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The Application of UTAUT2 in a Violence Context: Case Study of Republic of Yemen

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Abstract: Electronic government is the application of computers, computer applications and electronic appliances in the governing activities and operations of a government; whereby both the government and the public interact transact electronically. Yemen being tagged as a violence area has received lesser related studies on practicability of EG. Variables like infrastructure, social factors, security, users behaviour and the more are to be determined majorly before the adoption of EG as a technological package. With the theoretical perspectives of the Unified Theory of Acceptance and Use of Technology2 (UTAUT2) this study is aimed at investigating the related variables that could mitigate the adoption of EG in Yemen. Scores of studies have employed UTAUT2 to achieve similar objectives, but none has implemented UTAUT2 to the adoption of EG in public agencies and particularly in a violence country like Yemen. This study proposes to quantitatively examine the usage behaviour of EG in Yemen, with that, data would be gathered from Yemen being a violence area in the Middle East.

Keywords: UTAUT2, violence, EG, Adoption.

INTRODUCTION

Electronic government is an electronic application with the main orientation of serving beneficiaries faster and wider than the traditional governmental settings can offer. Khan (2010) posited that there is a significant affection between the violence and the successful adoption of EG, but still there is no explicit proof on

whether violence can affect the adoption EG. The present rowdy and unbalance nature of Yemen therefore necessitate the effort to examine what effect the violence in Yemen could contribute to the adoption of EG in Yemen. In that purpose, this study will adopt the theoretical perception of UTAUT2 to examine the adoptability of UTAUT2 in Yemen and in that course, will elaborately explain the type of violence and conflicts in the world.

CONFLICTS TYPES

Pedersen (2002) explains that the world is increasingly witnessing different types of conflicts, several numbers of developing countries are burning from the flames of civil war and violence such as Afghanistan, Burma, India, Iraq, Myanmar, Nigeria, Pakistan, Philippines, Russia, Somalia, Sri Lanka (HIIK 2008), Syria (Pasternak, 2013) and Yemen (Lewis, 2013). Reportedly, several more are still going to witness the burning. HIIK (2008) estimated that among the 345 conflicts and crisis ongoing globally, the intrastate amounted to the largest and interstate attract a very minor number. The estimate is also presented that up to 111 conflicts are ongoing within Asia and Oceania, while Africa is staging up to 79 conflicts, 65 conflicts in being stages also in the Europe, 47 conflicts are ongoing in the Middle East and the Northern African while 43 conflicts is estimated in America.

Obviously it takes little effort to describe the consequence of civil disorder on the country's environment, mass psychological distortion, economical setback, and sometimes lead to the total downfall of the country (state of emergency) (Pedersen, 2002; Landrigan *et al.*, 2004). Khan (2010) echo that extant information technology literatures have been negligent about the possible inference of uprising conflicts from every corner of the world on the successful adoption, and usability of technological applications and services. Meanwhile some researches there exist on the effect of organizational conflicts on the adoption of technology in the organization (Smith and McKeen, 1992). Invariably, the influence of organizational conflict on the adoption of technology is transmissible and could be potentially similar to the kind of role civil conflict plays on electronic government adoption.

Reported reasons and items justified for the occurrence of the conflict are enumerated as follows: Territory, Secession, Decolonization, Autonomy, System/ ideology, National power, Regional predominance, International power, and Resource control (HIIK, 2008).

It now becomes important to re-undergo an evaluation process to study the environmental factors that are affecting usage behavioural of EG services using UTAUT2 as the main theory. This is to also study how civil crisis and unstable environment status affect the usage behavioural of E-G services.

EG IN YEMEN

The EG will transform the traditional access and transaction of governmental services through a portal where everyone can logon anywhere and anytime. The Republic of Yemen's government, like in most other developing countries, is still trying to implement IT in its governmental agencies (Alsohybe, 2007). However, the situation of environment and politic bearers (Lewis, 2013). In order for The Republic of Yemen's government to accomplish EG services, it has adopted comprehensive, long-term strategy for modernizing its civil service (Alsohybe, 2007).

Alongside, there is a limited research on the effects of civil conflicts on adoption of technology and in particular EG services (Khan *et al.*, 2010). 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 (Almutairi, 2007), hence this study is oblige to examine the factors that inform the success and the failure of EG in Yemen as a violence area.

