Ilkogretim Online - Elementary Education Online, Year; Vol 20 (Issue 4): pp. 480-489
http://ilkogretim-online.org
doi: 10.17051/ilkonline.2021.04.53

Gender moderator on the factors that affect intention to use of mobile learning

Ayad Shihan Izkair, Department of Computing, Sultan Idris Education University, Malaysia, ayad.shihan@gmail.com
Muhammad Modi Lakulu, Department of Computing, Sultan Idris Education University, Malaysia, modi@fskik.upsi.edu.my

ABSTRACT- Mobile learning is presently taking significant part and more important role within the educational process, additionally as within the development of teaching and learning ways for higher education. Intention to use and acceptance mobile learning is a subject of growing interest within the education field. UTAUT is among the foremost fashionable and up to date model in information technology acceptance. The study has two objectives. First is to examine the factors influence the intention to use mobile learning in higher education institutions (HEI) in Iraq. Second is to explore the gender moderation effect on the factors that influence intention to use mobile learning. In this study, a survey method involving 323 participants from the universities in Iraq. The result indicated that "perceived enjoyment", "Performance Expectancy" (PE), "Effort Expectancy" (EE), "Social Influence" (SI)and "self-efficacy" have important effect on the intention to use mobile learning. Further, the result showed that intention to use mobile learning affect significantly the actual use mobile learning. Moreover, the gender moderated the effect of "Social Influence" (SI), "Effort Expectancy" (EE) and "Performance Expectancy" (PE) on the intention to use of mobile learning among the users in higher education institutions (HEI) in Iraq. This study has great contributions to the mobile learning in HEIby formulation a mobile learning model that would be used as reference for mobile learning in HEI.

Keyword: Mobile learning, Intention to use,Gender moderator, UTAUT

I. INTRODUCTION

Mobile learning is characterised as a robust part of education and learning to facilitate learning experiences. With increased and speedy advancements of ICT "Information and Communication Technologies" technologies and mobile, varied applications and innovative services are being developed. Therefore, it's necessary to analyze the variables affecting the intention to use mobile learning among learners of higher education institutions (Althunibat, 2015).

Mobile learning objectives is releasing the courses of spatio-temporal restrictions, and making it further flexible and superior quality. Many great advantagesprovided by Mobile learning in the universities. Mobile learning gradually began to play a crucial role in learning preparation. The capability to learn "on the go" – anywhere and anytime gradually becomesmainstream. It is consistent with patterns of lifelong education, e-learning and mobile learning also introduces a modern integral portion of the global computing of the community – a setting that takes place so far and cannot be stopped (Milošević, Živković, Manasijević, & Nikolić, 2015).

Compare to personal computer mobile device with print-based interfaces are more convenience, portable and light (Neumann & Neumann, 2014), ease to use and suitable for children(Aziz, Rasli, & Ramli, 2010), portability and personalize and enable to continuity and spontaneous learning (Kukulska-Hulme, 2009). Similarly, Mohamad, Maringe, and Woollard, (2012)mentioned the affordances of mobile application include; cost efficient, able to motivate students, suitable for drill and practice exercises and support personal learning environment. Moreover in general mobile application also support various approach of learning, both formal and informal (Mohamad, Lakulu, & Samsudin, 2016). Several organizations have focused their efforts on using the emerging digital technology for their users (Mohamad et al., 2017).

RELATED WORKS

This section will discuss with details the mobile learning acceptance, and the mobile learning focusing on the intention to use also the factors affectthe intention to use of mobile learning in previous studies. In addition to that, it will debate the gender moderation influence on the factors that influence the intention to use mobile learning.

Mobile learning acceptance

One of the foundations of incorporating of modern innovations in the e-learning approach is the teachers' acceptance by involving them in said process. To achieve this conclusion, it is essential to realize the main components which are leading to the acceptance of technology so we could analyze, forecast and mediate under appropriate conditions (Sánchez-Prieto, Olmos-Migueláñez, & García-Peñalvo, 2016).

