

CHAPTER V

CONCLUSION AND RECOMMENDATION

5.1 Introduction

This chapter recapitulates the findings, followed by a relevant discussion on said findings. The limitations and future research directions are explained. This chapter ends with study contributions and the conclusion.

5.2 Contributions of the Study

This research has many valuable theoretical, practical and academic contributions. Thus, the main contributions of this research are described as following:

5.2.1 Theoretical Contribution

This research attempted to examine the factors that influence on acceptance of m-learning services in the institutes of higher education in Malaysia. Many studies were done on mobile learning services. On the other hand, there are very few studies regarding the factors that influence on the acceptance of m-learning services in the institutes of higher education in Malaysia. The current study aims to bridge the gap by determining the factors that influence on the acceptance of m-learning services. The results suggest that all factors contributed to influence on the acceptance of m-learning services. The

proposed research framework was empirically tested regarding the acceptance of m-learning services in the institutes of higher education in Malaysia.

- The Technology Acceptance Model (TAM) and its compatibility from the theory of Innovation diffusion (IDT) have efficaciously been expanded and validated in this research. Aside from that, the model's appropriateness in determining, predicting, and comprehending the factors that affect the student's' m-learning acceptance in the context of higher education in Malaysia has been reaffirmed. Additionally, as proposed by (Davis et al., 1989) and Rogers (1962; 1983; 1995; 2003) testing TAM and IDT with extra factors would generate deeper comprehension on the users' acceptance and behaviour towards technology use and in fact, in the context of this research, it is regarded as an effective crucial factor of TAM's expansion and compatibility from IDT. As such, the factors examined have in fact significantly contributed in offering a richer comprehension on how the aforesaid factors affect the acceptance of students, and also how taking into consideration of the aforesaid factors could enhance the acceptance of students towards the m-learning system use. In the context of higher education in Malaysia, particularly in the domain of m-learning, TAM's applicability and validity, and compatibility from IDT have been reaffirmed. In particular, the factors of compatibility and perceived ease of use impart impact on perceived usefulness, and these three constructs are found to significantly affect m-learning acceptance via the impacts of behavioral intention to use.

- Employing TAM and compatibility from IDT, numerous researches have explored the topic of students' acceptance. However, researches that particularly look into the impacts of demographic variables are still limited. As such, the current research probes into the impacts of the demographic variables proposed, on the acceptance of students towards m-learning.
- Moreover, instead of examining the demographic variables' role as moderators or antecedents (as previously done by many scholars), this research intends to probe into the direct effects of it on the acceptance of students towards m-learning. In particular, the variables (demographic variables) examined in this research include students' background, gender, and age. As such, system designers and higher education stakeholders. Apart from that, the forthcoming scholars could test and scrutinize the impacts of the significant demographic variables to play the role as moderators in the relationship between the recommended factors and the behavioral intention of students in utilizing m-learning.
- The aforesaid significant factors were drawn from substantiated studies and eminent theories. Therefore, deeper comprehension on the nature of the past relationship between these variables and the TAM and compatibility from IDT constructs could be provided; it could particularly indicate whether it is in agreement with or contradictory to the outcomes of the past studies. Aside from that, the outcome could also demonstrate the worth of the investigated variables in comparison with the recommendations and suggestions of the previous studies. In theory, this research looks into the indirect influence of the aforementioned factors

on the acceptance of students towards m-learning. As such, it is imperative that these factors are directly investigated.

- A model for developing mobile learning services in the institutes of higher education in Malaysia. Based on the identified vulnerabilities, it will be easy to build a convenient model to solve issues and vulnerabilities mobile learning services in the institutes of higher education in Malaysia.

5.2.2 Practical Contribution

This research attempts to examine the influences independent variables (IV) and dependent variable (DV) relationships of model on institutes of higher education in Malaysia. This research explains the importance using factors in achieving acceptance of m-learning services. In brief, the findings of the study would serve as major contributions to institutes of higher education in Malaysia, such as:

The findings of this research have revealed several important implications for mobile learning services. Furthermore, it could be argued that, from a practical point of view, this research has provided several contributions to resolve the poor levels of success from mobile learning services. This research is also valuable for its ability to provide useful guidelines to explain the factors that could enhance the use of mobile learning services in the institutes of higher education in Malaysia. Accordingly, students can derive a better understanding of the factors influencing the using mobile learning services and what they need to focus on in order to improve the mobile learning services.

1. Investigating students' awareness and requirements regarding of mobile learning services in the higher education environment
2. Assessing factors and variables that could influence the acceptance of m-learning services among the students.
3. Identifying the relationship between compatibility and perceived ease of use on perceived usefulness.

5.2.3 Academic Contributions

This research is considered as one of the very few studies conducted on the acceptance of m-learning services in the institutes of higher education in Malaysia. The review presents the mobile learning challenges, comparison between existing models, and highlights the gap analysis in existing models on higher education environment. The aim of this review is to determine the strengths and weaknesses of each model, which serve as the basis for proposed model. The academic contributions made by this research are described as follows:

- One main original contribution of this research is an in-depth understanding of the factors influencing the m-learning services. To the best of the researcher's knowledge, a review of the literature in the field of the m-learning services revealed the need for more empirical research; hence, this research integrates and extends the studies conducted in this area which addressed the issue of the m-learning services in general and behavior intention to use in particular. Further to that, this research is one of the unique studies that have been carried out in the

domain of m-learning, as it includes samples from the Islamic Universities in Malaysia.

