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REVIEW ARTICLE**Factors affecting the adoption of mobile learning Based on UTAUT model**Raouf Samir Alshraideh^{1*} | Rasha Samir Al-Shrida Al-Shrida¹**Abstract**

Government of Jordan has initiated the technology acceptance program in the universities but the success story are being narrated by the few researchers which is inadequate to generalize the perception overall. In the developing countries mobile learning is the new technology similarly; Jordan is also having the same implication and in the education sector it is required to explore and predict about the future of it in developing understanding and effectiveness of this technology. The purpose of this research is to investigate the factors the influence on the university students about the adaptation of mobile learning technology in Jordan. This research is based upon the UTAUT model and researcher has selected the quantitative research methodology along with the selected sample size of 70 university students. The model of UTAUT will be able to help the research in order to investigate the factor that have an impact upon the adoption of mobile learning on students. The findings of the study suggest that there is a positive and significant impact of performance expectance, effort expectance and social impact on attitude intention of students in adopting the mobile learning

Key words: Mobile learning, Jordanian university, UTAUT model.

1 | INTRODUCTION

Mobile learning is a new technology which is associated with the mobile to get learning through it (1) The different between electronic and mobile learning is that electronic learning can be done through different modes of equipment on the other hand; mobile learning is associated with the mobile technology only (2). Mobile learning is also impressed with the electronic learning because it includes different features that are similar with each other such as; multimedia and communication with the different students (Horton, 2006). It is evident that mobile learning has the usage availability at any time and mobility as well which is most prominent and effective for the students (3). There are three characteristics of mobile which are: portability;

user can move and use it on different time and locations, quick connectivity; mobile gadgets can be connected quickly within no time and can be used any place, context sensitivity; mobile devices can be used in order to get the data and simulate it accordingly (4) These exotic features of mobile learning give an ample opportunity to learn (5, 6) Mobile learning constitutes on different factors such as hardware and software that enable the user to get the experience of amazed and effectiveness which can be enjoyed by the students and their tutors (7). Mobile learning includes four techniques that help the user to get learning such as; personalized learning, informal way of learning collaboration learning, situated learning as well. Personalized learning is associated that students can access the information and get learning through their involvement and their own way. Situated learning is based upon the stu-

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dents to learn about the real learning experience. It can be explained such as; learning about the social responsibility and other environmental programs that can be benefited to the society. Collaboration learning is associated to interact with the other students in the same time through mobile technology. Informal learning is based upon the students to get learning in their rest time or as per their convenience.

Mobile technology has change the learning technique of the students even for the teachers as well; therefore; education sector has become more wide and having more influence on both ways in learning in class and out of class as well. Mobile learning is also effective in formal way of education which will benefit the teachers and students as well. There are different advantages of mobile learning such as; cost effectiveness, quick communication, study material and no boundaries of learning. The service of mobile communication is the text message that can enable the students, teachers and others quickly. Mobile applications enable the students to access the education or data that are being required for the study in the virtual world at any time (8). These benefits can be availed by the student when they are able to accept the mobile technology. It is a fact that mobile technology did not give any assurance to the students to get the quality education it is important to investigate the student attitude towards acceptance the mobile technology (9). In the literature there are few studies that are being conducted on investigating the impact of factors that influence upon the students to adopt the mobile learning.

2 | THEORETICAL FRAMEWORK AND BACKGROUND

User behavioral intention is the most important feature that can impact upon the people or students to meet their desire or bring some different in their behavior which was on existed before or in the past (10). Intention of the use explained the behavior towards a target and enables to predict about the behavior approaches towards the change or action (11) Use behavior intention enables the researcher to undertake or predict about the future behavior such as adopting the technology or a system. Behavioral intention can be known as the indi-

vidual behavior towards the adoption of the new technology and grabbing the potential benefits of the technology. Intention of the user can be determined with the help of individual behavior towards adoption of new technology. Behavioral intention is the common feature that is being used in most of the study to predict the user ability to accept or adopt the technology (12)

3 | PERFORMANCE EXPECTANCY AND ADOPTION OF MOBILE LEARNING

Performance expectancy is being determined as the individual avail the potential benefits from the technology or the system adequately (13). Performance expectancy is being associated with the usefulness, desired results, comparative advantages and others (14) Performance expectancy is being direct and positive impact upon the use and intention behavior of the individual (15). The effectiveness of the technology or system enables the use to adopt or learn the mobile technology (15) The efficiency and capability of technology motivate the individual to meet their objective in short period of time (16). The use of technology depends upon the individual use and its potential benefits the it will be feasible for an individual to adopt the technology (17) Benefits are the operational feature of the technology while on the other hand; use of the technology depends upon the individual feature to what extent the target can be achieved (17). The future of the technology and its impact on their daily routine life is the major factor to adopt the system or use the mobile technology (15) The need is to encourage and develop the understanding that new technology will resolve the issues and help the individual to perform their task quickly (16)

In the previous research; it is being suggested that usefulness of the technology having high or low rate in adoption (18) Mobile learning is highly advanced and fast technology for the students to use and adopt it for their better future (19) It is evident in the previous researches that there is a direct link between the performance expectancy and behavior intention of the individual towards the mobile learning adoption (18) Therefore, researcher of this study will be conducting the research on bringing the performance

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expectancy towards learning behavioral intention and performance expectancy of the mobile learning among the students.

