Acceptance Model for e-Learning Services: A Case Study at Al-Madinah International University in Malaysia

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Abstract   *E-learning environments are university's infrastructural features that are increasingly important. With e-Learning, teachers could impart knowledge in many ways while improving interaction with the students. Also, interactions among students could be improved. This study aimed at identifying factors that can explain the usage of e-learning environments by higher education students. A total of 201 questionnaires were answered by 201 students enrolled in Al-Madinah International University in Malaysia. The results point to use behavior of using e-learning as the factor that directly influenced behavioral intention to use e-learning the most. This factor also imparted the greatest indirect impact on behavioral intention use E-learning. Simply put, student's usage of e-learning environments is explainable to a great extent via their perceptions of the added value of these environments, which to a high degree is impacted by their belief about web-based activities and computer-assisted learning.*

Key words   E-learning, Cultural, Unified Theory of Acceptance and Use of Technology (UTAUT)

1.   Introduction

Globally, the teaching practices and learning at colleges as well as universities are being revolutionized by digital technologies. Additionally, Nanayakkara (2007) reported that the teaching institutions are showing significant efforts in establishing eLearning while investing a large amount on the information technology infrastructure, anticipating a high return. Unfortunately, the usage of the technology by the teachers and faculty is not as expected. In fact, e-Learning systems are still not employed as much as they should be. It is not known how the term 'e-Learning' came into existence. However, Moore, Dickson-Deane and Galyen (2011) suggested the high possibility of the term being coined in the 1980's during another delivery mode's time frame which is online learning. The term 'e-Learning' is describable as instruction conveyed using any electronic medium such as CD-Rom, audio/video tape, interactive TV, internet, intranets, extranets and satellite broadcasts (Frimpon, 2012).

Aside from e-learning, the Internet is also instrumental for the social media. This, as stated by Pumper, Yaeger and Moreno (2013), results in the widespread of social networking sites across all geographical boundaries and cultures. As noted by Socialbakers (2012), Facebook has become the most popular social networking site with roughly 1 billion users worldwide. Owing to the evolution of the technology of education during the course of the new millennium, there has been heavy integration of e-learning and social media into the approach of education (e.g. Sozcu, 2014; Stein *et al*., 2014).

The adoption of e-learning by higher education institution is as support for professional development and continuing education (King and Boyatt, 2014). Simultaneously, within the setting of higher education, Magogwe, Ntereke and Phetlhe (2014) stated that the implementation of social media is for intensifying the steady and smooth communication between instructor and students, and among students. Additionally, it is important to discover the motivational factor of social media use. This would further fortify e-learning and social media with respect to their effectiveness. The motivational factors of use of e-Learning usage and of social media have been explored by several scholars. Somehow, the motivational factors of e-learning usage in an educational technology course in the context of Malaysia are yet to be sufficiently explored.

2. Problem statement

Many developing countries regard e-Learning as a way to meet the growing demand for higher education. In Pakistan, Iqbal and Ahmad (2010) reported online education as being promoted as "education for all" because its aim is to reach to students who are too far from the cities and those who could not afford studying in the conventional higher education. In the context of Botswana, Ikpe (2011) stated that the use of e-Learning becomes the solution to the issues of large classrooms, growing enrollment, and inadequate staff. The author further added that the integration of e-learning is for solving the practical problems associated with access and the quality of learning experiences, not because of a desire to be part of an elite club of universities with the technological know-how. It is expected that e-learning will assist in the improvement of computer literacy among students; computer literacy is a crucial skill for the workforce today (Addah, 2012; Bediang, *et al*., 2013).

The crucial factors of success with e-learning experts (faculty, ICT experts, and researchers) in developing countries were explored by Bhuasiri *et al*. (2012). From the data, the authors laid down the key four factors that the ICT experts had ranked: computer training perceived usefulness, attitude toward e-learning, and computer self-efficacy. Meanwhile, the faculty ranked these top four factors: perceived usefulness, attitude toward e-learning, program flexibility, and clear direction. As for the researchers, they deduced that people in the developing countries has less familiarity with technology which causes them to be far more critical of e-learning. Also, the present research highlighted a number of challenges. Unfortunately, only a handful studies tried to make a connection between the aforesaid challenges and the acceptance of e-learning of users.

