E-Learning Adoption Successfully Among Adult Workers In Arab Open University Jordan

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Abstract: The purpose of this study is to examine the factors that influence e-learning adoption levels in a Jordanian education institution and modified the two theories of the DOI and D&M IS to examine the e-learning levels. This study identified the technological such as relative advantage, compatibility, complexity, information quality, system quality and service quality and organizational include top management support, structure and culture that influences the adoption of e-learning among working adults. A total of 502 adult workers currently pursuing their study at Arab Open University in Jordan were selected to be the sample for this study. Questionnaire was employed as the data collection approach for the present study. The research framework has been validated by a previous empirical study based on a questionnaire. Based on the results of this study, technological and organisational have a strong significant influence on learning adoption levels by different groups.

Keywords: Organization; DeLone & McLean IS; Roger's DOI model; E-learning Adoption Model

1. INTRODUCTION

The technological progress has led to the emergence of new methods and ways of teaching and learning. Electronic learning or e-learning is a common term used to describe the use of any electronic means in the area of education. Stephen (2001) highlighted that e-learning has a wide range of learning strategies and technologies; from CD-ROMS, videoconferencing, TV lectures, and virtual education based on web semantics. According to Bahlis, (2002) and Wentling, (2002) e-learning is teaching and learning process whether through the web, or other electronic means such as computer, laptop or other electronic mobile gadgets. Gunasekaran, Ronald, Dennis (2002) conceptualized e-learning as internet enabled learning. Components comprised of content delivery in multiple formats, management of the learning experience, and a networked community of learners, content developers and other information system experts who worked in tandem to enable e-learning. The benefits of e-learning include provide learning opportunities to all at a reduced cost, increased access to learning for disadvantage groups due to geographical location. Furthermore, the participants of e-learning will not be constrained by location and time because learning can be determine by their pace. In addition, e-learning has the potential to provide quality education, producing competitive workforce and increases the level of literacy among citizens. Lee (2009) argued that e-learning has different benefits over traditional classroom study. According to him, e-learning is much faster, less expensive; create more interest among participants because participants could obtain information or feedback at any time, place involving a large group of students at any one time. The benefits of e-learning can be summed up by to Alexander (2000) as follow; Improving the quality of learning, Improving access to education and training, Reducing the costs of education and Improving the cost-effectiveness of education.

2. PURPOSE OF THE STUDY

There are numerous factors that can affect the acceptance and rejection of e-learning. The benefit of e-learning has given many of opportunities to country such as United States and United Kingdom which provide mature education system. Jordan is one of developing country that has adopted e-learning system in several higher educations. Developing countries including Jordan have limited potentials to apply this technology such as e-learning due to lack government stability and financial resources as well as to contain a sizable infrastructure that are reflected in our review of literature on e-Learning. However, e-learning adoption in Jordan is still low. Although, e-learning provides several benefits, literatures have highlighted that learning are influenced by a number of factors such as relative advantage, complexity, information quality, system quality and service quality and organizational include top management support, structure and culture . Hence, this research aims to examine the main factors that influence the e-learning adoption.

3. LITERATURE REVIEW

Frimpon, (2012) and Wu et al., (2012) show that our understanding of what drives e-learning among student in general and adult worker in particular, especially in developing countries, is limited by the absence of rigorous research. In 2000, the British Government launched USD 113 million to establish an e-learning program for United Kingdom e-University (UKeU). The British Government in 2004 announced that e-learning adoption system in UKeU had failed due to it did not meet recruiting targets. In another reason, numerous educational institutions have not measured this important issue of evaluating e-learning adoption systems (e.g. system quality, information quality & service quality) and outcomes of e-learning adoption for failure and factors that drives e-learning adoption systems (Rovai and Downey, 2009; Alsabawy, Steel & Soar, 2011). Altarawneh (2011) reported that organizational issues account for 70% of e-learning adoption system im-plementation problems. These organizational issues are insufficient funds to develop e-learning adoption system (83%), a lack of e-learning adoption system strategies and

politics (67%), a lack of clear, accessible communication channels (51%), a lack of interest regarding e-learning education (49%) and a human resource strategy (43%). Additionally, studies exploring the critical success factors of implementing e-learning adoption system in organizations reported that organizational factors are important for e-learning adoption success, such as business process redesign, organizational culture, structure and top manager support (Chen & Hsiang, 2007; Sela & Sivan, 2009; Sela & Sivan, 2009; Elliott & Clayton, 2009; Admiraal & Lockhorst, 2009). It can be concluded that e-learning adoption success depends on the support of other participants in organizations, such as the human resources, finance, and technology divisions. Thus, organizational factors cannot be ignored when considering the sustainability of e-learning adoption (Netteland, 2009). Therefore, there is a need to examine such antecedent factors by applying more than one model. In this regard, this study will focus its attention on two major factors which are the organizational, technological that influence on e-learning adoption by difference groups. The purpose of the next section is to discuss the factors contributing to the e-learning success adoption identified from previous studies.

