Student First Name: Mubarak

Student Second Name: Alruwaie

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ABSTRACT

This study examines the role of outcome expectations and satisfaction in influencing citizens’ intention to continue using electronic government services. In order to investigate the key factors that affect an individual’s use of Information and Communication Technology within the context of electronic government, a framework combining Social Cognitive Theory and Expectation-Confirmation Theory is used to investigate satisfaction and continuity of use of e-Government services. Further, the study incorporates DeLone and McLean’s IS success model along with E-S-QUAL model to incorporate technical, organizational and Information Systems quality into this framework. The proposed framework will help in shaping further studies in cognitive, managerial and technical factors related to e-Government adoption and use. The study argues that quality and inconsistency in e-Government services affect outcome expectations and satisfaction of citizens therefore impacting its continuity of use.

Keywords
E-Government, Use, Continuity, Outcome Expectation, Satisfaction

1. INTRODUCTION

In the last three decades, the topic of electronic government (e-Government) has caused considerable debate among the research community (Heeks & Bailur, 2007). Since the emergence of e-government in the late 1990s, the public sector has invested heavily in ICT to support their work processes and enable their services. On the other hand, due to the increasing use of e-commerce in the private sector, citizens have become more experienced in the use of electronic services consequently expecting a similar high standard of service quality from government agencies. Yet, the literature suggests that individuals performance vary based on their self-efficacy and therefore have different outcome expectations related to personal or job performance expectations (Bandura, 1986). Previous research suggests that the potential of e-Government services and enabling Information Technology (IT) applications are underutilized (Carter and Weerakkody 2008). This has forced government agencies to change existing technologies or adopt other strategies that combine multi-channels for e-Government service delivery (Jasperson et al., 2005). Therefore, Coiera (2003) emphasised the role of interaction between human and computational agents and concluded that the characteristics of individual technologies, psychological and social issues can be combined to explain the overall decisions that individuals make when using technologies so that robust predictions can be made about how individuals and groups will interact.

There is a need for more appropriate measures to evaluate the success of new information systems (IS) and its links to user satisfaction (DeLone and McLean, 2003). For instance, Bandura (1986) stresses that the role of self-efficacy is a process where users can regulate their behaviour based on what they can or cannot do according to their ability and self-evaluative continuance reactions. Hence, self-regulation would help in preparing the personal
capabilities to an external interaction (e.g. e-Government systems in this study) which lead to satisfaction. However, the lack of access to e-Government systems creates a gap within different socio-economic levels and hinders citizens from gaining its full benefits (Carter and Weerakkody, 2008; Dwivedi and Irani, 2009). As an inference from this information “organisations may be able to achieve considerable economic benefits (via relatively low incremental investment) by successfully inducing and enabling users to (appropriately) enrich their use of already-installed IT-enabled work systems during the post-adoption stage” (Jasperson et al., 2005:526).

The aim of this study is to develop a research framework for evaluating citizens’ outcome expectations towards the continuous use of e-Government systems. This can be done by critically analysing previous literature in e-government and related adoption models and theories with respect to e-Government practice, and IS and services quality models. Based on literature review, a conceptual framework has been developed in order to emphasize the relationship between the organisation (government agencies) and the end users (citizens). This conceptual framework is used to highlight salient factors that influence the continued use of e-Government services. Therefore, the present study attempts to answer the research question: what are the salient factors that determine citizens’ continuance of e-Government services?. Although there are many studies of user acceptance in the area of IS, comparatively limited research exists in understanding citizens’ motivations such as personal outcome expectations as an *intrinsic* motive and satisfaction as an *extrinsic* motive to adopt and continuously use e-Government services. In this respect, there has been a lack of comprehensive models that take into consideration the personal expectations of the end users (citizens) with respect to their behavioural intentions (Hung et al., 2006).