The Original Unified Theory of Acceptance and Use of Technology (UTAUT) in Context

The aim of this study is to explore the theoretical perspective of UTUAT in the context of a violence area. The adoption of EG would be examined in while employing the theoretical elements of UTAUT to set the paradigm of the examination (Venkatesh *et al.*, 2003). Further noted that same theory and same variables have new knowledge and different results in different countries with different cultural background and (Alvesson and Karreman, 2007; Faaeq, Ismail, Osman, Al-Swidi and 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 the 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 acceptance studies.

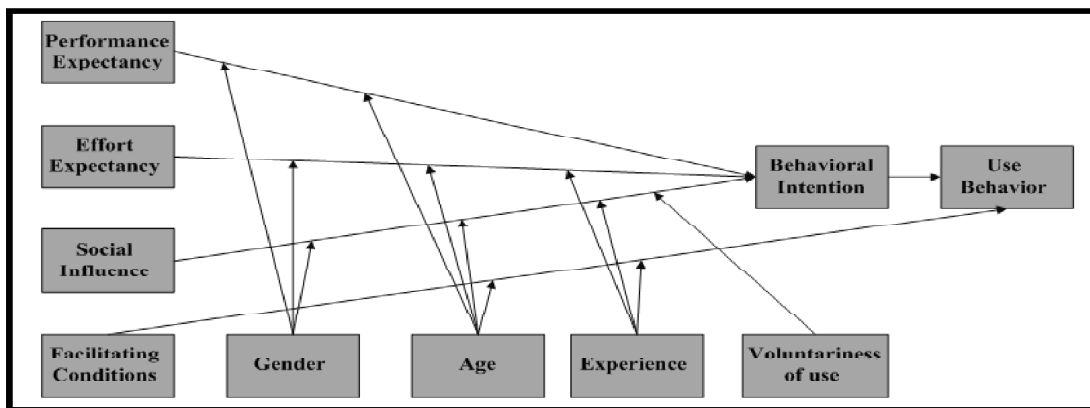


Figure 1: Unified Theory of Acceptance and Use of Technology (UTAUT)

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 *et al.*, 2007; AlAwadhi and Morris, 2008; Adulwahab and Dahalin, 2011; Maldonado *et al.*, 2011), evidently that justified it suitable for this study.

Scores of studies have examined the technology acceptance behaviour of users from developing countries (AlAwadhi and Morris, 2008; Al-Shafi and Weerakkody, 2009; Al-Shafi and Weerakkody, 2010; Yahya *et al.*,

2011). Venkatesh and Davis (2000) identified a strong relationship between successful implementation of a technology and the acceptance behaviour of the technology (Venkatesh and Davis, 2000). Similarly, (Straub, 1997) planted that successful implementation of a technology is proportionate and related to acceptance and usage behaviour. Implementations and development of a technology are an inevitable crucial stage before determining the adoption, acceptance and the usage of the technology at all (Faaq *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 and Weerakkody, 2009; Wang and Shih, 2009; Al-Shafi and 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 and Jr, 2000).

This study is designed similarly to examine the adoption and the user acceptance of EG but uniquely determine to examine the adoption through the government to the citizen (G2C) view. Hence this study would focus the governmental terms of adopting EG from transactions with the citizenry. The benefits of the EG adoption of the governmental services (renewal of driver's license, paying of summons, Q card (Key card), registering and obtaining an international passport, Death and Birth registration, according to the list of governmental services by (Carter and Belanger, 2004).

Understanding individual use and acceptance of information technology is one of the most mature streams of EG and information systems research (see Benbasat & Barki 2007; Venkatesh *et al.* 2007). Additionally, the researchers recommended to used UTAUT variables to measure the usage issues of EG among the users (citizens) (Wang & shih, 2009). There have been several theoretical models, primarily developed from theories in psychology and sociology (for a review, see Venkatesh *et al.* 2003), employed By integrating constructs from various prominent models/theories, (Venkatesh *et al.*, 2012) proposed a theory called the Unified Theory of Acceptance and Use of Technology two (UTAUT2) to explain innovation or IT tools use behaviour as shown in Figure 2.

