

CHAPTER SIX

CONCLUSION

6.1 Introduction

In this chapter, the discussion is particularly on the review of study, Contribution of the Study and limitations and suggestions for future research.

6.2 Contribution of the Study

The important contributions of this study are as follows:

a) Contribution to developed theoretical conceptual framework. The most important contribution of the research is toward the theoretical knowledge in the adoption of innovations and the theory of IS success. The proposed adoption framework of the e-learning is an alternative framework that explains the adoption of an innovation through two dimensions; the level of e-learning application adopted and extent of usage for each e-learning application which provides three adoption groups and relates these three groups to factors, technological, Organizational, personal and institutional forces factors as well as outcome of e-learning. At the individual-level adoption of innovations, this framework provides a broader understanding and more generic sense for the adoption of innovations. Hence, it could be applied in the adoption of different IS/IT innovations or the adoption of e-learning system in different industries.

The proposed framework contributes to the theories of the adoption of IS innovations by; (i) the level of adoption, which provides information on types of application adopted, and extent of usage for each e-learning application rather than a single perspective (adopted or not adopted), (ii) enhancing the DOI theory by adding the organizational personal and institutional forces factors as well as outcome of e-learning contexts to the theory, and (iii) modifying the variables in the organizational, personal and institutional forces factors as well as e-learning outcome in order to investigate different variables at the e-learning adoption among adult workers. These issues were typically studied separately in the literature; our results suggest the extent of e-learning usage is closely linked to factors and impacts. This unified perspective helps us to gain a more holistic picture of the adoption diffusion and consequences of e-learning adoption. 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.

Summary, grounded in the innovation diffusion literature, this study has theoretically developed and empirically evaluated an integrated research conceptual framework incorporating technological organizational, personal and institutional forces factors as well as e-learning outcome factors, for assessing e-learning usage and the outcome of e-learning among adult workers. On the other side to enrich the libraries in the Arab world with information about e- learning adoption and provide new information for other developing countries that may have a situation similar to that in Jordan. Also to

help researchers open the door for further investigations in carrying out more comprehensive studies in e-learning among adult workers in the higher education.

b) Contribution to Extent of E-Learning Adoption. The mean contributions of the present study are related to determining the level of e-learning applications adopted by the working adults. In addition, it contributes to reveal the extent of usage for each e-learning application. It aims to provide an alternative description on e-learning adoption among working adults. It is also targeted to answer the questions on what applications have been adopted among working adults and the extent these applications being used. This has filled the gap in the literature by examining the e-learning adoption among adult based on two dimensions. The approach of measuring e-learning adoption in the previous studies has basically relied on two contexts: adopted or not adopted. In fact, these studies were emphasising only upon one perspective in examining the e-learning adoption. This mean that examine e-learning adoption based on one perspective not allowing the nature of innovation adoption by the working adults to be depicted in a more holistic description.

The results of two-dimensional matrix indicated that the types of e-learning applications adopted and the extent of its usage which is determined in terms of “not using”, “used sometime”, “used most of the time” and “used all the time” provide an alternative to characterise e-learning adoption. Both of the dimensions may become the basis for classifying adult learners in future research, whereby causal models could be

built to examine the relationships between variables associated with e-learning adoption and impacts on adult learners.

An instrument on the basis of two-dimensional matrix was devised and the adaptability of the said instrument to categorize adoption has been depicted. The instrument permitted a visual approach of clustering adoption groups which was based on pattern identification. The pattern identification approach provided an alternative method to examine what applications had been adopted. Working adults with similar adoption patterns were grouped and their adoption behaviour could be described individually and collectively.

Therefore, this visual approach provided a rich source of information that reflected the nature of e-learning adoption, where adoption behaviour was discussed on the basis of level of adoption and extent of usage. The profile generated for all adult workers based on the above dimensions could enhance our knowledge on the types of applications adopted for and the extent of usage by applications.