The following are some of the theoretical and practical contributions of the present study. It can be summarised as follow:

1. Theoretical contributions:
   a. The study offers an implication to several IS streams within research aspects (e.g. adoption, acceptance, and continuity) within individual, social and organisational impact
   b. The study incorporated different theoretical models into one model (SCT, ECT, D&M IS success model, and E-S-QUAL) for evaluating continuity of use in e-Government systems
   c. The study considered personal factors, environmental factors and behavioural factors that influence continuity of based on SCT. Therefore, technology, services and personal cognitive factors are considered in e-Government adoption and continuity of use.
   d. The study offers a credit to personal outcome expectation as a standalone construct that influence satisfaction towards continuance intention and can be adapted in other external personal, social or organisational context.

2. Practical contributions
   a. The study will highlight the role of social, individual and organisation factors that influence the continuous use of e-Government systems offering guidance to decision makers
b. The study considers the influence of physiological, socio-economic, and managerial factors towards the involvement of the citizens with e-Government systems.

c. The study examines both intrinsic and extrinsic motivational factors in order to encourage citizen’s involvement in e-Government use.

d. The study simplifies the process of e-Government adoption and use through identifying and distinguishing factors that influence citizen’s use of e-Government systems and organisational related factors that influence service quality of e-Government systems. This could help in improving the efficiency and effectiveness of e-Government systems.

2. LITERATURE REVIEW

There are many definitions for e-Government in the literature and the term itself is not universally used (Verdegem & Verleye 2009). The definition that is used in the present study is the European Union (Commission of the European Communities, 2003) definition. They defined e-Government as ‘The use of ICT in public administrations, combined with organisational change and new skills, in order to improve public services and democratic processes and strengthen support to public policies.’

2.1 Prior Research on IT Usage

Venkatesh et al., (2011) suggests that pre-usage beliefs may serve as anchors for post-usage beliefs as people tend to rely on their initial beliefs and early impressions in the formation of future beliefs. In this respect, a number of theoretical models have been proposed in technology adoption studies. The Technology Acceptance model (TAM) and its major determinants ‘perceived usefulness’ and ‘ease of use’ (Davis, 1989) with adaptation of the theory of reasoned action (TRA) has been the dominant models of previous research in IS. The focus of many previous studies have been on examining the effects of user beliefs and attitude on Information Technology usage intention and behaviour (Venkatesh et al., 2003; Bhattacherjee & Premkumar, 2004; Chan et al., 2010; Venkatesh et al., 2011). For instance, the Unified Theory of Acceptance and Use Technology (UTAUT) model has integrated eight different models [Theory of Reasoned Action (TRA), Combined TAM and Theory of Planned Behaviour (TPB) (C-TAM-TPB), motivational model, TPB, Model of PC utilisation (MPCU), Innovation Diffusion Theory (IDT), and Social Cognitive Theory (SCT)]. However, there have been few studies have been done towards post-adoptive-behaviour and variables such as satisfaction and personal outcome expectations towards e-Government continuous usage. Venkatesh et al., (2011:532) stated that “ The UTAUT beliefs, except for perceived usefulness (performance expectancy), have not been considered from an ECT perspective, and it is unclear how disconfirmation of these beliefs will affect satisfaction or continuance intention.” Even though Venkatesh et al., (2011) adopted the uses of ECT with UTAUT, prior experience and outcome expectation that deal time horizon consequences have not been considered. Efforts outcome expectations that has been incorporated in Venkatesh is more likely self-efficacy rather than projection of the results of the desired action. Compeau and Higgins (1995a:134) stated that “ time horizon over which outcome expectations and performance were measured. That is, since outcome expectations focus
more on long term effects, and since the performance measure considers only short-term performance, it may be that the relationship has been artificially reduced (or negated).”

Further, the present study has distinguished the role of personal cognitive factors from environmental factor (e-Government services and information quality) which clarify where would be the weaknesses in the e-Government practice. Is it form the personal factors or from the environmental factors and hence simplify the process for managerial perspectives related issues. Therefore, D&M IS Success model and E-S-QUAL model have incorporated to close this gap in the previous studies.