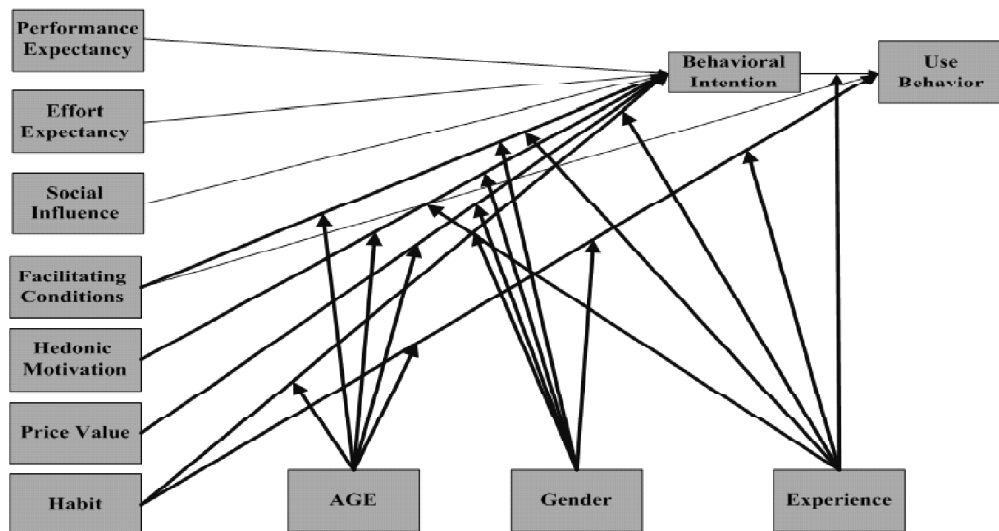


Figure 2: UTAUT 2

Resource: UTAUT 2 (Venkatesh *et al.*, 2012).

In Sum, the current study filled full literature gap regarding risky and insecure environment such as Yemen. In summary, the following Tables 1 and 2 included the previous studies that implemented UTAUT constructs among different countries.

Table 1
Previous studies that Investigated UTAUT Constructs

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
PE	√	√	√	√	√	√	√	√	√	√			√	√	√	√	√	√	√	√	√	√
EE	√	√	√	√	√	√	√	√	√	√			√	√	√	√	√	√	√	√	√	√
SI	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
FC	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√			√	√	√	√
UB	√	√	√	√	√	√	√	√	√			√	√	√						√	√	

Note: The number 1-30, studies in appendix B; “,the variable is investigated in the study, PE, Performance expectancy; EE, Effort expectancy; SI, Social Influence; FC, Facilitating Conditions; UB, Use Behaviour

POPULATION AND SAMPLING THAT PROPOSED TO IMPLEMENTATION UTAUT

The study will focus on the (G2C) services mainly, covering the range of all government services, such as social, economic, and the rest in the specific context of violence zone. Yemen citizenry from different levels of demographical features would therefore be surveyed for the purpose of this study.

FINDING

The findings of the study would practically and encouragingly contribute to the government decisions in Yemen especially over the course of adopting an EG. Moreover, would also provide empirical lay down for the decision makers of Yemen, IT practitioners, and posterity on the adoption of EG in Yemen specifically and technological adoption and acceptance in Yemen in general. Lastly, there are millions of Yemenis have been waiting for enhancement in EG services.

LIMITATIONS OF THE PRESENT STUDY

This study proposes to include UTAUT2 as an underpinning theory to a determinant the effects of violence on the environment and citizen (users) too among EG. Therefore, there is a need to involve another theory to measure the violence’s effects on users. Moreover, this study carry out one services out four, in another word this study concern on government to citizen services and there is a clear gap to measure the effect of conflicts on different types of EG services such as; government to government, government to employee and government to business. In 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 forms of conflicts in developing and developed nations.