The visual approach used in this study identified three distinct patterns and the characteristics representing three adoption groups were described individually and collectively. The first group is labelled as low-adopters; the second group is the moderate-adopters while the third group is known as high-adopters.

c) Contribution to knowledge. This research proposed and empirically tested a conceptual framework for explaining the adult workers' adoption of e-learning. In this

attempt, the study has identified, operationalised and tested a number of factors that were found directly and indirectly to play a role in explaining adoption to adopt e-learning. This study is considered one of the most updated Arab studies that facilitated the efforts of other researchers in adding new variables and contributed to the theoretical literature in defining the e-learning and its importance in the teaching and learning process. Furthermore, the study has developed and rigorously validated an instrument for measuring adult workers' adoption and perceptions towards adopting e-learning. Moreover, this research has expanded knowledge with regard to the topic of the adoption of technology within the Jordan context, where there has been no research on the factors influencing the adoption of e-learning amongst Jordan tertiary adult workers to date. The findings of this study have also revealed that the DOI is a valid theory to explain adult workers' adoption to adopt e-learning. Nevertheless, the study's conceptual framework contributes to the education environment in terms of the critical factors that influence the adoption and use of e-learning. The outcome of the study would encourage researchers to conduct similar studies and investigations, more e-learning factors that could influence the education environment. Some factors could be adapted based on the increase innovational e-learning technology.

d) **Contribution to practical perspective.** This study has contributed to a better understanding of issues pertinent to e-learning adoption. It has also shed light on the factors that might drive or inhibit the adoption of e-learning initiatives in tertiary education. The research can be of value to University e-learning management and policy-makers in that, it offers information that would help the successful implementation of the

current e-learning projects. The findings may also help in setting strategies to promote e-learning adoption amongst potential adopters. Similarly, the results of the study can be of value to e-learning systems developers and designers. For example, its findings can offer guidelines for the design of e-learning systems that would be more accepted by future e-learners.

The findings have implications for the measurement of Arab Open University in Jordan (AOUJ), working adult themselves who depend on e-learning. Besides that, the e-learning adoption profile characterized in the present research provided an overview of e-learning adoption among working adult. In addition, the findings have implications for Arab Open University in Jordan to improve their e-learning system, Jordanian government can use this study for future policy planning, e-learning renders can use this study to improve the developed of e-learning applications for adult workers who are work fulltime and study part-time and a clear understanding of the factors positively or negatively that drive e-learning adoption among adult workers is important to help government and institution to undertake decision for future paining strategies and to improve existing practices on teaching and learning.

e) Contribution to methodological. The methodological contributions represent in the development of the measurement items of the adoption of the e-learning system benefits. These items have been developed involving an extensive review of the literatures and have been reviewed and validated by specialized personnel in the e-learning and IT disciplines. Future studies may adapt or adopt these items to measure the adoption or the implementation plan factors in the same country or other country.

6.3 Limitations, Future Research Directions and Conclusions

In evaluating the outcomes of this research, it is inevitable to view the findings in the weight of the following limitations. The strength of this study is in the acknowledgment of its limitations. Those limitations lead to suggestions for future research and clarify the theoretical implications. This research contributes to the body of knowledge in that it looks into the essence of e-learning adoption among working adults in Jordan. As the implementation of e-learning in the Jordan academia is still in its infancy phases, further research in this area is needed. The researcher has classified the limitations of this study into two main parts, which are geographical limitation and methodological limitations.

Since this study was conducted on e-learning adoption among working adults, the researcher suggests that future studies should be done on e-learning adoption among other working adults groups or other respondents which may give rise to other significant findings. In addition, the researcher suggests that more studies need to be carried out on other factors, which had been used in this research to resolve the responsiveness and personalization.

One of the limitations that were faced by the researcher while conducting this study was the lack of prior relevant research. This means that this research is not as strongly grounded due to lack of prior research. Moreover, participants may possess certain attributes that differ from those in other parts of the world. Future research may use more diversified sampling in future study. In terms of the methods which were used

by the researcher to investigate the e-learning adoption, it is suggested that future studies use the both quantitative and qualitative methods.

