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Factors Influencing the Adoption of E-government among University's lectures in Yemen

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Abstract

The objective of this paper is to propose a conceptual theoretical model for e-Government adoption among lecturers in higher public institutions in Yemen which is one of the least studied aspects of e-Government. The proposed theoretical model uses theories from technology acceptance and success and the diffusion of ICT-related innovations. This provides a foundation for further empirical studies in developing countries particularly who have some practical issues in the adoption of e-Government. It also seeks to provide important policy and strategies to aid the adoption of e-Government particularly among lecturers in higher institutions.

Keywords: E-Government; UTAUT; technology acceptance; ICT; Theoretical model.

Introduction

Internet and the communication technology advancement in recent years has shaped the way government interact with citizens, businesses, and dealings [1]. Consequently, e-Government platforms have become possible and several countries worldwide are delivering services to citizens and businesses based on their needs at minimum cost and time [2, 3].

Over the years, e-Government initiations worldwide particularly in developed countries have increased remarkably to provide better services for people [4]. E-Government in developing countries is growing field of research and many countries now are investing substantially in implementing and adopting an effective e-Government systems [5-7].

Every government seeks to provide the best services and products to its people for to obtain acceptance and effective dealings and transactions to improve the entire service performance

of enter sectors in the country [8-10]. Therefore, governments are investing tremendous money to implement e-Government electronic services such as websites, payments, e-application, e-system, and others [11-13]. These projects usually establish an interaction platform between government and citizens, strengthen the relationship between society and government and ease people suffering especially those who live far from government offices [2, 3], [5-7], [11-14]. E-government has been divided into four categories namely: Government to citizens (G2C), government to business (G2B), government to government (G2G) and government to employee (G2E) [15-24].

Literature Review

E-Government Definition

E-government services and projects have been created by the advancement and the use of Internet, where the good access to Internet has changed the lifestyle of people around the world. For example, the e-commerce has become one of the vital projects for selling and purchasing of products and services via Internet, and for creating and maintaining online businesses (e-business) and practices both public and private sectors.

According to Heeks [25], e-government is an information system that uses information technology elements to provide facilities for the general public through Internet. These technical elements play a major role in determining the effectiveness and quality of the adopted e-government system.

Moon [26] indicated that, despite the successful implementation e-government systems worldwide, the scope and effectiveness of each e-government varies significantly among countries. Most countries have established a e-government projects on the Internet with a website however the interactivity and useability for users ranges from one way to two-way communication depending on the quality of the system and the willingness of people to adopt such technology.

Hood and Margetts [27] suggested that, successful implementation and adoption of e-government projects depend on the effective tools provided by the e-government itself in terms of the quality of information, privacy and accessibility. According to Bhatnagar [28], planning and monitoring e- government process at its early stages requires understanding of the ICT and information management.

According to Al-Shehry et al., [29], several barriers hinder the effective implementation of e-government in spite of the several benefits of e-government for people, business and organization. Thus, still several countries still experience difficulties in implementing and adopting an effective e-government [7, 30].

As indicated by many scholars such as [31-34] e-government definitions may vary based on various perspectives such as business, process, technological, citizen, government or functional.

vary according to different types of perspectives, such as technological, business, process, citizen, government or functional. The literature indicates no universal accepted definition for e-government. According to Zakaria and Gebba, [35] e-government is a public system of communication and information technologies to fulfill different e-government roles such as filing, processing and receiving of information.

Factors influencing the adoption of E-government.

Attitude Variables

1) Awareness of the system

Implementation and adoption of e-government systems in developing countries are mostly at infancy stages and are considered as a new phenomenon [36]. Therefore, before citizens can decide whether or not to adopt and use new technology, they need to become aware of e-government existence, safety, disadvantages, advantages and functionality for the public sector [37-39].

2) Compatibility

Adoption of new technology necessitates that the beliefs of people is compatible with their lifestyle and cultural values as defined by the diffusion of innovation theory [40]. Therefore, disseminating of new technology within societies is fostered by compatibility as a critical variable [41].

