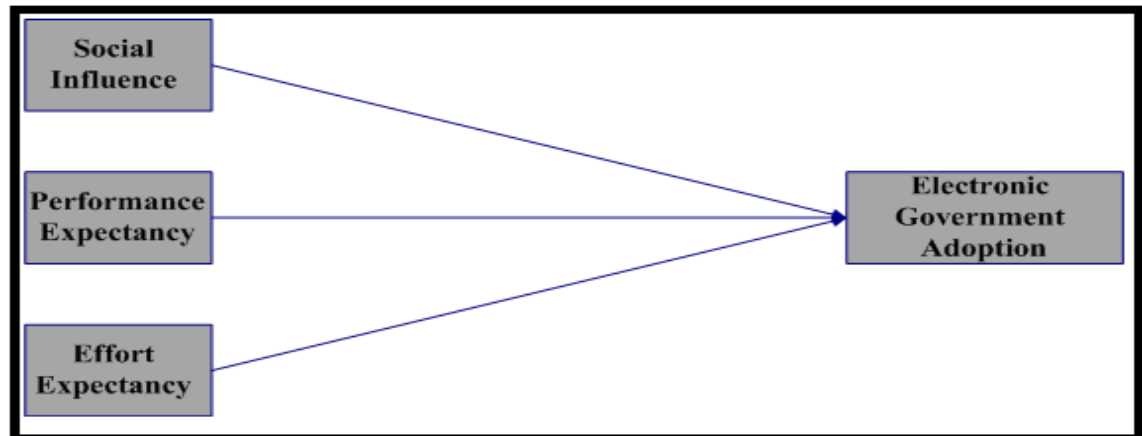


Figure (2) the Outline Research Model

This study is designed similarly to examine the adoption of EG but uniquely determine to examine the adoption through the government to the employee (G2E) view. Hence this study would focus the governmental terms of adopting EG from transactions with the employees. The benefits of the EG adoption on the governmental services (renewal of driver license, paying of summons, Q card (Key card), registering and obtaining international passport, Death and Birth registration, according to the list of governmental services by (Carter & Belanger 2004).

### Hypotheses

On the basis of the above framework, the study hypothesizes that;

*H<sub>1</sub>: Social influence positively affect the employee's Usage Behaviour of eG services.*

*H<sub>2</sub>: Performance Expectancy (PE) has a positive influence on Usage Behaviour of eG services.*

*H<sub>3</sub>: Effort Expectancy (EE) has a positive influence on Usage Behaviour of eG services.*

### Population and Sampling that the proposed to the Implementation of the UTAUT:

The study will focus on the (G2E) services mainly, covering the range of all government services, such as social, economic, and the rest in the specific context of Iraq. Iraqi higher education ministry users are from different levels of demographical features surveyed for the purpose of this study.

### Study Sample

The sample was chosen through systematic random sampling method of the university staff (Academic and Administrative staff) and data was gathered through a questionnaire. A total of 50 questionnaires were used.

Based on the assessment, the respondents have various genders out of 50 respondents, 26 were male and the remaining 24 were female.

With regards to the age groups, 58.0% of the respondents were between 23 and 35 years old, 28.0% are between 36 and 45 years old. Moreover, the education out of 50

respondents, 22.0 was PH.D, 18.0 were Master, 42.0 were bachelor 10.0 were Diploma and 6.0 were school from different levels. Details of the results are presented in Table 1.

**Table 1. Participant's Demographic Information**

		Frequency	Percentage
Gender	Male	26	52.0
	Female	24	48.0
Age	23-35	29	58.0
	36-45	14	28.0
	46-55	7	14.0
Education level	PHD	11	22.0
	Master	9	18.0
	Bachelor	21	42.0
	Diploma	5	10.0
	School	3	6.0
	Read and write	1	2.0

The entire items were positively phrased and were gauged through a five-point Likert type scale ranging from 1– strongly disagree to 7-strongly agree. Additionally, Cronbach Alpha for the entire variables was over 0.7 and the items have factor loadings of over 0.5. These results show the validity of study measurements.