Intention to use and actual use

Mohammadi (2015) mentioned that intentionis the most dependent variable recognized in the previous researches conducted based on the TAM, is characterized as the eventuality that a person will use information system. Intention has a key role towards the actual use of a modern innovation (Davis, 1989). Practically, it is not easy to expect that a certain attitude towards a modern innovation will lead also to the actual use. Nevertheless, a positive correlation between behaviour intention and actual use of innovation is detailed in multiple researches such as (Martins, Oliveira, & Popovič, 2014; Iqbal & Bhatti, 2017).

The factors influence intention to use

Performance expectancy can be described as the level to which an individual accepts that using the framework would support her or him to achieve success in implementation of the work (Venkatesh et al., 2003). Marchewka and Kostiwa (2007)has expressed that effort expectancy considered a crucial component of information system acquiring, indicating to the degree of certainty of mastering an innovation (Milošević et al., 2015).Regarding modern innovation and social impact, this kind of effect could be clarified as the level to which a person perceives the usage of a modern innovation is dependent on the conviction of others of importance (Venkatesh et al., 2003).

Dragana, Manasijevic, Nikolic, and Miloševic (2015) study mentioned the majority quality services definitions have focused on the customer's perception and her or his contentment with the services provided. Parasuraman, Zeithaml, & Berry (1988) described the client's desire of service quality as what the client considered to give him this benefit rather than what it really did. Azeez and Lakulu (2018) indicated that the two studies (Shareef, Dwivedi, Stamati, & Williams, 2014) and (Al-Hubaishi, Ahmad, & Hussain, 2017) attempt to set the standards for mobile service quality, whereby Al-Hubaishi, Ahmad, and Hussain, (2017) defined quality standards from a quality perspective.

Poong et al. (2017) study mentioned the previous century has witnessed the development in the part of the function of ICT and PCs from being just work-based into a mix of business and relaxation aims. The innovation advancement which includesthe reduced cost of PCs and make smaller size, in addition to the improved of computers mobility, have been contributed to this issue. Alrfooh & Lakulu (2020) confirmed the perceived enjoyment factor should be taken into consideration when investigating users' intention to use mobile learning.

Self-efficacy could be described as the perception of a person of the usefulness of using a system or a specific framework.The conception of self-efficacy could be defined as a person's perception of her/his capacity to achieve certain behaviors for example the ability to adopt specific duties effectively (Abbad, Morris, & de Nahlik, 2009; Ali & Arshad, 2016b). Without a doubt, previous studies regarding computer

self-efficacy has showed computer self-efficacy has a significant role in understanding a user's acceptance of information and communication technology (ICT).

Gender moderator

Gender differences were investigated in previous studies regarding the variables that affecting acceptance of e-learning (for example: Ong & Lai, 2006; Wang et al., 2009). Previous studies about the gender differences in the acceptance and perceptions of mobile learning and e-learning frameworks that were discovered mixed findings. Some previous studies toward mobile learning and usage of e-learning in various context for example organizations, universities and colleges discovered that males users had importantly higher positive understanding about mobile learning and e-learning than females users (e.g. Ong & Lai, 2006; Zhou & Xu, 2007).

While, some researchers pointed out there is no gender gap concerning conceptions(for example:Zhang, 2005; Davis & Davis, 2007). Moreover, other researches joined on these paradoxical results concerning the gender moderator influence on the factors that influence technology acceptance. Some researchers discovered that male usershave higher motivation by Perceived Usefulness on intention behaviour (Morris & Venkatesh, 2000; Sun & Zhang, 2006)whereas female users are more affected by Perceived Ease of Use (Ong & Lai, 2006).

II. RESEARCH METHODOLOGY

Research methodology has the important role in the research development for ensuringsignificant and systematic research into the examination of phenomenon. The articulated research objectives in this study guided the researcher for embracingsuitable step by step approach for the purpose of reaching to them.

Research Approach (Quantitative)

The process to conduct a quantitative research starts with a researcher selects a subject. In general, quantitative researcher begin with a wide area of research or field of personal interest or professional. The researcher should focus on narrowing it down to a particular question of the research that could be investigated by the research. Moreover, quantitative approach characteristically indicates to integrated surveys that are managed for people or families, which are specified through a variety of shapes of samples normally random samples (Dudwick, Kuehnast, Jones, & Woolcock, 2006; Choy, 2014).Of course, the imperative for developing a specific model is driven from the research gap in a specificarea of research (Husain, Lakulu, & Sarkawi, 2017).