While it is true that e-learning in education has expanded substantially and its perceived benefits are well acknowledged, the efficiency of such tools will not be maximally used if the users refuse to take in and employ the system. As such, the successful implementation of tools of e-learning is dictated by the students' willingness to adopt and accept the technology. Therefore, practitioners as well as policy makers must have the awareness of the factors that impact the acceptance of user of web-based learning systems for the improvement of the learning experience of student (Tarhini *et al*., 2014a). However, as demonstrated by the recent studies, the implementation of e-Learning is not a technological solution merely, rather, it includes many different factors including the social factors (Tarhini *et al*., 2015), and individual factors (Liawand Huang, 2011), organizational factors including facilitating conditions (Sun and Zhang, 2006) as well as the cultural factors (Masoumi, 2010). These key factors, as demonstrated by Kim and Moore (2005), highly contribute to the way an information technology is developed and utilized.

Thus, the factors that impact the acceptance of e-learning among students to embark on online learning have to be explored. With this in consideration, this study aims to ascertain the underlying factors or dimensions that impact the acceptance of student towards E-learning.

In this study, the cultural factor, Performance Expectancy (PE), Social Influence (SI), Facilitating Condition (FC), Effort Expectancy (EE), and their influence on the level of adoption of E-learning services are explored. Malaysia has been chosen as the setting of this study and since Malaysia is classed as a developing country, other developing countries could also benefit from this study.

3. Literature review

The Unified Theory of Acceptance and Use of Technology (UTAUT) Model is elaborated first in this section to provide comprehension on what determines user acceptance of e-commerce.

The Unified Theory of Acceptance and Use of Technology (UTAUT) Model by Venkatesh *et al*. (2003) comprises the consolidation of the previous researches linked with TAM. The UTAUT explains the intents of user to use an Information system (IS) and the continuing usage behaviour of user. The theory lays down four (4) key constructs which are direct determiners of usage intention and behaviour of user. These determinants include performance expectancy, effort expectancy, social influence, and facilitating conditions (Venkatesh *et al*., 2003). Further, Venkatesh *et al*. (2003) also theorized the factors of age, gender, experience and use voluntariness as mediating the impact of the four key constructs listed. The theory was formulated according to a review and consolidation of the constructs from eight models of IS usage behaviour employed in the previous studies.
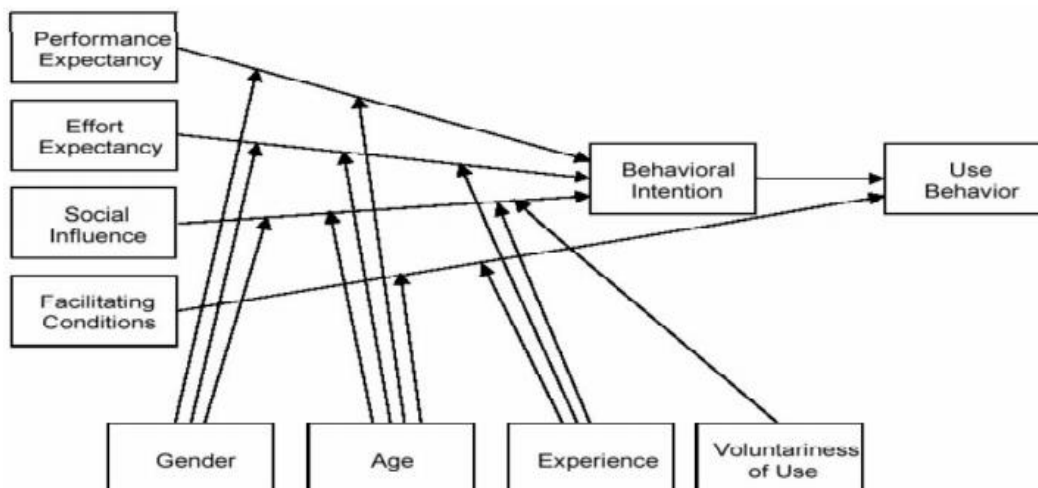
Figure 1 illustrates the UTAUT.

