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Factors affecting behavior Intention to Adopt Mobile Learning by Middle East University Students' in Jordan: Based on UTAUT Model

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Abstract

This study aimed to investigate the factors affecting students' intention to adopt mobile learning at Middle East University in Jordan. The study sample consisted of (120) undergraduate students selected randomly from faculty of educational science in Middle East University (MEU) for the second semester in the academic year 2018-2019. The study results showed that there is a positive and significant impact of performance expectance, effort expectance and social influence on behavioral intention of students to adopt m-learning. T-test analysis results also indicated non-significant differences in BI between male and female students. One-way ANOVA revealed no significant difference in BI to adopt m-learning among students at different age levels.

Keywords: Factors affecting, Intention, adoption of Mobile Learning, Middle East University, UTAUT Model.

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Factores que afectan el comportamiento Intención de adoptar el aprendizaje móvil por estudiantes de la Universidad del Medio Oriente en Jordania: Basado en el modelo UTAUT

Resumen

Este estudio tuvo como objetivo investigar los factores que afectan la intención de los estudiantes de adoptar el aprendizaje móvil en la Universidad del Medio Oriente en Jordania. La muestra de estudio consistió en (120) estudiantes universitarios seleccionados al azar de la facultad de ciencias de la educación de la Universidad del Medio Oriente (MEU) para el segundo semestre del año académico 2018-2019. Los resultados del estudio mostraron que existe un impacto positivo y significativo de la expectativa de desempeño, la expectativa de esfuerzo y la influencia social en la intención conductual de los estudiantes de adoptar el m-learning. Los resultados del análisis de la prueba T también indicaron diferencias no significativas en BI entre estudiantes masculinos y femeninos. ANOVA unidireccional no reveló diferencias significativas en BI para adoptar el m-learning entre estudiantes de diferentes niveles de edad.

Palabras clave: Factores que afectan, Intención, adopción de Mobile Learning, Universidad Del Medio Oriente, Modelo UTAUT.

1. INTRODUCTION

Information and communications technology (ICT) play a memorable role in education situation, administrative and support

tasks (Senaratne, Samarasinghe, & Jayewardenepura, 2019). Mobile learning (m-learning) is one of the technological initiatives in higher education to change the learning process (klimova & poulova, 2016). M-Learning is defined as, "Any sort of learning that happens when the learner is not at a fixed, predetermined location, or learning that happens when the learner takes advantage of opportunities offered by mobile learning technologies" (O'Malley et al., 2005). Mobile learning makes learning more enjoyable and allows students to share ideas with their teachers and colleague (Al-Emran, Arpaci, & Salloum, 2020; Sixsmith, Dyson, Nataatmadja, 2006).

M-learning is an important element in higher education institutes, therefore the acceptance and adoption of these technologies are very important. Several studies noted that although many universities have implemented online learning platforms for mobile services, students' use of mobile learning is still in its infancy (Kim et al., 2017; Hamidi & Chavoshi, 2018).

E-learning has not been officially accredited in Jordanian universities. On the other hand, this was not the case for e-learning as different e-learning techniques are used by both students and lecturers. However, expectations regarding the adoption of e-learning in Jordanian higher education institutions are still lower than those operating at the international level (Al-Marabah & Muhammad, 2013). According to reports (TRC, 2019), the number of mobile phone users reached 16 million by the second quarter of 2019, with a penetration rate of 156%. Besides, the total number of internet users in Jordan is around 9.1 million, with a penetration rate of 91%. However, many

universal studies confirmed that the growing total of mobile devices and wireless networks does not essentially show that e-learning will be adopted without any impediments (Al-Emran, Arpaci, & Salloum, 2020; Azizi, & Khatony, 2019; Hamidi & Chavoshi, 2018). These studies indicated that to successfully adopt mobile learning in higher education, many factors must be addressed, especially the driving factors that affect student acceptance (Senaratne, Samarasinghe, & Jayewardenepura, 2019; Hamidi & Chavoshi, 2018; Thomas et al., 2013)