Quantitative data includes categories and numbers are ideally analyzed with the tools of statistical methods. This research uses the survey (questionnaire) for collecting the data required from the target group, and then analyzed by SPSS and AMOS software to propose the initial model. They are 323 completed surveys (questionnaires) have been obtained from respondents

Develop Questionnaire

The first stage of data collection involves surveying the Iraqi nationalities who are students, academics or administrative staffs in Higher Education institutions who have experience in computer an IT and preferred to may have some experience in using e-learning or mobile learning. The target groups are from college of information technology from three public universities in middle of Iraq,

Data Analysis

The obtained data from the questionnairewould be analyzed using AMOS and SPSS software systems to obtain descriptive statistical figures, frequencies and mean. Using SPSS, the missing value, outliers, normality, multicollinearity and non-response bias will be checked (Yin, 2009). The AMOS will be used for conducting the main data analysis of this research.

Research Hypotheses

These hypotheses intend for identifying the factors that will greatly influence the intention to use of mobile learning in higher education institutions, see table 1 show the Research Hypotheses

Table 1: Research Hypotheses

#	**Hypotheses**
1.	H1: Performance expectancy has a positive effect on intention to use of mobile learning.
2.	H2: Effort expectancy has a positive effect on intention to use of mobile learning.
3.	H3: Social influence has a positive effect on intention to use of mobile learning.
4.	H4: Quality of services has a positive effect on intention to use of mobile learning.
5.	H5: Perceived enjoyment has a positive effect on intention to use of mobile learning.
6.	H6: Self-efficacy has a positive effect on intention to use of mobile learning.
7.	H7. Intention to use has a positive effect on actual use of mobile learning.
8.	H8: Gender is a moderating variable influencing the effect of performance expectancy on intention to use of mobile learning.
9.	H9: Gender is a moderating variable influencing the effect of effort expectancy on intention to use mobile learning.
10.	H10: Gender is a moderating variable influencing the effect of social influence on intention to use mobile learning.

III. DATA ANALYSIS AND RESULTS

In this research, mostly SPSS and AMOS software have been used in this study go the data analysis.

Normality

According to Hair et al. (2017) and Pallant (2016), the normality can be checked using two methods. The first method is to check the skewness and kurtosis. It is widely accepted that value of skewness and kurtosis less than ±2 are acceptable and lead to a conclusion that the data are normally distributed (George & Mallery, 2008). The second method is to check the histograms of the variable. A normal distribution looks like a bell-shaped. In this study, the kurtosis and the skewness are presented in Table 2. The table displays that the value of Skewness ranged between -.030 to -.525. These values are less than ±2. In addition, the values of Kurtosis ranged between -.415 and -1.128 which are below ±2.

Table 2: Normality Analysis

Variable	**Skewness<±2**	**Kurtosis<±2**
Performance Expectancy	-.323	-.762
Effort Expectancy	-.374	-.536
Social Influence	-.182	-.680
Quality of Service	-.525	-.805
Perceived Enjoyment	-.216	-.929
Self-Efficacy	-.251	-.959
Intention to Use	-.030	-1.128
Actual Use	-.138	-.921
Standard error of Skewness	.138	
Standard error of Kurtosis		.274

As it can be seen in Table 2, the data is normally distributed and to confirm the normal distribution, the histograms of all the variables were checked and it is found that all the variables are normally distributed and have a bell-shaped.

Descriptive Information of Respondents

In this section, the descriptive information of respondents is presented. Table 3 shows the gender information, age classification, education level, and experience period of using mobile learning by the respondents. The table also shows the mean and the standard deviation (Std).

Table 3: Descriptive Information of Respondents

Variable	Label	Frequency	Percent	Mean	Std
Gender	Male	165	52.5	1.47	.500
	Female	149	47.5		
Age	19-26 years	37	11.8	2.62	.988
	27-34 years	110	35.0		
	35-42 years	114	36.3		
	43-50 years	40	12.7		
	More than 50 years"	13	4.1		
Education	Bachelor	97	30.9	2.56	1.144
	Diploma	13	4.1		
	Master	135	43.0		
	PhD	69	22.0		
Experience	0-3 years	171	54.5	1.48	.549
	4-7 years	135	43.0		
	8-11 years	8	2.5		

Gender of the Respondents

Table 3 presents the distribution of gender of the respondents of this study. It shows that the highest percentage of 52.5% or 165 of the respondents are males while 47.5% or 149 are females. This indicates that both genders are represented in this study and has mean of 1.47 indicating that almost the genders are equal in term of numbers because the mid-point is near the 1.50.