A. DIFFUSION OF INNOVATIONS with D&M

According to Rogers (1995) innovations are perceived to have attributes that have an impact on the decision to adopt, implement and use the innovations. Five characteristics of innovation were identified by Rogers (1995), which impact on individual's attitude in the adoption process. These attributes are relative advantage, compatibility, complexity, trialability and observability as shown in Figure (1). Relative advantage is the degree to which an innovation is perceived as better than the idea it supersedes. Compatibility is the degree to which an innovation is perceived as being consistent with the existing values and past experiences. Complexity is the degree to which an innovation is perceived as difficult to understand and use. Trialability is the degree to which an innovation may be experimented. Eventually, observability is the degree to which the results of an innovation are observable to others Rogers (1995). Tornatzky and Klein (1982) had conducted a meta-analysis on 75 studies based on Rogers' five innovation characteristics and other attributes proposed by other researchers and found only relative advantages, complexity and compatibility had a consistent relationship with innovation adoption. Therefore, three characteristics of innovations of e-learning adoption will be used in this study. Nevertheless, in 1992, DeLone and McLean (1992) developed one of the most comprehensive model which is widely accepted in the IS success. His model consists of six dimensions of IS success as follows: 'System Quality', 'Information Quality', 'Use', 'User Satisfaction', 'Individual Impact' and 'Organizational Impact'. Recently, in 2003 DeLone and McLean (2003) proposed an updated their own model of the IS success by adding ''service quality'' and by grouping all the impact measures into net benefit as shown in Figure (2). The aim of this study is to integrate Rogers' attributes of innovation (compatibility, relative advantage, and complexity) with IS Delone and McLean model (information quality, system quality and service quality) for examining e-learning adoption. Due to, Rogers' attributes and IS Delone and McLean model have emerged and each

has been the basis for studies examining systems adoption. These two literature streams have numerous parallels as suggested by Premkumar et al. (1999), (2000), and others researchers.
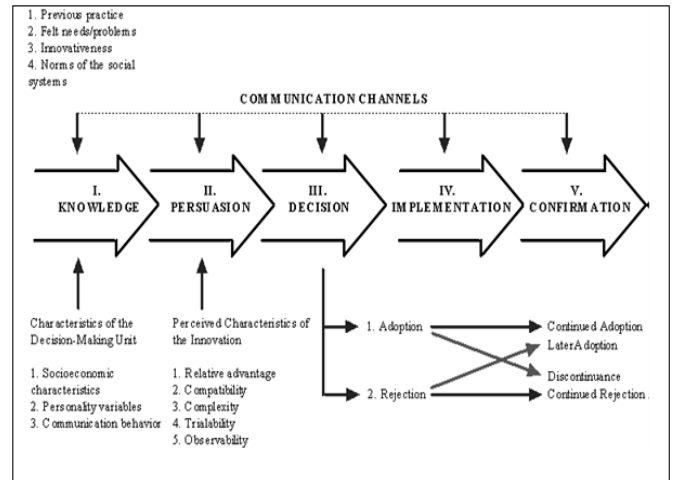
Fig 1. Diffusion of Innovations
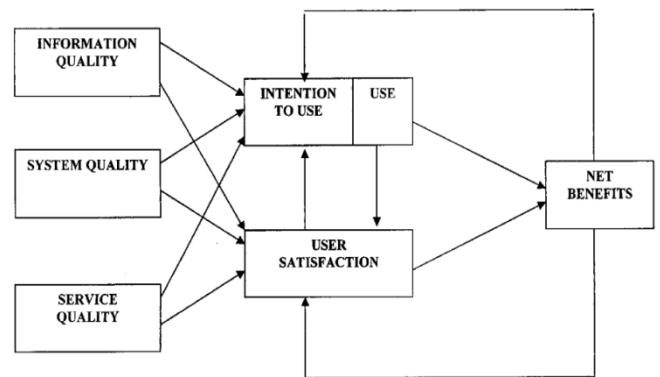
Fig 2. The updated DeLone and McLean's 2003 Model

B. Organizational Factors

Top management support is one of the most important factors that influencing organisation to adopt new imitative such as e-learning as the importance of leaders in acting as role model to use e-learning system. He mentioned that top management should show a willingness to learn and search for new knowledge and ideas so that the employees would imitate them and increase the propensity of the employees to participate in e-learning. Therefore, the role of top management support in motivating their employees to use the e-learning is critical. Understanding organisation culture is very critical for e-learning adoption and implementation success (Newton & Ellis, 2005). Cooper and Zmud (1990) have mentioned that innovation adoption is influenced largely by factors related to overall organisational culture. In the same vein, a study by Hung et al., (2009) confirmed that organisation culture is a factor positively influences e-learning adoption and implementation. Beside top management support and organisational culture, organisation structure is another important factor identified in the literature that contributes to IT adoption in general and to adopt e-learning among individuals in workplace

(Gwebu & wang 2007; Hung et al., 2009). Damanpour and Gopalakrishan (1998) identify organisational structure is one important component and it plays a crucial role in deciding the adoption and diffusion of innovation. In other words, Gwebu and wang (2007) and Damodaran and Olphert (2000) found that organisational structure is significantly associated with diffusion of innovations and adoption.