3) Trust

Trust has regarded as a critical variable that influence the adoption of e-government system which would affect the personal behavior to adopt new technology [42]. [43] defined trust in e-government as institutional trust that relies on the given services to satisfy citizens' need.

UTAUT Variables

1) Performance expectancy

Performance expectancy is an essential and a critical construct of UTAUT that has an impact upon attitudes towards the adoption of new technology [44, 45].

2) Effort expectancy

Effort expectancy in UTAUT summarizes the perceptions of previous experience of an individual to use ICT and is considered as a critical indicator to the adoption of e-government [46]. Effort expectancy explains whether or not the services provided by the e-government systems are easy to use or not and how users interacts with the software and if is cost effective as well [24].

3) Social influence

In previous studies, the influence of society is an important attribute to the adoption of e-government. The importance of social influence affects the adoption of e-government [44, 47]. Social influence plays a major role in the use of new technology and in this study, it is investigated in terms of the use of e-government among lecturers in higher institutions.

Technology Quality Variables

1) Computer self-efficacy

Computer self- efficacy is considered as a critical variable to determine the adoption of e-government system among citizens [48, 49]. It is also considered as a specific type of

self-efficacy that has impact on the technology behaviour of users. It is defined as the ability of an individual to mobilize the cognitive resources, motivation, and course of actions required to deal with specific situation or task which determines individual judgment of their capabilities to use computer in various situations [50, 51].

2) Quality of Information

The information quality provided by the e-government projects influence the citizens to adopt such technology. Indeed, user acceptance to adopt new technology depends on website quality, features of the system, accessibility, security, and accurate information [48, 49].

3) System quality

System quality represents the system processing of the information, and service speed delivery, ease of use, control and enjoyment and is considered as a significant variable [52-54]. System quality measures the desired characteristics of e-government system or software in terms of its functionality, availability or resources, speed, cost, and uniqueness. All these characteristics of the system can be perceived by users when deciding to use and adopt of new technology [53, 55].

Adoption Theories and Models

Individual acceptance to adopt new technology is a crucial factor for the successful adoption and use of e-government systems. The ability of user to interact with the technology has been addressed by scholars and several theories have been proposed [46]. In e-government field of study, there is no universal model that integrates the salient constructs relating to citizens' adoption of e-government. These theories are the Theory of Acceptance and Use of Technology (UTAUT) [46]; the Diffusion of Innovation Theory (DOI) [56]; Theory of Reasoned Action (TRA) [57]; the Technology Acceptance Model (TAM) [58] and the Theory of Planned Behaviour (TPB) [59, 60].

These theories are considered the backbone to this study to identify the salient factors influencing the e-government adoption among Yemeni citizens and are presented in the following sections.

Theory of Reasoned Action (TRA)

The Theory of Reasoned Action (TRA) is one of the basic psychology theories that can be used for evaluating human behavior [61]. Lean et al., [43] argued that, TRA is vital theory to assess the personal behavior towards utilizing and acceptance of computers. The theory states that the belief of an individual influences on human intention and actions (Figure. 1).

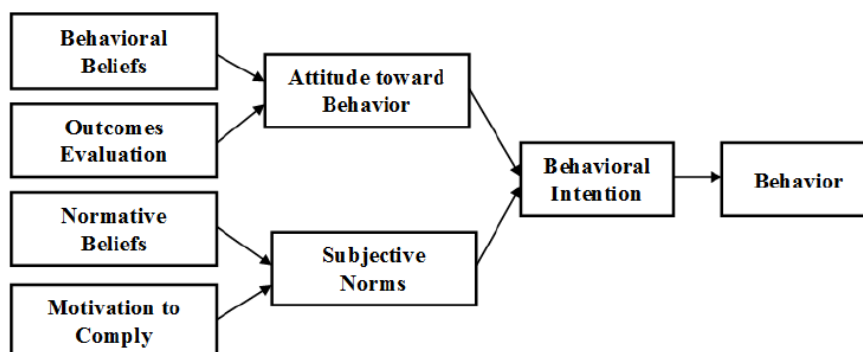


Figure 1 TRA model

Theory of Planned Behaviour (TPB)