2.2 Theoretical Context

Bhattacherjee (2001) looked at continuance as an extension of acceptance behaviours and addressed post-adoptive behaviour. ECT model is widely used in study user satisfaction (e.g. Hsu, et al., 2004; Venkatesh et al., 2011) and post-buy behaviour and holds that users’ intention to reuse the system as a service is determined primarily by their satisfaction with prior use of that services. Hsu et al., (2004) extended ECT by integrating it with SCT model in order to examine the motivational factors that influencing one’s intention to continue using WWW applications. Previous studies have found that ECT is based on extrinsic motivations rather both extrinsic and intrinsic (Hung et al., 2011). Therefore, SCT (Figure 1) offers an extrinsic motivation in a form of satisfaction as an attitudinal influence towards continuity of using e-Government services besides its intrinsic motivational factors such as self-efficacy.

Intrinsic and extrinsic motivational factors are crucial for decision makers (Bandura, 1986; Compeau and Higgins, 1995a). Thus, SCT can be used as a foundation of this study. SCT has been used in many studies that evaluate the performance domain (Johnson and Marakas, 2000). ‘Outcome expectation about the consequences of behaviour are a strong force guiding individuals actions’ Compeau and Higgins’ (1995a:122b). Expectancy is perceptually a driven catalyst of human motivation as it is the perception that one’s efforts possibly lead to an achievement of the desired task which is rooted in an individual’s past experience, self-efficacy, and perceived difficulty of the assigned task (Scholl,1981). Therefore, reward of achieving the task based on personal outcome expectation is probably accomplishment (intrinsic) more than social recognition or promotion (extrinsic) (Lim et al., 2005).

Figure 1. Schematization of the relationship between the three determinants of triadic reciprocal causation in SCT (Bandura, 1986).

In the ECT, Bhattacherjee (2001a) found that user satisfaction is influenced by the outcome expectation while using technology and the perceptions of the technology. Therefore, those with lower self-Efficacy are most likely to avoid practicing related tasks in the future. Further to that, an individual is more likely to adopt behaviour that is believed to bring valued
outcomes to them as a result of their consequences and actions which emphasised the role of prior experience (Bandura, 1986; Compeau and Higgins, 1995b). For further clarifications, Figure 2 provide an explanation of SCT and continuity with respect to change in the situation.

![Figure 2. projection of SCT based on changing situation (adapted from Bandura, 1986)](image)

### 2.3 Organizational context

“Incorporating contextual variables into a multistage model would deepen our understanding of the subsequent influences of these contextual variables at later periods.” (Venkatesh et al., 2011:530). Government-to-citizen (G2C) e-government service delivery is a crucial context that deals with personal cognitive factors. Hence, a higher quality service would increase satisfaction measurements and create positive emotions (Clark and Isen, 1982). There is a higher expectation from the citizens in public sector toward increasing of service quality through the portal of the e-Government comparing to the traditional channels (Schellong & Mans, 2004). The online service quality assessment is crucial for e-government services, therefore, not only services that is targeted by the government has to be examined but also the technology characteristics that is associated with its delivery to the public (DeLone and McLean, 2003). The level of service quality is more likely influence the behaviour of the consumer in the short and long run future (Hu et al., 2009). In this respect, DeLone and McLean (1992) considered user satisfaction as a key metric of IS success. Therefore, taking in consideration the previous literature, and by maintaining in reasoning with regard to the argument of the researchers, the following mechanism shows in figure 3 (personal outcome expectation, satisfaction, and continuance intention) can be seen as a mechanism of operation in this study.
3. RESEARCH FRAMEWORK

This study is stimulated by the contributions of previous theories and models, more specifically the SCT (Bandura, 1986; Compeau and Higgins, 1995b), ECT (Bhattacherjee, 2001a, Hsu et al., 2004), IS success model (DeLone and McLean, 2003) and the E-S-QUAL model (Parasuraman et al. 2005). Table 1 explains the factors employed in existing study to examine continuance intention.