Figure 1. Unified Theory of Acceptance and Use of Technology (UTAUT)
Model Source: (Venkatesh *et al.*, 2003)

4. Culture and acceptance of new technology

Cultural beliefs are the primary independent variables in foretelling the success or failure of technology acceptance (Straub *et al.*, 2001) considering that there are varying levels of acceptance and use of new technologies based on different social and cultural settings. Culture is linked with technology; they are in fact dependent upon one another. As stated by Straub et al. (2001) culture determines technology and in any society, culture is also a determiner in the networks of interaction. Many studies have linked culture with IT. For instance, employing the work of Hofstede, Tricker (1988) presented an excellent framework that links IS and culture. Ein-Dor *et al.* (1993) also included cultural factor in IS. This factor includes attitude towards technology progress, interpersonal relations and social commitment as well as social norms. Meanwhile, Hassan and Ditsa(1999) mentioned culture factor as the possibly most challenging factor to separate, describe and measure. On the other hand, studies conducted in West Africa, the Middle East and Australia employing the indices by Hofstede and Hall found the majority of IT products and projects fit with cultures that are characterized by low Power Distance, low Uncertainty Avoidance, and strong Long-Term Orientation. Also, within the domain of education, the most commonly used models are: (i) Hofstede's 5 Dimensions (1980; 1991) (ii) Hall's perception of time and high-context/low-context models (Hofstede and Geert 1984).

Also, the determination of the relationship between culture and IS includes a comprehensive study on culture itself. For instance, culture has been considered by Edberg et al. (2001) as belonging to the five key issues for the global IS management. As indicated by the authors, the culture of the Japanese does not accept computer technologies and social group completely as well as the dynamics of action-oriented decision-making. Meanwhile, looking at the influence of cultural beliefs and values on the inference of IT within the Asian domain (Malaysia included), Straub, *et al.* (2001) perceive cultural beliefs in Arab world to be very strong predictors of resistance to systems and to Information Technology Transfer (ITT). Moreover, perceptions and use of IT among the Japanese and US workers are different (Gefenand Straub, 1997; Straub, 1994). Also, within the Asian region, the lack of IT diffusion was highly likely due to the cultural and political factors (Goodman and Green, 1992). It should be noted that the embracement of free movement of information in the Western region appears to encroach the cultural environments of many Asian countries (Malaysia included).

5. Research framework and hypothesis

Considering the factors known to potentially affect users' adoption of E-learning, another construct known as the cultural factor is included in the Unified Theory of Acceptance and Use of Technology

(UTAUT). The purpose of the inclusion is to allow the examination of the factors that might impact the acceptance of university student towards e-commerce.
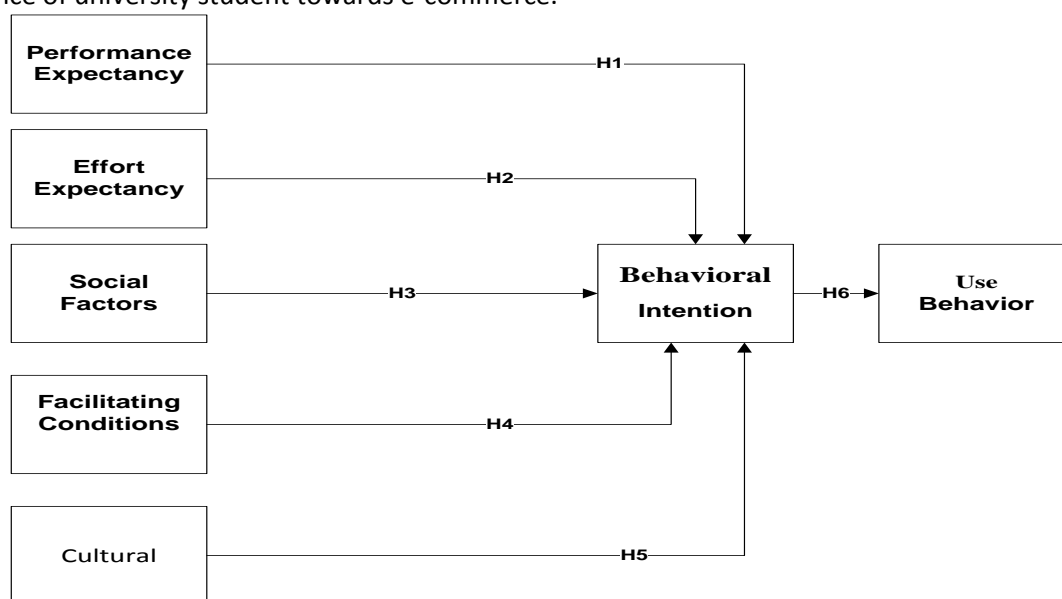