TPB is proposed to extend and overcome the limitations of TRA theory to cover people with little control over their behaviour by Ajzen [60]. Author added another construct known as the degree of perceived behavioural control to express the degree of perceived ease or difficulty of performing the behaviour [62] (Figure. 2).

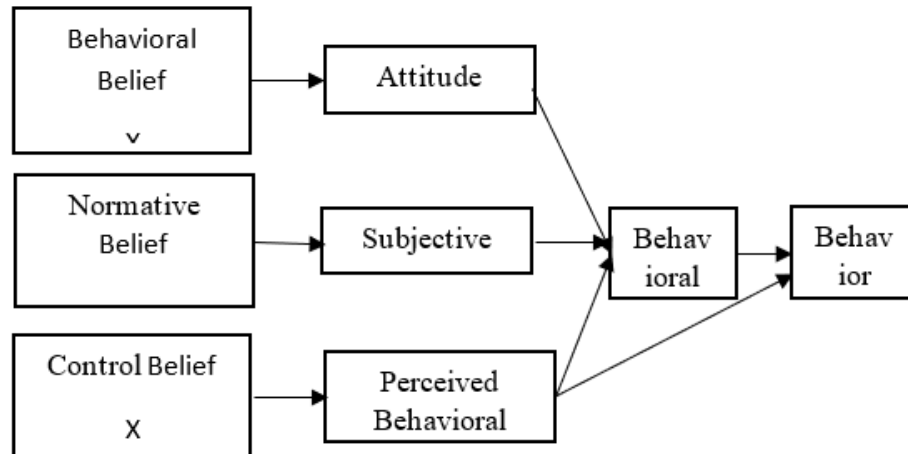


Figure 2 TPB model

Diffusion of Innovation Theory (DOI)

Diffusion is defined by Rogers [41] as a process by which a communication of new innovation occurs via channels over time among the members of social society and the innovation as a practice, idea, or object that is perceived as new by an individual or other unit of adoption (Figure. 3).

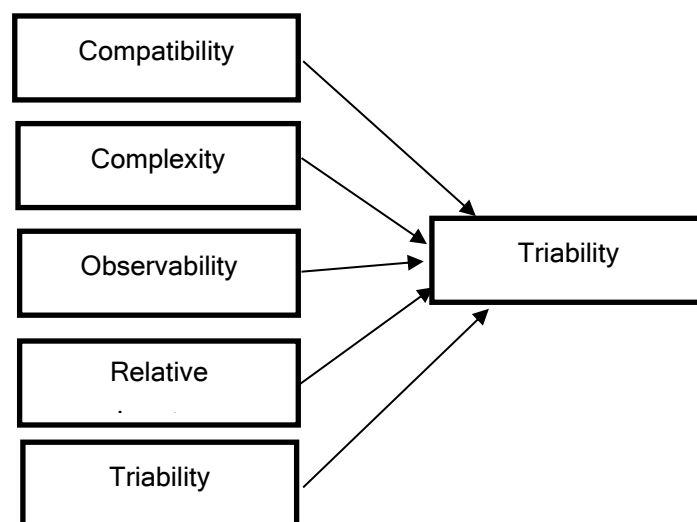


Figure 3 Diffusion of innovation theory (DOI) [41]

Technology Acceptance Model (TAM)

TAM was developed by [63] to predict the technology acceptance by employees of an organization. It was developed based on the psychological theory of reasoned action (TRA)

devised by [64], which states that, belief influences intention and intention influences action. TAM theory focuses on the personal intentions to use and adopt technology (Figure 4).