Implementation m-learning is still in the infant stages, and few studies concerning usage university students' of mobile applications for educational purposes, especially in Middle East countries such as Jordan (Nassuora, 2012; Al-Adwan, Al-Madadha & Zvirzdinaite, 2018). Consequently, investigating the factors that affect the university students' behavior intention and use of m-learning integrated and a comprehensive method is critical (Al-Emran, Arpaci, & Salloum, 2020; Azizi, & Khatony, 2019; Nikou & Economides, 2017; Briz-Ponce et al., 2017). Therefore, this study investigated the factors that affecting behavior intention to adopt the use of m-learning at Middle East University in Jordan.

Theoretical framework and background Model Development

The UTAUT model "the Unified Theory of Acceptance and Use of Technology" is one of the most widely used models in ICT acceptance modeling (Venkatesh et al., 2003). According to Masrom & Hussein (2008), UTAUT can explain 70% of technology acceptance

behavior. UTAUT contains four main concepts: performance expectation, effort expectation, social factors and facilitating conditions that have a direct impact on the intention of their use. Also, the UTAUT model has four moderator variables: experience, age, gender and voluntariness of use (Venkatesh et al., 2003). Fig. 1 shown the UTAUT model

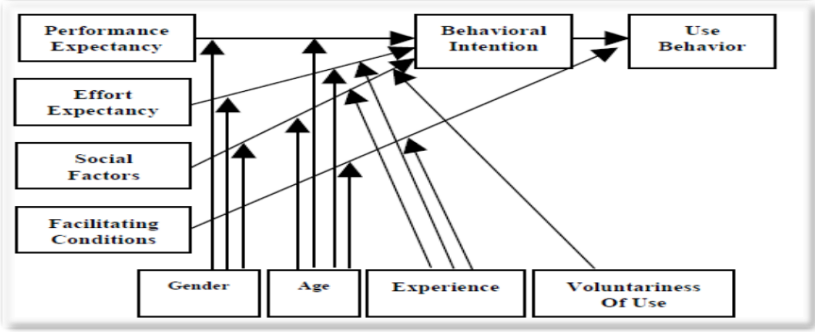

Figure 1: UTAUT Model. Venkatesh et al. (2003)

UTAUT is framed based on conceptual and empirical similarities across eight basic paradigms for accepting competing technology: Technology Acceptance Model (TAM); Motivation Model (MM); Innovation Diffusion Theory (IDT); Theory of Reasoned Action (TRA); Theory of Planned Behavior (TPB); Social Cognitive Theory (SCT), Combined TAM and TPB, and Model of PC Utilization (MPCU).

Venkatesh et al. (2003) defined UTAUT factors as follows: performance expectancy, defined as "the degree to which an individual believes that using the system will help him or her to attain gains in

job performance", effort expectancy which is "the degree of ease associated with the use of the system", social influence which is "the degree to which an individual perceives that important others believe he or she should use the new system", facilitating conditions, which is "the degree to which an individual believes that an organizational and technical infrastructure exists to support the use of the system", behavioral intention, which is " the person's subjective probability that he or she will perform the behavior in question".

Research Framework and Hypotheses

After looking at the UTAUT model, it's chosen and approved by the researcher. Based on the UTAUT model, this preliminary research used three main factors (Performance Expectancy (PE), effort expectancy (EE), and Social Influence (SI) that directly influenced the intention to use m- Learning and two moderator variables, gender, and age. The comprehensive model may cover the user's description of mobile learning in this context. Fig. 2 show the study framework.