Structural Model

The third level of SEM-AMOS is the structural model. In this level, the hypothesis is tested and the r-square of the model is presented. Figure 1 displays the structural model of this research. The R-square of the dependent variable intention to use is 0.60 indicating that the independent variables such as PE, SI, satisfaction, perceived enjoyment, personal innovativeness, FC, self-efficacy, EE, and quality of service were able to explain 60% of the variation in intention to use. In addition, the R-square of actual use is 0.44 indicating that 44% of the variation in actual use can be explained by intention to use. These values of R-square are acceptable and considered excellent as pointed out by Hair et al. (2017), R-square value between 0.25 to 0.50 is considered good while R-square value between 0.50 to 0.75 are considered excellent. Figure 4.14 presents the structural model of this study. The mean score value was used to test the direct effect and moderation effect between the variables of this study. This is in line with several researchers such as Hair et al. (2010), Awang (2014) and Lowry and Gaskin (2014) have used the mean to test the structural model.

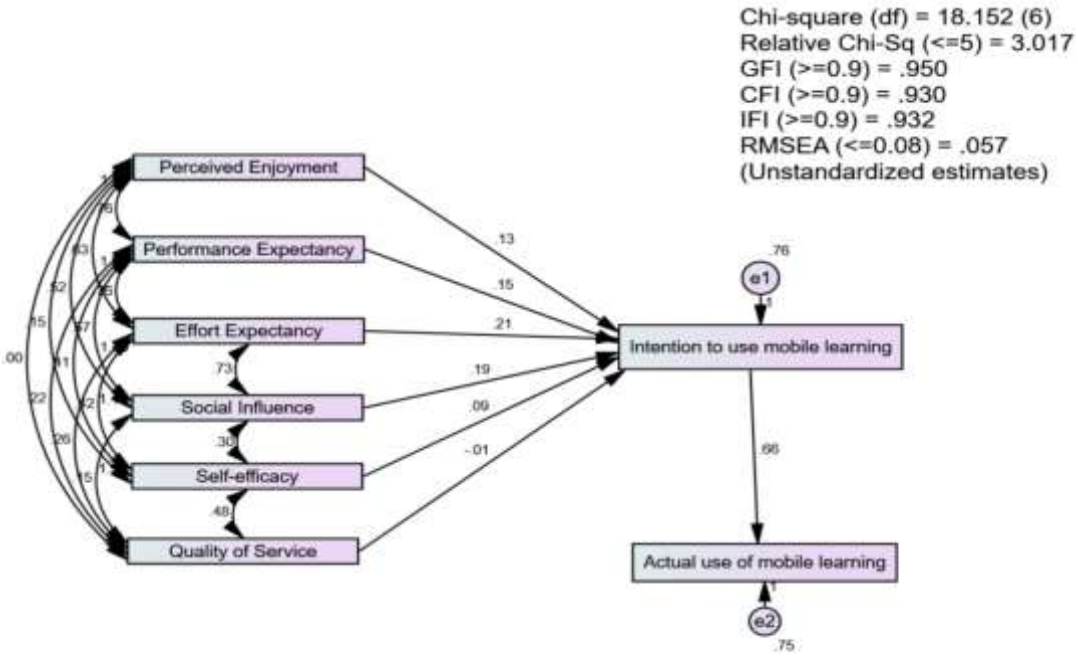

Figure 1: Structural Model of Direct Effect

Hypotheses Testing

The hypothesis of this study consists of ten direct effect hypotheses and six moderating hypotheses of gender and experience. The following sections discuss first the direct effect hypotheses followed by the moderating effect of gender and experience.