Table 1. Factors Employed to in Existing Studies that Examine continuance intention

<table>
<thead>
<tr>
<th>Constructs</th>
<th>Description</th>
<th>Theory/model</th>
<th>Sources</th>
</tr>
</thead>
<tbody>
<tr>
<td>Personal Outcome Expectations (POE)</td>
<td>“Is a person’s estimate that a given behaviour will lead to certain outcome” (Bandura, 1977:193). Or ‘a judgment of the likely consequence such performances will produce’</td>
<td>SCT</td>
<td>Bandura, 1986; Compeau and Higgins 1995a/b</td>
</tr>
<tr>
<td>Self-Efficacy (SE)</td>
<td>“an individual’s perception of efficacy in performing specific computer-related tasks within the domain of general computing”</td>
<td>SCT</td>
<td>Bandura, 1986; Compeau and Higgins 1995a/b</td>
</tr>
<tr>
<td>Prior Experience (PE)</td>
<td>Bandura refers to prior experience as enactive mastery.</td>
<td>SCT/ECT</td>
<td>Bandura, 1986; Johnson and Marakas, 2000</td>
</tr>
<tr>
<td>Satisfaction (SAT)</td>
<td>Users’ affect with (feelings about) prior e-Government services use</td>
<td>SCT, ECT and D&amp;M</td>
<td>Bandura, 1986; Bhattacharjee, 2001a; Bhattacharjee &amp; Premkumar, 2004; Chan et al., 2010; Venkatesh et al., 2011.</td>
</tr>
<tr>
<td>IS Continuance (IC)</td>
<td>Users’ Intention to continue using e-Government services</td>
<td>ECT</td>
<td>Bhattacharjee, 2001a; Bhattacharjee &amp; Premkumar, 2004</td>
</tr>
<tr>
<td>Information Quality (IQ)</td>
<td>Information quality reflects the degrees of personalization, relevance, completeness, and ease-of-comprehension</td>
<td>D &amp;M/</td>
<td>DeLone &amp; McLean, 2003</td>
</tr>
<tr>
<td>Service Quality (SQ)</td>
<td>one’s judgment about a product’s services taken as a whole quality in their consideration or difference between service delivered and customer expectation</td>
<td>D &amp;M/E-S-QUAL</td>
<td>DeLone &amp; McLean, 2003; Parasuraman et al. (2005)</td>
</tr>
</tbody>
</table>
The proposed framework underpinning this study is based on SCT, ECT and DeLone and McLean (2003) IS success as well as other acceptance factors. The presented research addresses the post-adoptive behaviour which is already been modelled and influenced by factors that lead to acceptance and initial use (Jasperson et al., 2005). Figure 4 illustrate the proposed framework of the presented study.

![Proposed Framework](image)

**Figure 4: The proposed framework**

### 3.1 Instrument construction and hypotheses

The present study is guided by Figure 5 which presents the research model. The model is formulated based on SCT, ECT and IS success model as well as E-S-QUAL. Eight constructs were measured in this study (figure 5): Social Influence (SI); Prior Experience (PE); Self-Efficacy (SE); Personal Outcome Expectation (POE); Satisfaction (SAT); Information Quality (IQ); Services Quality (SQ); and Continuance Intention (CI).
3.2 Proposed hypotheses:

**H1**: There is a positive relationship between citizen’s level of prior experience and citizens’ self-efficacy towards e-Government systems

**H2**: Social influence is positively associated with citizen’s self-efficacy towards e-Government systems

**H3**: Social influence is positively associated with citizens outcome expectations towards e-Government system

**H4**: Social influence will positively influence satisfaction with e-government systems

**H5**: There would be a positive relationship between citizen’s perceived internet self-efficacy and their personal outcome expectation of continued use

**H6**: There would be a positive relationship between citizen’s information quality of the e-Government Web site and satisfaction with e-Government system.

**H7**: There would be a positive relationship between service quality of the e-Government Web site and satisfaction with e-Government.

**H8**: Personal outcome expectation is positively associated with satisfaction with the e-Government system.

**H9**: Citizen’s level of personal outcome expectations with e-Government use is positively associated with e-Government continuance intention.

**H10**: Citizen’s satisfaction with initial use of e-Government services is positively associated with their continuance intention to use e-Government services.

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*Figure 5 The research model constructs and hypotheses*
4. RESEARCH METHODOLOGY ADOPTED FOR THE STUDY

The research methodology adopted for this study will be quantitative based and will employ a survey of UK citizens and focus on e-government adoption and continuous use. In order to guide the procedure of the present study, and based on the research paradigm Figure 6 provide an overview of the procedure used in this research.

![Research design](Diagram.png)

Figure 6 The research design of this study
6. REFERENCES