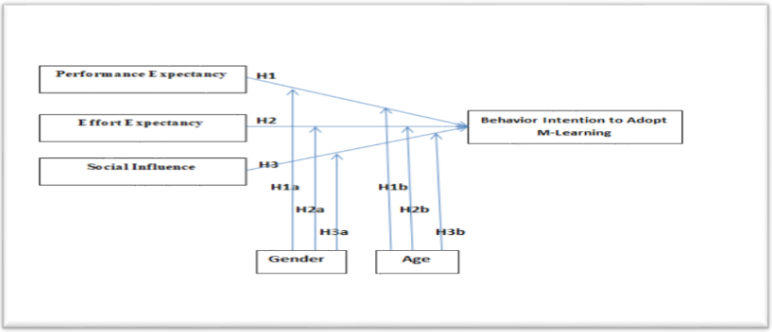

Fig.2: Study Framework

Study Hypotheses:

H1: Performance expectancy will have a positive effect on behavior intention to use m-learning.

H1a: gender will have a positive effect on Performance expectancy on behavior intention to use m-learning.

H1b: age will have a positive effect on Performance expectancy on behavior intention to use m-learning.

H2: Effort expectancy will have a positive effect on behavior intention to use m-learning.

H2a: gender will have a positive effect on Effort expectancy on behavior intention to use m-learning.

H2b: age will have a positive effect of Effort expectancy on behavior intention to use m-learning.

H3: Social influence will have a positive effect on behavior intention to use m-learning.

H3a: gender will have a positive effect on Social influence on behavior intention to use m-learning.

H3b: age will have a positive effect on Social influence on behavior intention to use m-learning.

2. METHODOLOGY

The population of this study is the undergraduate students of Middle East University in Jordan. Middle East University is a private university, it was recently established in 2005. To collect data

Convenience sampling was used in this study (Creswell, 2013). The data collection procedure was in the second semester of 2019. Questioners were distributed to 120 undergraduate students in the faculty of educational science at Middle East University to collect data, 90 students returned the questioners with response rate (75%).

The instrument of this research was developed depending on the UTAUT questionnaire (Venkatesh et al., 2003). The research instrument includes two parts. The first part measures demographic information of students, the second part measures four concepts of UTAUA, performance experience (PE), effort expectancy (EE), social influence (SI), and behavioral intention to Use m- learning (BI). SPSS 19 was used to analyze data, a five-point Likert scale was used to measure instrument's items, ranging from "1" indicating "strongly disagree" to "5" indicating "strongly agree". Table 1 shows the Reliability Analysis of study variables.

Table 1: Measurements and Cronbach's Alpha (n=90)

Variable	Items	Cronbach's Alpha.
Performance Expectancy (from Venkatesh et al., 2003)	(PE1)I find mobile learning technology useful in my learning	.81
	(PE2)Using mobile learning technology enables me to accomplish	

	learning activities more quickly.	
	(PE3)Using mobile learning technology increases my learning productivity/ achievement.	
	(PE4)If I use mobile learning technology, I will increase my chances to get a better grade.	
	(PE5)If I use mobile learning technology, the quality of my assignment will be better.	
Effort Expectancy (Adopted from Venkatesh et al., 2003)	(EE1)My interaction with mobile learning technology would be clear and understandable	.83
	(EE2)It would be easy for me to become skillful at using mobile learning technology	
	(EE3)I would find mobile learning technology easy	

	to use.	
	(EE4)Learning to operate mobile learning technology would be easy for me	
Social Influence (Adopted from Venkatesh et al., 2003)	(SE1)People who influence my behavior think that I should use mobile learning technology.	.82
	(SE2)People who are important to me think that I should use mobile learning technology.	
	(SE3)My professors have been helpful in the use of mobile learning technology.	
	(SE4)In general, my university has supported the use of mobile learning technology	
Behavioral Intention to Use Mobile	(BI1)I intend to use mobile learning	

Learning (BI) (Adopted from Venkatesh et al., 2003)	technology	.80
	(BI2)I predict I would use mobile learning technology	
	(BI3) I plan to use mobile learning technology	
	(BI4) I prefer to using mobile learning	