### Data analysis

The correlation test results are presented in Table 2. The table shows the following variable values; Social Influence ( $r=0.547^{**}$ ,  $p<0.01$ ), Performance Expectancy ( $R=0.790$ ,  $p<0.05$ ), and Effort Expectancy ( $r=0.754$ ,  $p<0.05$ ). The finding reveals that the entire variables are significantly correlated with Usage behaviour.

**Table 2 Correlations among summated study variables**

Variables	DV	IV1	IV2	IV3
DV- Usage Behaviour_ (UB)	1			
IV1- Social Influence(SI)	.547**	1		
IV2- Performance Expectancy(PE)	.790*	.577**	1	
IV3- Effort Expectancy(EE)	.754**	.632**	.756**	1

\*\* Correlation is significant at the 0.01 level (2-tailed).

\* Correlation is significant at the 0.05 level (2-tailed).

The direct impact of the components on use of E-Government services was tested through multiple regression analysis. The dimensions are illustrated in Table 3. Based on the table, the three dimensions explain 68.2% of the variance in usage behaviour. It is also evident that standardized coefficient beta for Social Influence is significant and positive ( $\beta = .034^*$ ,  $p < 0.05$ ), which supports hypothesis 1. Standardized coefficient beta for Performance Expectancy is also significant and positive ( $\beta = .504^{**}$ ,  $p < 0.05$ ), which

supports hypothesis 2. Moreover, for beta of Effort Expectancy, beta is significant ( $\beta = -.352^{**}$ ,  $p < 0.05$ ), supporting hypothesis

**Table 3 Summary of Multiple Regression Results for Attitude and Subjective Norm**

Independent Variables	Standardized Coefficient Beta ( $\beta$ )
<b>Social Influence H1</b>	<b>.034*</b>
<b>Performance Expectancy H2</b>	<b>.504**</b>
<b>Effort Expectancy H3</b>	<b>.352**</b>
<b>R<sup>2</sup></b>	<b>.682</b>
<b>Adjusted R<sup>2</sup></b>	<b>.662</b>
<b>Sig. F Change</b>	<b>0.000**</b>
<b>F value</b>	<b>27.438</b>

Note: \* $p < 0.05$ , \*\*  $p < 0.01$

Dependent Variable: usage Behaviour of E-Government services (UB)

### **Study Discussion**

#### **Social Influence and Usage Behaviour**

In examining the hypothesis which related to the effect SI on UB results found that SI has effect on UB. Expectedly, this finding supports H1 at the positive significant effect hypothesised. Previous empirical studies recommended that SI should play a critical role with regards to the adoption or use of new technology such as E- Government.

#### **Performance Expectancy and Usage Behaviour**

In examining the hypothesis which related to the relationship between PE and UB, the result implies that the effect of PE on the UB has a significant impact on the UB. However, this result supports the hypothesized relationship as postulated in H<sub>2</sub>. The finding suggests that individual performances can be improved when the individual use the EG services.

#### **Effort Expectancy and Usage Behaviour**

The past literature confirms that EE is important factor in the IT adoption in different countries (Abdul-Rahman *et al.*, 2011). The degree of EG services is perceived as relatively easy to understand and use in Iraq.



## Finding

The findings of the study would practically and encouragingly contribute to the top management in the ministry of higher education decisions in Iraq especially over the course of adopting an EG. It would also provide empirical lay down for the decision makers of Iraq, IT practitioners, and posterity on the adoption of EG in Iraq specifically and technological adoption generally in Middle East and particularly in Iraq.

## Limitations of the Present Study

This study is proposing to include UTAUT as an underpinning theory to a determinant the effects E-Environment among employees in higher education in Iraq. Therefore, there is a need to involve another theory to measure the e-environment effects on users. In the same time, there is a lack of testing the variables that affect usage behaviour and satisfaction of users as well. Furthermore, there is a necessity to measure the electronic bank, electronic commerce, electronic learning, electronic system, electronic healthy record, electronic ticket, key card, Q-card, smart card, visa card, master card, computer/iPad adoption, mobile government (M-G), telecenter adoption, under different levels of e-environment in developing and developed countries.

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