4 | EFFORT EXPECTANCY AND ADOPTION OF MOBILE LEARNING

Effort expectancy is being associated with the individual perception with the indulgent of the system or the technology (20) Effort expectancy is being suggested as the system friendly features that urge the users to adopt it adequately (21) . In the effort expectancy there are three different features such as; ease of use of the system, system complexity and operational effectiveness (21) It is suggested that the adoption or acceptance of the technology is based upon the ease of use and system knowledge of the users. Ease of use is the system advocacy that how the system will take the effort of the users to make it operational (22) Ease of use is based upon the little effort and having no psychological pressure on the user (23) Ease of use is known as the time effectiveness, location design, payment efficiency, facilities and easiness in using system (24) . Ease of use is the main predictors in adopting the new technology or using it frequently. It is considered that they ease of use having impact or influence upon the behavioral intention and acceptancy of the user to adopt the new technology (25) . Behavior of the individual towards the mobile business is being affected by the usefulness and ease of use of the system (26) . In the case of mobile business it is evident that the purchaser considers that purchasing can be done through online without having much effort which is convenient. The awareness and effectiveness among the users will be enhanced once they are able to accept the mobile technology adequately (27) .

In the case of electronic learning behavior intention of the individual is having positive impact upon the performance expectancy which is also being found in the case of mobile learning (28) . It is being suggested by the students that learning through online

is the best way and become easy for them to accept the technology. It becomes easy and effective for the students to learn and become competent through mobile learning. It is evident that students are having sharp minds which become easy for them to handle the technology and use it for a better way (29) . Previous researches show that effort expectancy and behavioral intention has the positive correlation in the case of the mobile learning adaptation (12) .

5 | SOCIAL INFLUENCE AND ADOPTION OF MOBILE LEARNING

Social influence is also a biggest factor in acceptance the technology because every individual have different perspective and thinking to accept the technology (21) . Social influence is the perspective of the collective perception about the individual towards the new technology (14) . Social influence is being considered and become a part in the TAM and TPB model for the use of the system. Social influence shows that how the individuals are having perception and ability towards the technology and manage their views towards the technology (30) . It is a fact that individual are being encourage towards adoption of new technology because of their behavior and individual perception resist the change therefore; there is a need to urge performance expectancy and ease of use about the system among the individuals (16) . Social pressure has two dimensions such as interpersonal and mass media; interpersonal influence is being associated with the family and friends while on the other hand; mass media pressure is being associated with the society that includes newspaper, radio, television and other ways of information Previous studies suggest that social pressure is highly involved towards the individual intention to adopt or accept the new technology (16, 19, 31) . Social influence is the best way to determine the overall behavior or intention of the individual towards the new technology (19) . Figure 1

Research hypotheses

H1: Performance expectancy will have a positive influence on behavioural intention to adopt a mobile

learning

H2: Effort expectancy will have a positive influence on behavioural intention to adopt a mobile learning

Conceptual framework

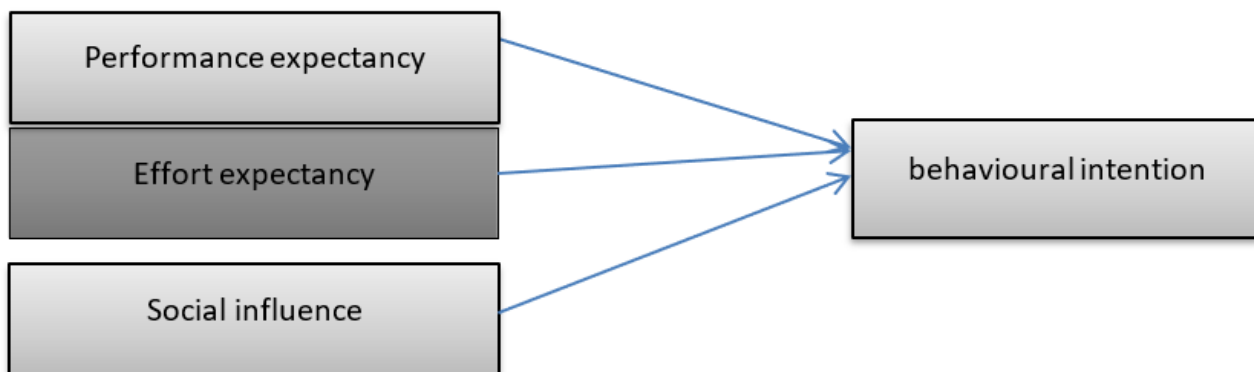


Fig. 1: Conceptual framework

H3: Social influence will have a positive influence on behavioural intention to adopt a mobile learning