3. RESULTS and DISCUSSION

Table 2 showed that 13.3% of the participants were male and 86.7% were female. The participant was between (18-20) years old and is the largest age group (71.1%) of the sample, respondents aged between (21-23) years was (27.8%) of the sample. Also, (1.1%) of the respondents aged above (23) years. 85 students used mobile learning at (94.5 %) and (5.5%) not using m-learning. over of 83.3% have previous experience in mobile learning

Table 2: Participants Demographic Profile

Participants Profile	Classification	Frequency	Percentage
Gender	Male	12	13.3%
	Female	78	86.7%
	Total	90	100%

Age	18-20	64	71.1%
	21-23	25	27.8%
	Above 23	1	1.1%
	Total	90	100%
Used mobile learning	Yes	85	94.5%
	No	5	5.5%
	Total	90	100%
Experience in mobile learning	1 year	75	83.3%
	2-3 years	15	16.7%
	4 and above	0	0%
	Total	90	100%

Hypothesis Testing:

A regression analysis was conducted to test the first hypothesis (H1), Performance Expectancy (PE) and behavioral intention (BI). Table 3 below summarizes the result of the regression used to test H1.

Table 3: Regression results for H1

IV	B	Standard Error of β	T	P	R^2
PE	.301	.041	5.021	.02	.224

As seen, Performance Expectancy (PE) has significantly influenced behavioral intention (BI) ($P<0.01$). Therefore, PE impacts

on BI. Consequently, hypothesis 1(H1) is supported. Regarding Hypothesis2 (H2), the regression analysis shows that Effort Expectancy (EE) significantly influences behavioral intention (BI) ($P<0.05$). The results presented in Table 4 indicate that EE significantly influences behavioral intention.

Table 4: Regression results for H2

IV	B	Standard Error of β	T	P	R^2
EE	.330	.057	5.524	.03	.232

As appears in Table 5, the test of Hypothesis 3 (H3) shows that Social Influence (SI) has a significant influence on behavioral intention ($P<0.01$).

Table 5: Regression results for H3

IV	B	Standard Error of β	T	P	R^2
SI	.402	.131	3.081	.01	.106

The results of the study show that performance expectancy effort expectancy and social influence are significant because the results of the p-value are less than 0.05.

Furthermore, the researchers used a (t-test) to measure the difference of gender in the relationship between independent variables (PE, EE, and SI) and dependent variables (behavioral BI). The mean

scores of (PE), (EE), and (SI) showed that males and females are the same. Therefore, there are no significant differences between males and females at the major level .05 concerning (PE), (EE), and (SI). Lastly, the researchers conducted a One Way ANOVA method to explore the effect of age among study structures. Age is divided into three groups according to age (group 1: 18 to 20; group 2: 21 to 23; group 3: 23 and above). There were no significant differences at $p<0.05$ level concerning (PE), (EE), and (SI) three age groups.

4. CONCLUSION

M-learning is still considered think deeply a new technology innovation worldwide. In developing countries, such as Jordan spending on IT infrastructure is enormous, the idea of using mobile technologies in education is not far from reality. Nevertheless, before applying mobile learning, some studies need to provide decision-makers in Jordanian universities with important details to make mobile learning successful and facilitate the implementation process, On the other hand, it has become difficult to ignore the importance of m-learning to enhance education in Jordanian universities. Therefore, to facilitate the adoption and use of m-learning, there is a necessity to identify factors that contribute to mobile learning acceptance by Jordanian university students. The practical results of this research will assist those who participate in planning and developing Jordanian

universities mobile learning to make mobile services relevant and students acceptable.

The research study found that performance expectancy, effort expectancy, social influences had a positive significant impact on the adoption intention to use M-Learning by Jordanian universities students' performance expectancy, effort expectancy, social influences had a positive significant impact on the adoption intention to use M-Learning by Jordanian universities students.

Also, gender and age have shown there has no significant effect on behavior intention to adopt m-learning, because Technology has become a lifestyle for university students, whether male or female and all ages.