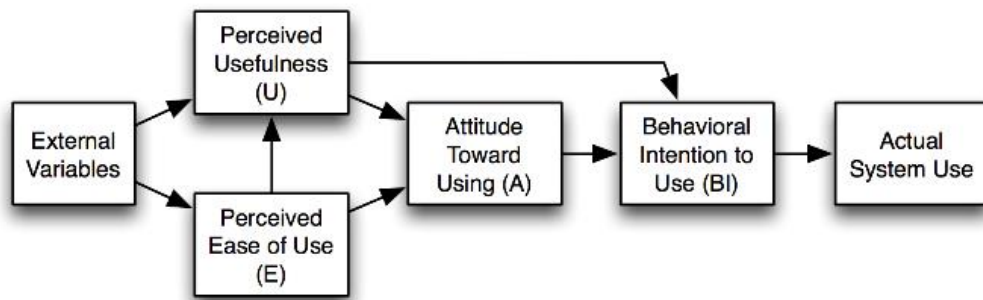


Figure 4 TAM model

Unified Theory of Acceptance Model and Use of Technology (UTAUT)

UTAUT was developed by Venkatesh et al. [46] as a comprehensive theoretical model that explains 70% of the technology usage and integrates up to eight models of technology and human behaviour (Figure 5).

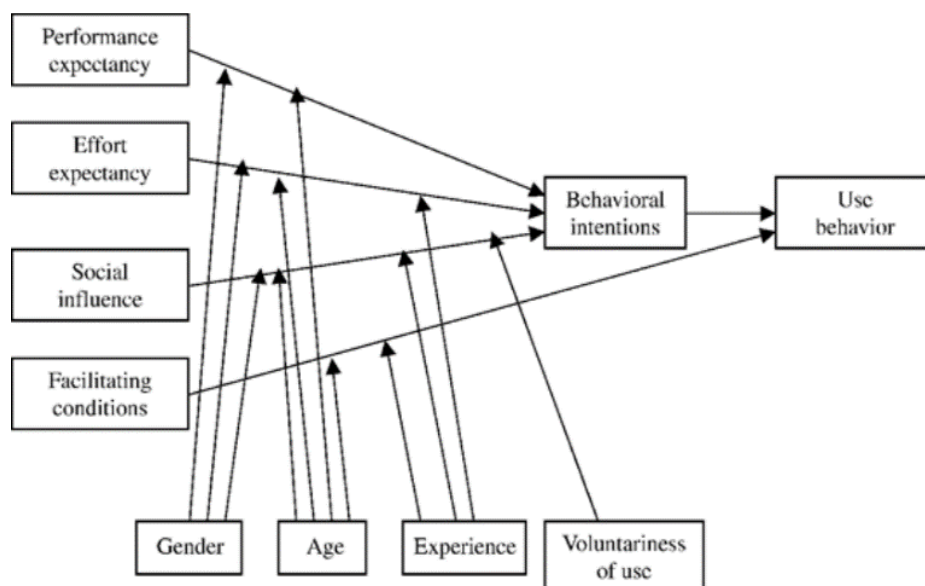


Figure 5 UTAUT model [46]

Methodology

Proposed Framework

Based on literature, there is a scope of research to develop conceptual research on factors influential e-government adoption among lecturers in public universities in the Republic of Yemen. Thus, the scope of this research is limited to G2C in developing counties, particularly in Yemen.