6 | METHODOLOGY

As this is a quantitative design a questionnaire was distributed to the students located in Jordan to col-

lect the relevant data. The sample size for the present research is 70 students from Jordanian university in Jordan. The respondents are randomly selected. The data was analyzed using SPSS 21.0. The items were measured on 5 point likert scale ranging from 1 = Strongly disagree to 5 = Strongly agree for assessing the factors that effecting the adoption of mobile learning by Jordanian university students. Table 1

Table 1. The measurements and Cronbach's Alpha.

| Variable | Items | Cronbach's Alpha |
|------------------------|--|------------------|
| Performance Expectance | (PE1) using mobile learning would improve my performance (PE2) using mobile learning would save my time (PE3) I would use mobile learning anyplace (PE4) I would find mobile learning useful | 722 |
| Effort Expectance | (EE1) Learning to use mobile learning is easy for me (EE2) Becoming skillful at using mobile learning is easy for me (EE3) Interaction with mobile learning is easy for me (EE4) I would find mobile learning is easy to use | 953 |
| Social Influence | (SI1) People who are important to me think that I should use mobile learning (SI2) People who are familiar with me think that I should use mobile learning (SI3) People who influence my behavior think that I should use mobile learning (SI4) Most people surrounding with me use mobile learning | 951 |
| Behavioral Intention | (BI1) I prefer to using mobile learning (BI2) I intend to use mobile learning (BI3) I would use mobile learning | 814 |

7 | ANALYSIS AND RESULTS

This section of the study includes two divisions; first include the demographic information and sec-

ond include the testing of hypotheses testing using multiple regression. Table 2

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Table 2. Demographic information analysis

| Variable Name | | Frequency | Percent | Valid Percent | Cumulative Percent |
|-------------------------------|--------------|-----------|---------|---------------|--------------------|
| Gender | Male | 55 | 78.6 | 78.6 | 78.6 |
| | Female | 15 | 21.4 | 21.4 | 100.0 |
| | Total | 70 | 100.0 | 100.0 | |
| Used mobile learning | Yes | 16 | 22.9 | 22.9 | 22.9 |
| | No | 54 | 77.1 | 77.1 | 100.0 |
| | Total | 70 | 100.0 | 100.0 | |
| Experience in mobile learning | 1 year | 44 | 62.9 | 62.9 | 62.9 |
| | 2 to 3 years | 6 | 8.6 | 8.6 | 8.6 |
| | 4 to 5 years | 20 | 28.6 | 28.6 | 100.0 |
| | Total | 70 | 100.0 | 100.0 | |

Demographic analysis suggests that from the total sample of 70 only 78.6% were male and remaining were females. The results suggest that 77.1% are not using technology such as mobile learning while 22.9% are using the technology and especially the mobile learning. 62.9% respondents have understanding about the mobile learning technology but they are not using it for their benefits; it being

suggested that it might require social influence and motivation towards the mobile learning and develop awareness to use it for their meeting the targets or objective in education.

Second part is related to hypotheses testing, multiple regression analysis was used to test the hypotheses of the study. Table 3

Table 3. Multiple regression

| Independent variables | Beta | T | Sig. | R | R Square | F | Sig. |
|------------------------|------|------|------|-------|----------|-------|------|
| Performance Expectance | 0.51 | 2.21 | 0.02 | 0.761 | 0.571 | 32.28 | 0.01 |
| Effort Expectance | 0.48 | 2.10 | 0.01 | | | | |
| Social Influence | 0.47 | 2.31 | 0.02 | | | | |

The above results of coefficient suggest that it is a positive impact of performance expectancy on intention of the individual towards adopting the mobile learning technology. The results of the study suggests that social pressure or influence and effort expectancy are having positive impact on the behavior intention of users to adopt the mobile learning because the results of the p value suggests that it is lower than the 0.05.

influence upon the adoption of mobile learning in the Jordan universities students with the indulgence of UTAUT model. Researcher has used the questionnaire as the tool of collecting the data for the study from the Jordan's universities students. The findings of the study suggests that performance expectancy, effort expectancy and social pressure on the individual intentions in order to accept the mobile learning.

8 | CONCLUSIONS

It is required by the future researchers to conduct the study about the adoption of the mobile learning because in Jordan this technology is new and require more efforts and understanding to make it fully operational in the country. This study will be beneficial to develop the awareness of mobile learning technology among the students in the near future. The researcher aim was to investigate the factors that

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