Table 2
Summary of previous studies that Implemented UAUT among different countries

Source and Country	IV	DV	Moderator/ Mediating	Statistical Technique (Software)	Findings
1-(Venkatesh, et al., 2003) (USA)	Performance Expectancy(PE) effort expectancy (EE) Social Influence(SI) Facilitating Conditions(FC)	Behaviour Intention (BI) Use Behaviour (UB)	Gender, Age, Experience, Voluntariness of use	Regression (SPSS) SEM (PLS)	PE → BI (+)* EE → BI (+)* SI → BI (+)* FC → UB (Not) BI → UB (+)*
2-(Yahyaet al., 2011) (Malaysia)	(PE) (EE) (SI)	(BI) Actual Usage(AU)	(BI)	Correlation (SPSS)	PE → BI (+)* EE → BI (+)* SI → BI (+)* BI → AU (-) (Not)
3-(Wang & Shih, 2009) (Taiwan)	(PE) (EE) (SI) (FC)	(UB) and (BI)	Gender, Age (BI)	SEM (AMOS)	PE → BI(+)* EE → BI(+)* SI → BI(+)* FC → UB(+)* BI → AU(+)*
4-(AlAwadhi& Morris, 2008) (Kuwait)	(PE) (EE) Peer Influence(PI) (FC)	(BI) and (UB)	Gender, Academic Course, Internet Experience Mediating (BI)	Regression (SPSS)	PE → BI(+)* EE → BI(+)* PI → BI(+)* FC → UB(+)* BI → UB(+)*
5-(Al-Shafi&Wecrakkody 2009) (Qatar)A	(PE) (EE) (SI)	Behavioural Intention to Use e-government	Gender, Age Internet Experience	Regression (SPSS)	(Gender, age,)(Not) PE → BI (+)* EE → BI(+)* SI → BI(+)*
6-(Al-Shafi&Wecrakkody, 2010) (Qatar)B	(PE) (EE) (SI) (FC) Gender , Age Education Level	(BI) and E-Government Use Behaviour	(BI)	Regression (SPSS)	PE → BI(Not) EE → BI(+)* SI → BI(+)* BI → UB(+)* FC → UB(Not) EDU → UB(Not)
7-(Al-Sobhiet al., 2011) (Saudi Arabia)	(PE) (EE) (SI) (FC) Trust of the Internet, Trust of Intermediary	(BI) and Use Behaviour	(BI)	Standardized Coefficients SPSS (Version 15.0)	PE → BI(Not) EE → BI(+)* SI → BI(Not) BI → UB(Not) FC → UB(Not) Trust of the Internet → UB(+)* Trust of Intermediary → UB(+)*
8-(Abdul-Rahmanet al., 2011) (Malaysia)	Information Quality PE EE Service Quality	User Characteristics (Moderating)	Intention to Use Digital Library	Hierarchical regression analysis. SPSS (Version 16.0) Questionnaire interview	Information Quality → BI(-)* PE → BI(+)* EE → BI(+)* Service Quality → BI(-)*
9-(Venkateshet al., 2011)	PE EE SI FC	(BI) and Use Behaviour	(BI) Gender, Age, Experience, Voluntariness of use	SEM (PLS)	PE → BI(+)* FC → AU(+)* SI → BI(+)* EE → BI(+)* UI → AU(+)*
10-(Alshehr, Drew &AlGhamdi, 2012) (Kingdom of Saudi Arabia)	PE EE SI FC	BI	Gender, Age, Internet Experience	SEM AMOS 19.0	PE → BI(+)* EE → BI(+)* SI → BI(Not) FC → BI(+)*
11-(Foon&Fah 2011) (Malaysia)	PE EE SI FC Trust		Behavioural Intention	Descriptive analysis SPSS (Version 13.0)	PE → BI(+)* EE → BI(+)* SI → BI(+)* FC → BI(+)* Trust → BI(+)*