Figure 2. Research Framework

Research Hypothesis

H1: Performance Expectancy has a significant positive relationship with behavioral intention to use E-learning.

H2: Effort Expectancy has a significant positive relationship with behavioral intention to use E-learning

H3: Social Factors have a significant positive relationship with behavioral intention to use E-learning

H4: Facilitating Conditions have a significant positive relationship with behavioral intention to use E-learning.

H5: Cultural factors have a significant positive relationship with behavioral intention to use E-learning.

H6: Behavioral Intention has a significant positive relationship with Use Behavior to use E-learning.

6. Methodology of research

Two hundred and one (201) students enrolling in the Al-Madinah International University in Malaysia participated in this study and the data were obtained online (online questionnaires at www.surveyshare.com). There are two parts to the questionnaire: Part one contains items for obtaining the background information of the respondents while part two comprises items representing seven factors constructs associated with behavioral intention to use E-learning in order to ascertain the likelihood of level of acceptance. The measurement of degree of acceptance of user employs the 5-point scale.

The relationship between the seven key factors that impact the use of E-learning is evaluated using the regression analysis. This study employs the cross-sectional survey research design. The analyses of the obtained data employed both descriptive and inferential statistics approach. Nonetheless, this paper does not detail the descriptive portion of this research; it is summarized by inferential data output.

7. Data analysis and results

The results demonstrate the significance of each hypothesis; according to the zero-order correlation test. Therefore, all hypotheses are supported at this level. Additionally, the predictive model makes up 60.6% of the variance in behavioral intention (BI) and such result has direct justification from performance expectancy, effort expectancy, social influence, cost and also awareness. Furthermore, the model makes up 70.2 % of the variance in Use Behaviour. Such result has direct justification from behavioral intention and

Use Behavior. The predictive models with R² and path coefficients in the research model can be referred in Figure 3.
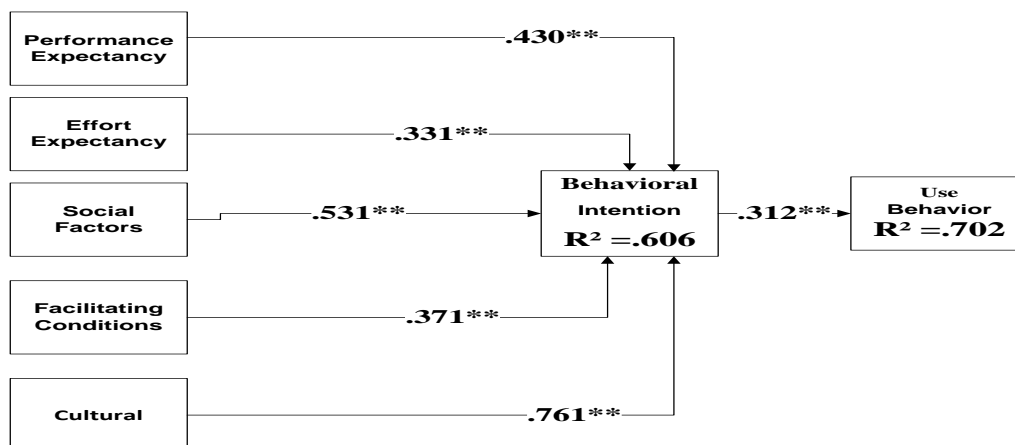