The study has provided empirical evidence of e-learning applications being abandoned after their initial adoption. Prior e-learning studies mainly focused on identifying factors that motivate adoption. Few studies have explored the issue of abandonment, specifically in e-learning. As a result, there is a lack of knowledge and understanding about the nature of e-learning abandonment. In order to gain a comprehensive understanding of adoption, future research should explore the subject area of innovation abandonment and identifying factors that influence adult workers' decision to discontinue innovations.

The present study is considered as an exploratory study, and it attempts to give a better understanding on the e-learning adoption profile among working adults in Jordan. It also intends to propose a conceptual framework for e-learning adoption among working adults in Jordan. Effort was made to ensure that all relevant e-learning applications are included in the framework adoption. However, there might be other possible adoption factors, which can be included in the framework but may have been overlooked and have not been taken into account. Therefore, it is recommended for future research works to examine these factors, which may affect the e-learning adoption in Jordan.

The present study is a cross-sectional study and attempts to examine the adoption groups determining factors that motivate e-learning adoption and its impacts on working adults. The factors and influences constructs have been measured according to respondent

perceptions at one point in time. Although every effort has been taken to reduce this shortcoming in the design of these constructs in the survey, the risk of some of the factors or impacts relevant to the study could have been overlooked.

Causal relationships are difficult to establish under a cross-sectional study. Therefore, future studies may adopt qualitative research such as ethnographic studies of a small number of working adults that adopt e-learning. This will enhance our knowledge and understanding on the factors relevant to e-learning adoption and its effects to the adopting adult workers.

Furthermore, this is an empirical study, and the research model provides a way of viewing the real world, i.e., in simplified form. In the complex world of learning, there are potentially other factors that could influence the adoption of e-learning and implications for working adults. However, for the purpose of this study, these factors are controlled. In other words, the adoptions, and the links between e-learning adoption and working adults' impacts, are hypothesized to exist.

The respondents were drawn from a single university in Jordan. Therefore, the findings derived from this study may have limited ability to be applied to other university. In order to have a complete picture of e-learning adoption, future research should also be conducted on other phenomenon in educational environment such as higher institution education, and schools. Finding from other organizations would be useful in providing a comparison of the nature of e-learning adoption between other organizations.

Manochehr (2006) found that the students' learning style is an important factor to be considered in an e-learning environment. Thus, learning styles may be one important personal factor in understanding the students' intention to adopt e-learning and should possibly be considered in future research. Another direction for research could be to adopt other models for explaining the adoption of e-learning, for example, the Self-Determination Theory (Deci & Ryan, 1985); the Triandis Model of Choice (Triandis, 1977); and the Personal Computer Utilisation Model (Thompson, Higgins, & Howell, 1991).

The research model of the current study has integrated two theoretical research streams, which are TOPS and the literature on DOI. Hence, this research can be a starting point for further research focusing on the adoption decisions of other technologies such as technology competence, image, and technology readiness. In addition, the previous theoretical framework of innovation diffusion has been less effective at the adoption decision of e-learning. On the other hand, it is believed that this framework could be used to explain the adoption of other technologies (delivered via World Wide Web and others). In terms of the obstacles of adoption, the factors referred to the organizational perspective have been found to be insignificant in this study although still a sufficient theory for understanding successful technology adoption. However, it is important to continue to explore other model factors in future studies.

6.6 Concluding Remarks

The present research has enhanced our understanding on e-learning adoption, as it has generated a thorough sector-specific analysis of internet adoption who are adult employees in Jordan who work full-time and learn part-time. In addition, a research instrument based on a two-dimension exhibiting presents stage of e-learning adoption as well as the extent of usage. The present stage of adoption was represented by three stage of e-learning adoption. This instrument is suitable upon the reason that it enables metric data to be assessed using a visual approach cluster to determine adoption patterns. The study which describes and determines e-learning adoption will become increasingly important owing to the growing acceptance of e-learning among adult employees. Hence this study is expected to be a move towards that objective.