4. METHODOLOGY

In the present research, the conceptual framework as shown in Figure (3) has been validated by a previous empirical study based on a questionnaire and interview. The instrument questionnaire for data collection was used. The questionnaire is designed into seven sections, relative advantage, compatibility, complexity, information quality, system quality, service quality top management support, organisational culture, organization structure and adoption of e-learning. The sample was 502 participants who currently using the e-learning system from Arab Open University in Jordan (AOUJ) and questionnaire distribution were selected randomly as well as returns were by hand. The participants were determined the level of their agreement with each item on a 5-point scale anchors from "Strongly agree" to "Strongly disagree". Table 1 below shows that the majority of the respondents were male as they represented 57.6 percent of the sample. The rest were female who represented 42.4 percent of the sample.

Table 1
Respondents' Gender

Gender	Frequency	Percentage (%)
Male	289	57.6
Female	213	42.4
Total	502	100%

Table 2
Cronbach Alpha on E-Learning Success Adoption

Variable	N. of Items	Alpha (a)
Relative advantage	6	.946
Compatibility	5	.928
Complexity	5	.925
System quality	5	.914
Information quality	5	.856
Service quality	5	.912
Top management support	5	.872
Organisational structure	5	.934
Organization culture	6	.919

Table 2. shows the value of Cronbach's coefficient alpha ranged from .912 to .946. They are generally considered sufficient for research purposes (Hair et al., 2003). According to Sekaran (2003) the reliability of less than .60 is considered to be poor, those in the .70 range is acceptable, those over .80 are good and coefficient of 0.9 and above is considered excellent.
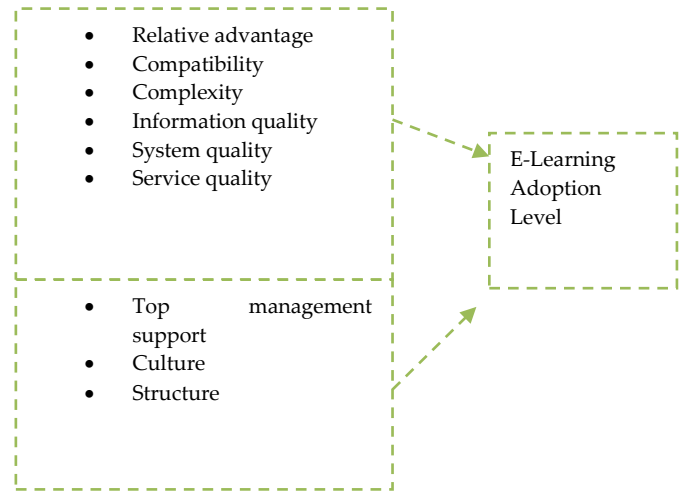
Fig 3. E-Learning Success Adoption Model

5. DISCUSSION

It has been deliberated in this research three technological factors which are associated to e-learning adoption among different groupings which are relative advantage, complexity system quality, information quality and service quality. It was discovered that relative advantage is important factors that differentiate low adopters from high adopters. Complexity is other important factors that differentiate low adopters from high adopters and moderate adopters from low adopters. Further, as far as low adopters and high adopters are concerned, five factors namely relative advantage, complexity system quality, information quality and service quality are essential factors that differentiate between low adopters and high adopters. On the other hand, there are three factors namely complexity, information quality and service quality considerable technological factor that differentiates between moderate adopters and low adopters. There are a five technological factor which were essentially related to the different groupings of e-learning adoption in respect of adult workers which involve relative advantage, complexity system quality, information quality and service quality. The results for significant factors of technological factors associated with various groups of e-learning adoption are summarised in Table 3.

Table 3. Technological Factors Associated with E-Learning Adoption

Factors	Low-adopters vs. High-adopters	Moderate-adopters vs. High-adopters	Moderate-adopters vs. Low-adopters
Relative advantage	✓		
Complexity	✓		✓
Service quality	✓		
Complexity	✓		✓
Service quality			✓
Top management support	✓		✓
structure	✓		
Culture	✓		✓

Three organizational factors were found to be associated with different groupings in respect to e-learning adoption among adult workers namely top management support, organizational structure and organizational culture. The results showed that top management support is a vital factor that differentiates between moderate adopters from low adopters and low adopters from high adopters of e-learning adoption. Organizational culture is the essential factor that differentiates low adopters from high adopters and low adopters from high adopters. Organizational structure is a vital factor that differentiates between low adopters from high adopters of e-learning adoption. The results of significant factors of organizational with various groups of e-learning adoption are summarised in Table 3.

6. CONCLUSION

From the theoretical standpoint, the results from this study were consistent with the theories and previous literature. The empirical evidence from this study contributes to the body of knowledge in the fields of e-learning. This study was undertaken with various underpinning theories. Therefore, this study contributes to each of these theories by means of supporting the theories. This study hopes to contribute to knowledge on the adoption of e-learning among working adults in Jordon in general. Generally, it gives indication of how working adults can be motivated and enhance the willingness to adopt e-learning. This study helps in providing the alternative approach toward measuring e-learning.

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