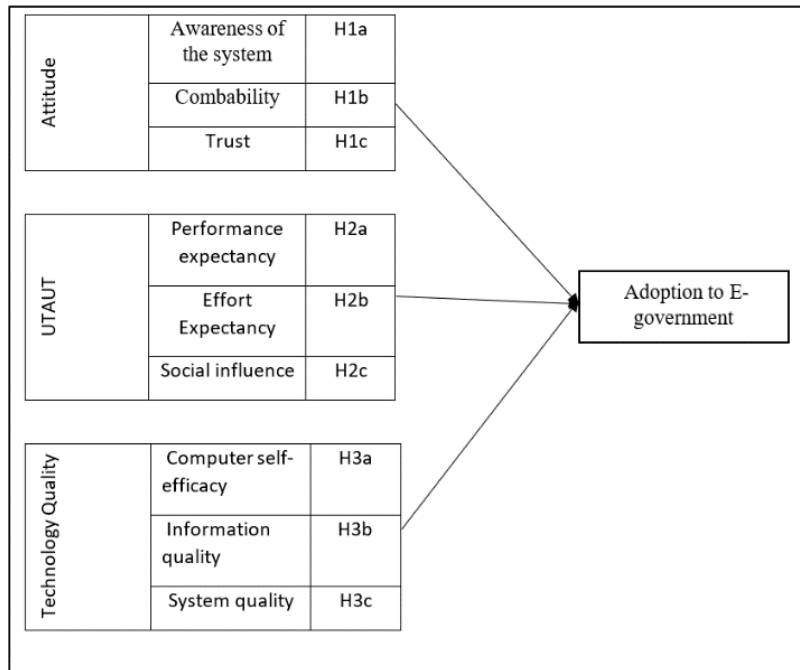


Figure 6 Research Conceptual framework and hypotheses testing

Hypotheses

H1: Attitude factors (awareness of the system, compatibility, and trust) have a significant and positive influence on e-government adoption among lecturers in Yemen public universities.

H1a: Awareness of the system has a significant and positive influence on e-government adoption among lecturers in Yemen public universities.

H1b: Compatibility has a significant and positive influence on e-government adoption among lecturers in Yemen public universities.

H1c: Trust has a significant and positive influence on e-government adoption among lecturers in Yemen public universities.

H2: UTAUT factors (performance expectancy, effort expectancy and social influence) have a significant and positive influence on e-government adoption among lecturers in Yemen public universities.

H2a: Performance expectancy has a significant and positive influence on e-government adoption among lecturers in Yemen public universities.

H2b: Effort expectancy has a significant and positive influence on e-government adoption among lecturers in Yemen public universities.

H2c: Social influence has a significant and positive influence on e-government adoption among lecturers in Yemen public universities.

H3: Technology quality factors (computer self- efficacy, information quality and system quality) have a significant and positive influence on e-government adoption among lecturers

in Yemen public universities.

H3a: Computer self- efficacy has a significant and positive influence on e-government adoption among lecturers in Yemen public universities.

H3b: Information quality has a significant and positive influence on e-government adoption among lecturers in Yemen public universities.

H3c: System quality has a significant and positive influence on e-government adoption among lecturers in Yemen public universities.

Sampling Method

This study quantitatively investigates the effect of attitudinal UTAUT and technological factors that impact of e-government adoption among lectures in public Yemeni universities. Data collection is conducted by a self-administrated survey to the lecturers at public Yemeni universities through a stratified random sampling technique.

Questionnaire Design

The design of the survey questionnaire involves the followings: The first part concerns on demographic variables (ag, gender, experience, and education level) which is the moderating variable. Second part is the dependent variable which seeks to attain the respondent's information about attitudinal factors (awareness of the system, trust, and compatibility), UTAUT factors (performance and effort expectancies and social influence) and technology factors (information quality, system quality and computer self-efficacy). The third part is about the e-government adoption as the dependent variable. Figure 6 shows the conceptual framework of this study.

Conclusion

This paper proposed a conceptual framework to investigate the adoption of e-government projects among lecturers in Yemeni public universities. Two theories were considered namely the TRA and UTAUT to integrate the salient components of the proposed framework. This theoretical contribution establishes a foundation study in assessing the factors which influence the adoption of e-government projects particularly in higher insinuations. This study provides practical implication for aiding Yemeni government particularly and developing countries generally to improve their e-government systems to suit people needs. It may guide further research in the field of higher education and public sectors as it integrates two important theories and catalyses several important constructs.

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