Direct Effect

Ten direct effect hypotheses were developed in this research. Table 4 presents the results of hypotheses testing for direct effect hypotheses. The table shows the hypothesis (H), dependent variable (DV), path, independent variable (IV), estimate (B), standard error (S.E.), critical ratio (C.R.) or t-value (T), and level of significance (P). A hypothesis is supported if the P or p-value and also known as level of significance is less than 0.05 or the C.R. is greater than 1.96 as suggested by Hair et al. (2010) and Awang (2014).

Table 4: Results of Direct Effect Hypotheses

H	DV	Path	IV	Estimate (B)	S.E.	C.R.	P	Label
H1	ITU	<---	PE	.151	.049	3.097	.002	Supported
H2	ITU	<---	EE	.205	.049	4.217	***	Supported
H3	ITU	<---	SI	.195	.051	3.807	***	Supported
H4	ITU	<---	QOS	-.012	.046	-.256	.798	Rejected
H5	ITU	<---	PEN	.118	.051	2.316	.021	Supported
H6	ITU	<---	SE	.090	.042	2.165	.030	Supported
H7	AU	<---	ITU	.660	.042	15.812	***	Supported

Note: ***significance at the level of 0.001.

"Note: ITU: intention to use, PE: performance expectancy, EE: effort expectancy, SI: social influence, QOS: quality of service,PEN: perceived enjoyment, SE: self-efficacy, AU: actual use."

Testing the Moderating Effect of Gender

The gender moderator was proposed in this study. The gender of the respondents where the data divided into male and female. In addition, two models were created. The first is constrained and the second is unconstrained. The chi-square of the constrained and unconstrained are compared. If the value of Chi-square differs by more than 3.84, then it can be concluded that there is a moderation effect.
Further, the moderator is considered full if both paths in the high and low dataset are significant while it is considered partial if one of the paths is not significant. This method was suggested by Awang (2014) to test the moderator of a categorical variable such as gender. The next sections discuss the moderating effect of gender of the respondents between PE, EE, and SI and ITU.

Moderating effect of Gender between performance expectancy and Intention to use
The eighth hypothesis of this research predicted that gender will moderate the effect of PE on the intention to use mobile learning "H8: Gender is a moderating variable influencing the effect of performance expectancy on intention to use of mobile learning". The hypothesis was tested. The differences between chi-square is greater than 3.84 indicating that there is a moderation effectof female between PE and intention to use of mobile learning. For male, the result of the chi-square and df for both constrained and unconstrained models showed that the difference in Chi-square is 109.878 which is greater than 3.84. This support the hypothesis that there is a moderation effect of male.

To determine the type of the moderator, the unconstrained paths (PE on intention to use) for male and female were examined as shown in Table 5 and it is found that this moderator is full. This is because both of the paths are significant. In other words, the effect of PE on intention to use is important in case of male data and female data. Accordingly, H8 is supported and gender moderates the effect of PE on intention to use.

Table 5: Type of Moderator

Model	DV	Path	IV	Estimate	S.E.	C.R.	P	Label
Female	ITU	<---	PE	.161	.071	2.265	.024	Supported
Male	ITU	<---	PE	.140	.069	2.034	.042	Supported

Moderating Effect of Gender between Effort Expectancy and Intention to use

The ninth hypothesis of this research proposed gender as a moderator between EE and intention to use "H9: Gender is a moderating variable influencing the effect of effort expectancy on intention to use mobile learning".

The results of the moderation effect show that there is a moderation effect of female between EE and intention to use. This is because the differences in Chi-square is greater than 3.84. For the male, the results of chi-square and DF show that the difference between chi-square of the two models is 91.531 and this value is bigger than 3.84. Thus, male moderates the effect between EE and intention to use. To determine the type of the moderation, the high and low path were compared. It can be seen in Table 6 that the effect of EE on intention to use of mobile learning in both female and male data is significant. Thus, the moderation is full.

Table 6: Type of Moderator

Model				Estimate	S.E.	C.R.	P	Label
Female	ITU	<---	EE	.220	.066	3.354	.000	supported
Male	ITU	<---	EE	.196	.073	2.700	.007	Supported

Thus, the gender moderated the effect of EE on intention to use mobile learning by users in Iraq. Accordingly, H9 is supported.