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REFERENCES

AL-ADWAN, A. S., AL-MADADHA, A., & ZVIRZDINAITE, Z. (2018). Modeling students' readiness to adopt mobile learning in higher education: An empirical study. **International Review of Research in Open and Distributed Learning, 19(1).**

AL-EMRAN, M., ARPACI, I., & SALLOUM, S. A. (2020). An empirical examination of continuous intention to use m-learning: An integrated model. **Education and Information Technologies, 1-20.**

ALMARABEH, T., & MOHAMMAD, H. (2013). E-learning in the Jordanian higher education system: Strengths, weakness, opportunities and threats. **Journal of American Science, 9(3), 281-287.**

AZIZI, S. M., & KHATONY, A. (2019). Investigating factors affecting on medical sciences students' intention to adopt mobile learning. **BMC medical education, 19(1), 381.**

BRIZ-PONCE, L., PEREIRA, A., CARVALHO, L., JUANES-MÉNDEZ, J. A., AND GARCÍA-PEÑALVO, F. J. (2017). Learning with mobile technologies–students' behavior. **Comput.Hum. Behav. 72, 612–620. doi: 10.1016/j.chb.2016.05.027**

CHAO CH-M. (2019) Factors Determining the Behavioral Intention to Use Mobile Learning: An Application and Extension of the UTAUT Model. **Frontiers in Psychology. v.10.**

CRESWELL, JOHN W. (2013). Qualitative inquiry and research design: Choosing among five approaches (3rd Ed.). **Thousand Oaks, CA: Sage.**

HAMIDI H., CHAVOSHI A. (2018). Analysis of the essential factors for the adoption of mobile learning in higher education: **a case study of students of the University of Technology. Telematics Inform.**

HAMIDI H., JAHANSHAHEEFARD M. (2019). Essential factors for the application of education information system using mobile learning: a case study of students of the University of Technology. **Telematics Inform. 38 207–224.**

KIM, H. J., LEE, J. M., AND RHA, J. Y. (2017). Understanding the role of user resistance on mobile learning usage among university students. **Comput. Educ.113, 108–118.**

KLIMOVA, B., & POULOVÁ, P. (2016).Mobile learning in Higher Education. **Advanced Science Letters, 22(5), 1111-1114.**

MASROM, M., & HUSSEIN, R. (2008). User acceptance of information technology: Understanding theories and model. **Venton Publishing, Kuala Lumpur, Malaysia.**

NASSUORA, A. B (2012). Students Acceptance of Mobile Learning for Higher Education in Saudi Arabia. **International Journal of Learning Management Systems, No. 1, 1-9.**

NIKOU, S. A., AND ECONOMIDES, A. A. (2017). Mobile-based assessment: investigating the factors that influence behavioral intention to use. **Comput.Educ. 109, 56–73.**

O'MALLEY, C., VAVOULA, G., GLEW, J. P., TAYLOR, J., SHARPLES, M., LEFRERE, L. N., & WAYCOTT, (2005). Guidelines for learning/teaching/tutoring in a mobile environment. Public deliverable from the MOBILearn project (D.4.1). **Hal-00696244.**

SENARATNE, S. I., SAMARASINGHE, S. M., & JAYEWARDENEPURA, G. (2019). Factors affecting the intention to adopt m-learning. **International Business Research, 12(2), 150-164**

SIXSMITH, A., DYSON, L.E. & NATAATMADJA, I (2006). Improving Class Participation in IT Tutorials and Small Lectures, **in ACIS 2006 Proceedings, Paper 54. http://aisel.aisnet.org/acis2006/54.**

THOMAS, T., SINGH, L., & GAFFAR, K. (2013). The utility of the UTAUT model in explaining mobile learning adoption in higher education in Guyana. **International Journal of Educational and Development using Information and Communication technology, 9(3), 71-85.**

VENKATESH, V., MORRIS, M. G., DAVIS, G. B., & DAVIS, F. D (2003). User acceptance of information technology: Toward a unified view. **MIS Quarterly, 425-478.**

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