- There is limited study that contributes to knowledge as being the explanatory empirical study carried out into the mobile learning services in institutes' higher education in Malaysia. Therefore, this research promotes and improves understanding of the factors influencing the quality of mobile learning services in higher education in Islamic public universities and enhances and fills gaps in the literature.
- Previous studies that have focused on mobile learning were mainly considered from different cultural contexts from that of Malaysia, therefore, another major contribution has been made. The findings of this research have added to existing theories by extending the amount of knowledge about mobile learning services practices, but in a new context.

5.3 Limitations and Recommendations for Future Research

As indicated earlier, the findings of this research have verified the findings of the past studies to a certain extent. However, along the work progress, the researcher has discovered and addressed several issues that are worth noting. These are briefly discussed below:

1. It should be noted that there are limitations on the administrative m-learning services in a sense that the services are confined to services that are most available. As such, more services on education should be included for instance, in-class and off-campus learning.
2. Students that were participating in this research were all from public universities. As such, students of open or online learning should be involved so that a more comprehensive study could be performed according to type of education, whether regular or open type.
3. Testing the posited model was done via the Statistical Package for the Social Sciences (SPSS) and therefore, there may be an issue of model accuracy. As such, the researcher suggests that the future research should employ the Structural Equation Modelling (SEM) technique for obtaining a more accurate model. This could add to the body of knowledge.
4. The employed model's factors originated from closed environments prior to being applied in this research. Therefore, further research is suggested to establish factors according to the mobility and wireless environments.
5. The focus of this research is on informative services, as m-learning services is aimed to be offered to the student. As such, more comprehensive studies should include the materials as well as the contents of learning to the learning services.
6. This research employs the quantitative methods in data collection. As such, it would be valuable for future study to employ qualitative or triangulation methods as well. The suggested methods could aid researcher in discovering additional factors which, could shape the influence on students' acceptance. Aside from that, more understanding could be gained on how the students could accept the new technology application.

7. This research has a limited scope, i.e., higher education setting and higher education in Malaysia. Therefore, future research could focus on other organizations, including the business sector and the government. This is to examine the influence that the examined factors impart on their mobile users. Additionally, future research is recommended to employ this study's research factors in other countries to verify the accuracy of the instrumentation and also, to gauge the validity and reliability of the questionnaire.
8. This research only used two public universities as sample and thus, generalizability can be an issue. As such, future research could select more universities either public or private so that the entire population is better represented. Aside from that, this research is confined to university students only and thus, future study is recommended to include other publics of university such as administrators and lecturers, just to name a few. This would ascertain their trend in accepting m-learning, and the manner in which the study could determine the crucial factors that influence their acceptance.
9. The cultural factor has a major influence in the adoption of m-learning in higher learning institutions; hence, there is a need to create an awareness of this factor among academicians and university management. Given that power distance and uncertainty avoidance have strong influence in shaping students' reception towards m-learning, academicians and teachers are responsible in imparting said influence. There are various ways to shape positive attitude among students towards m-learning, such as awarding extra points for students who incorporate m-learning in their learning process.

10. The social influence also has a major impact on the acceptance of m-learning, and should be fully understood and utilized in developing m-learning in higher learning institutions. Classroom activities can include uploading m-learning materials as an alternative to archiving resources for students, including class manuals, notes, and quizzes. The university administration also has a role to play in providing students with the necessary technical knowledge and support for lecturers and students in order to establish m-learning in the teaching and learning process.

11. In addition, the study's findings are deemed useful in formulating learning and content management systems design, where technology service quality is concerned. In this regard, system response, accessibility and personalization would prove to be important determining factors in shaping students' acceptance. In short, students may respond positively to m-learning if it is introduced as a learning means with easy access and personalized, user friendly features. Hence, it is the role of system designers to achieve the objective of developing accessible m-learning tools in order to render it appealing to students. Furthermore, there are major effects of the TAM and IDT main constructs, particularly in their perceived usefulness, perceived ease of use and compatibility. To this end, there is no doubt that establishing a more useful and fluid learning management system could heighten students' participation.

5.4 Summary

M-learning services are an interesting mode of learning. Additionally, in the setting of higher education, these have become the new crucial platform. To this end, the current

research probes into the prerequisites of m-learning services' adoption in the context of higher education setting.

The findings obtained demonstrate that both of the environment and the infrastructure that are available at the higher education institutions are suitable for the diffusion of m-learning. Aside from that, the study offers the foundation of knowledge with respect to the current situation of students' awareness with regard to the services of m-learning. Additionally, the study discovered that students do indeed possess sufficient knowledge as well as awareness with respect to such technology adoption in their learning setting. Nonetheless, there are also barriers and obstacles that could impede the actual use of m-learning. Therefore, these should not be taken for granted. However, as found by this research, students were well aware of the limitations of m-learning in the context of education.

The perception of students is very crucial in examining the m-learning's use behaviour in the context of higher education setting. Additionally, via the integration of education channels and alternatives students are assisted when they want to make a connection with their educational environment wherever they are irrespective of time. Additionally, although the R2 obtained was low, the study's findings demonstrate that students' behaviour intention to use the m-learning has a positive influence on the use behaviour. Additionally, in terms of the factors that influence on behaviour intention to use, a number of deductions can be made from these obtained findings. This research suggests a number of factors as chief determiner of behaviour intention to use m-learning in the context of higher education setting. Indeed, m-learning is the education of the

future. As shown by its attributes, this system has the capacity to cater to the information technology's fast evolution. Further to this, it can be said that mobile wireless technology adoption in higher education continue to expand and eventually establish itself as the future of learning environment.