Moderating Effect of Gender between Social Influence and Intention to Use

The tenth hypothesis of this study proposed that gender moderates the effect of SI on the intention to use "H10: Gender is a moderating variable influencing the effect of SI on intention to use mobile learning". The results of the Chi-square and DF of both constrained and unconstrained models for female shows that there is a moderation effect. This is because the chi-square is 134.239 is larger than 3.84. For the male moderating effect, the results of the chi-square and DF for both models show that the differences between chi-square for constraint and unconstraint models is 105.729. This indicates that there is a moderation effect.

The moderation of gender between SI and intention to use of mobile learning is full due to the fact that both paths are significant as shown in Table 7.

Table 7: Type of the Moderator

Model				Estimate	S.E.	C.R.	P	Label
Female	ITU	<---	SI	.201	.079	2.532	.011	Supported
Male	ITU	<---	SI	.174	.068	2.265	.010	Supported

Thus, the gender moderated the effect of SI on intention to use mobile learning by users in Iraq. Accordingly, H10 is supported.

Figure 2 shows the gender moderation effects on the factors influence intention to use mobile learning in HEI in Iraq.

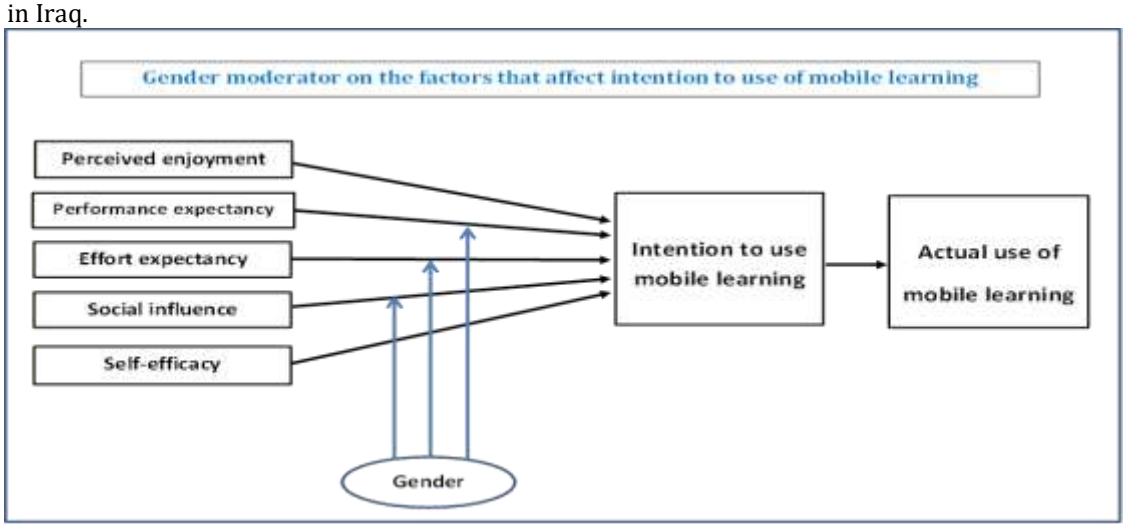

Figure 2: Intention to use mobile learning model

IV. THE CONCLUSION

After data analysis, the result this study discovered that only five factors are influencing intention to use mobile learning, the factors are "Perceived enjoyment", "Effort expectancy", "Performance expectancy", "Social influence", and "Self-efficacy". In addition to that the study confirmed that intention to use mobile learning influencing actual use of mobile learning in HEI. Moreover, the study discovered that gender is a moderating variable influencing the effect of each of "effort expectancy", "performance expectancy" and "social influence" on intention to use of mobile learning in higher education institutions (HEI). While this study has discovered that the quality of services factor is not important and rejected.This study has great

contributions to the mobile learning by formulation a mobile learning model that would be used as reference for mobile learning in HEI.