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12-(Maldonado <i>et al.</i> , 2011) (South American)	F-learning motivation (ELM) (SI) (FC)	Behavioural intention (BI)	Use behaviour (UB)	SFM (PI.S)	F-learning motivation (ELM) → BI(+)* SI→ BI(+)* FC→ UB(Not) BI →UB(+)* UB→ ELM (+)*
13-(Carlsson, <i>et al.</i> 2006) (Finland)	PE EE SI FC, Anxiety, Attitude toward using mobile device/service	Use behaviour And Behavioural intention	Behavioural intention	(principal component factor analysis, varimax-Rotation)	PE→ BI(+)* EE→ BI(+)* SI→ BI(+)* Attitude→ BI(+)* BI→UB(+)* FC→ BI(Not) Anxiety→ BI()*
14-(Wu <i>et al.</i> , 2007) (Taiwan)	PE EE SI FC	Use behaviour	Gender, Age, experience, voluntariness of use , and level of education Intention to Use,	SEM (AMOS7.0)	PE→UB(+)* PE→BI(+)* EE→UB(+)* EE→BI(Not) SI→UB(+)* SI→ BI(+)* FC→BI (+)* FC →UB(+)* BI→UB(+)*
15- (Adulwahab&Dahalin 2011) (Nigeria)	PE FE SI Management effectiveness Program Effectiveness FC	intention to use	User acceptance	(SEM) (AMOS)	PE→ BI(+)* EE→ BI(Not) SI→ BI(+)* Management effectiveness→ BI(-)* Program Effectiveness→ BI(+)* FC→UB(+)* BI→UB(+)*
16-(Chiu & Wang, 2008) (Taiwan)	PE EE SI FC computer self-efficacy, attainment value, utility value, intrinsic anxiety	continuance intention(CI)		(SEM) (LISREL 8.5)	PE→ (CI) (+)* EE→ (CI) (+)* SI→(CI) (Not) FC→(CI) (Not) computer self-efficacy (+)* attainment value→ (CI) (+)* utility value, →(CI) ())* intrinsic→ (CI) (+)* anxiety→(CI) (-)*
17- (Chen, L. S.-L., Kuan, C. J., Lee, Y.-H., & Huang, H.-L., 2011) Taiwan	PE EE SI FC	Attitude (AT)		SEM (AMOS)	PE → AT (+)* EE → AT (+)* SI→ AT' (-)* FC→ AT (-)* AT → BI (-)*
18- (Liu, G., Huang, S.-P., & Zhu, X.-K., 2008) China	Self-efficacy (SF) perceived risk (PR) Locus of control(C) perceived uncertainty (UC) system quality (SQ) information quality (IQ) service quality(VQ) (PE) (EE) (SI)	trust perception (TP) user satisfaction (S) (BI)			(SF) →(TP) (not) (PR) →(TP) (+)* (C) →(TP) (+)* (UC) →(TP) ())* (SQ) →(S) (+)* (IQ)→(S) (Not) (VQ)→(S) (+)* (PE) → (BI) (+)* (EE) →(BI) (Not) (SI)→ (BI) (+)* (SF)→PE(+)* (SF)→(EE) (+)* (TP)→(S)(+)* (S)→(BI) (+)*
19- Zhou (2011) China	(PE) (EE) Computer self-efficacy (CSE)			SEM LISREL 8.5	PEE→SAT(+)* (EE) → (CI) ())* (CSE) → (CI) (+)* (SI) → (CI) (Not)

	(SI) (FC) Attainment value (AV) Utility value (UV) Intrinsic value (IV) Social isolation (SIL) Anxiety (AN) Delay in response (DR) Risk of arbitrary learning (RAL) Continuance intention (CI)				(FC) → (CI) (Not) (AV) → (CI) (+)* (UV) → (CI) (+)* (IV) → (CI) (+)* (SIL) → (CI) (Not) (AN) → (CI) (-)* (DR) → (CI) (Not) (RAL) → (CI) (Not)
20- (Alkhunaizan & Love, 2012) (Saudi Arabia)	(PE) (EE) (SI) (FC)	Actual	Usag Intention (UI) Gender Age	partial least squares (PLS)	(PE) → Actual (+)* (EE) → Actual (+)* (SI) → Actual (Not) (FC) → Actual (Not) Cost → Actual (+)* Trust → Actual (Not) Gender → Actual (Not) Age → Actual (+)*
21- (Tan, 2013) Taiwan,	(PE) (EE) (SI) (FC)	(BI) (UB)		SPSS	(PE) → (BI) (+)* (EE) → (BI) (+)* (SI) → (BI) (+)* (FC) → (UB) (Not) (BI) → (UB) (+)*
22- (Alshehri, et al., 2012) Kingdom of Saudi Arabia	(PE) (EE) (SI) (FC)	(BI)	GEN AGE EXP		(PE) → (BI) (+)* (EE) → (BI) (+)* (SI) → (BI) (Not) (FC) → (BI) (+)*

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