REFERENCES

1. Abbad, M. M., Morris, D., & de Nahlik, C. (2009). Looking under the Bonnet: Factors affecting student adoption of E-learning systems in Jordan. *International Review of Research in Open and Distance Learning*, *10*(2), 1–25.
2. Al-Hubaishi, H. S., Ahmad, S. Z., & Hussain, M. (2017). Exploring mobile government from the service quality perspective. *Journal of Enterprise Information Management*, *30*(1), 4–16.
3. Ali, R. A., & Arshad, M. R. M. (2016). Understanding intention to use mobile learning: a perspective of the extended unified theory of acceptance and use of technology. *International Journal of ADVANCED AND APPLIED SCIENCES*, *3*(7), 81–88. https://doi.org/10.21833/ijaas.2016.07.013
4. Alrfooh, A. M., & Lakulu, M. M. (2020). The Effect of Electronic Educational Assessment Environment (Navigation and Content) on Students' Intention to use MOBILE BASED ASSESSMENT from Motivational Perspective View. *International Journal of Advanced Trends in Computer Science and Engineering*, *9*(1), 440–453.
5. Althunibat, A. (2015). Determining the factors influencing students' intention to use m-learning in Jordan higher education. *Computers in Human Behavior*, *52*, 65–71. https://doi.org/10.1016/j.chb.2015.05.046
6. Azeez, N. D., & Lakulu, M. M. (2018). Evaluation framework of M-government services success in Malaysia. *Journal of Theoretical and Applied Information Technology*, *96*(24).
7. Aziz, N. A. A., Rasli, R. M., & Ramli, K. (2010). Preschool multimedia interactive courseware: Classifying object (Mengelaskan Objek) PMICMO. *Proceedings - 2010 2nd WRI World Congress on Software Engineering, WCSE 2010*, *2*, 318–322. https://doi.org/10.1109/WCSE.2010.41
8. Choy, L. T. (2014). The Strengths and Weaknesses of Research Methodology: Comparison and Complimentary between Qualitative and Quantitative Approaches. *IOSR Journal of Humanities and Social Science*, *19*(4), 99–104. https://doi.org/10.9790/0837-194399104
9. Davis, F. (1989). Perceived usefulness, perceived ease of use, and user acceptance of information technology. *MIS Quarterly: Management Information Systems*, *13*(3), 319–339. https://doi.org/10.2307/249008
10. Davis, J. L., & Davis, H. (2007). Perceptions of career and technology and training and development students regarding basic personal computer knowledge and skills. *College Student Journal*, *41*(1), 69–79.
11. Dragana, Z., Manasijevic, D., Nikolic, D., & Miloševic, I. (2015). *Computers in Human Behavior The effects of the intended behavior of students in the use of M-learning ˇ ivkovic*. *51*, 207–215. https://doi.org/10.1016/j.chb.2015.04.041
12. Dudwick, N., Kuehnast, K., Jones, V. N., & Woolcock, M. (2006). Analyzing Social Capital in Context: A Guide to Using Qualitative Methods and Data. *World Bank Institute, Washington*.
13. George, D., & Mallery, P. (2008). SPSS for Windows step by step: A simple guide and reference. In *BrJHaematol*.
14. Hole, Y., & Snehal, P. & Bhaskar, M. (2018). Service marketing and quality strategies. Periodicals of engineering and natural sciences,6 (1), 182-196.
15. Hole, Y., & Snehal, P. & Bhaskar, M. (2019). Porter's five forces model: gives you a competitive advantage. Journal of Advanced Research in Dynamical and Control System, 11 (4), 1436-1448.
16. Iqbal, S., & Bhatti, Z. A. (2017). What drives m-learning? An empirical investigation of university student perceptions in Pakistan. *Higher Education Research and Development*, *36*(4), 730–746. https://doi.org/10.1080/07294360.2016.1236782
17. Kukulska-Hulme, A. (2009). Will mobile learning change language learning? *ReCALL*, *21*(2), 157–165. https://doi.org/10.1017/S0958344009000202
18. Marchewka, J., & Kostiwa, K. (2007). An Application of the UTAUT Model for Understanding Student Perceptions Using Course Management Software. *Communications of the IIMA*, *7*(2), 10.
19. Martins, C., Oliveira, T., & Popovič, A. (2014). Understanding the internet banking adoption: A unified theory of acceptance and use of technology and perceived risk application. *International Journal of Information Management*, *34*(1), 1–13. https://doi.org/10.1016/j.ijinfomgt.2013.06.002
20. Milošević, I., Živković, D., Manasijević, D., & Nikolić, D. (2015). The effects of the intended behavior

of students in the use of M-learning. *Computers in Human Behavior*, *51*(PA), 207–215. https://doi.org/10.1016/j.chb.2015.04.041
21. Mohamad, A. J., & Lakulu, M. M. (2017). A FRAMEWORK OF MOBILE EDUCATIONAL APPLICATION FOR KINDERGARTEN EARLY READING. *The International Journal of Multimedia & Its Applications (IJMA)*, *9*(4), 113–119. https://doi.org/10.5121/ijma.2017.9610
22. Mohamad, A. J., Lakulu, M., & Samsudin, K. (2016). The development of mobile application for kindergarten early reading: challenges and opportunities. *Journal of Engineering and Applied Sciences*, *11*(3), 380–383.
23. Mohamad, M., Maringe, F., & Woollard, J. (2012). Mobile Learning in Malaysian Schools: Opportunities and Challenges of introducing teaching through mobile phones. *International Journal for E-Learning Security*, *2*(1), 133–137. https://doi.org/10.20533/ijels.2046.4568.2012.0017
24. Mohammadi, H. (2015). Social and individual antecedents of m-learning adoption in Iran. *Computers in Human Behavior*, *49*, 191–207. https://doi.org/10.1016/j.chb.2015.03.006
25. Morris, M. G., & Venkatesh, V. (2000). Age differences in technology adoption decisions: Implications for a changing work force. *Personnel Psychology*, 375.
26. Neumann, M. M., & Neumann, D. L. (2014). Touch Screen Tablets and Emergent Literacy. *Early Childhood Education Journal*, *42*(4), 231–239. https://doi.org/10.1007/s10643-013-0608-3
27. Ong, C. S., & Lai, J. Y. (2006). Gender differences in perceptions and relationships among dominants of e-learning acceptance. *Computers in Human Behavior*, *22*(5), 816–829. https://doi.org/10.1016/j.chb.2004.03.006
28. Pallant, J. (2016). SPSS survival manual: a step by step guide to data analysis using SPSS. In *Step by step guide to data analysis using the SPSS program*.
29. Parasuraman, A., Zeithaml, A., & Berry, L. L. (1988). Servqual: A multiple-item scale for measuring consumer perc. *Journal of Retailling*, *64*(1), 12.
30. Poong, Y. S., Yamaguchi, S., & Takada, J. I. (2017). Investigating the drivers of mobile learning acceptance among young adults in the World Heritage town of Luang Prabang, Laos. *Information Development*, *33*(1), 57–71. https://doi.org/10.1177/0266666916638136
31. Sánchez-Prieto, J. C., Olmos-Migueláñez, S., & García-Peñalvo, F. J. (2016). Informal tools in formal contexts: Development of a model to assess the acceptance of mobile technologies among teachers. *Computers in Human Behavior*, *55*, 519–528. https://doi.org/10.1016/j.chb.2015.07.002
32. Shareef, M. A., Dwivedi, Y. K., Stamati, T., & Williams, M. D. (2014). SQ mGov: A Comprehensive Service-Quality Paradigm for Mobile Government. *Information Systems Management*, *31*(2), 126–142. https://doi.org/10.1080/10580530.2014.890432
33. Sun, H., & Zhang, P. (2006). Causal Relationships between Perceived Enjoyment and Perceived Ease of Use: An Alternative Approach. *Journal of the Association for Information Systems*, *7*(9), 618–645. https://doi.org/10.17705/1jais.00100
34. 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.
35. Wang, Y. S., Wu, M. C., & Wang, H. Y. (2009). Investigating the determinants and age and gender differences in the acceptance of mobile learning. *British Journal of Educational Technology*, *40*(1), 92–118. https://doi.org/10.1111/j.1467-8535.2007.00809.x
36. Zhang, Y. (2005). DISTANCE LEARNING RECEPTIVITY. *Quarterly Review of Distance Education*, *6*(1), 1–29.
37. Zhou, G., & Xu, J. (2007). Adoption of Educational Technology: How Does Gender Matter? *International Journal of Teaching and Learning in Higher Education*, *19*(2), 140–153. Retrieved from http://www.isetl.org/ijtlhe/pdf/IJTLHE19(2).pdf#page=40