Figure 3. Research Model Hypothesis

8. Discussions and implications

This research explores the readiness of students in Malaysia to use e-Learning in terms of its extent. Performance expectancy, effort expectancy, social influence, and facilitating conditions and Cultural were the employed and described constructs. The government should look into these factors in order to increase the use of e-learning among students. Analyses were performed on data obtained from numerous levels of students. The use of data from many different pools will make this study's outcomes more representative of the population. Further, this study proposes a model deemed fitting for Malaysia's context. This is because the model includes constructs from the Unified Theory of Acceptance and Use of Technology (UTAUT). With respect to the constructs of trust, perceived usefulness, perceived ease of use, attitude toward, behavioral intention, and actual system use' construct; student's intention to utilize e-learning will increase if they are convinced that the internet would make their information gathering from the government and interaction with the government more efficient, and if they can have better control over their interaction with the government. Thus, the government must increase the level of awareness among students on the services that these students can access online. This means that an awareness initiative for that purpose should be developed by the government. The government should not ignore the currently used technology particularly the social media. Thus, the government must change to modern medium as a replacement of the conventional one. Such switch allows the government to offer students with real time information. For the forthcoming research, the proposed model should be integrated with other constructs including the factor of awareness and service quality. Apart from that, since this study only employs sample from one region, the future study should select sample from other regions.

9. Conclusions

Among the students, the motivational factors for use of e-learning are performance expectancy and social factors that facilitate cultural conditions. The factor of performance expectancy social factors facilitating conditions cultural influence motivates the participants to employ e-learning. For educational plan, organization and also policy maker must really pay attention to technology element. Taking into account the element of technology might provide assurance of a higher percentage which would assure effective implementation. Focusing on the factors of performance expectancy social factors facilitating conditions cultural among the educational technology students may ease the integration of e-learning and social media in the context of education. In order to get students to feel motivated to use e-learning, e-learning has to have suitable content and appear attractive to the user. The implementation of social media may benefit from support towards social influence so that the use of e-learning can be fostered.

References

1. Addah, J. (2012). Computer literacy and E-learning: Attitudes among first year students in a Ghanaian medical school. *International Journal of Computer Applications, 51*, 22.

2. Bediang, G., Stoll, B., Geissbuhler, A., Klohn, A., Stuckelberger, A., Nko'o, S., andChastonay, P. (2013). Computer literacy and E-learning perception in Cameroon: the case of Yaounde Faculty of Medicine and Biomedical Sciences. *BMC Medical Education, 13*, 57.

3. Bhuasiri, W., Xaymoungkhoun, O., Zo, H., Rho, J. J., andCiganek, A. P. (2012). Critical success factors for e-learning in developing countries: A comparative analysis between ICT experts and faculty. *Computers and Education, 58*, 843–855.

4. Ein-Dor, P., Segev, E., andOrgad, M. (1993). The effect of national culture on IS: Implications for international information systems. *Journal of Global Information Management, 1*(1), 33-33.

5. e-learning. Retrieved from http://www.ipcsit.com/vol12/6-ICDLE2011E0014.pdf

6. Elgort, I. (2005). E-learning adoption: Bridging the chasm. In *Proceedings of the 22nd Annual Conference of the Australasian Society for Computers in Learning in Tertiary Education.* (pp. 181-185). Brisbane.

7. Frimpon, M.F. (2012). A restructuring of the critical success factors for E-Learning Deployment. American International Journal of Contemporary Research, 2 (3), 115-127.

8. Hofstede , G., H., and Geert , H. (1980). *Culture's Consequences: International Differences in Work Related Values*. Sage: Beverly Hills.

9. Hofstede , G., H., and Geert , H. (1984). *Culture's Consequences: International Differences in Work-Related Values Thousand Oaks*. CA: Sage Publications.

10. Hofstede, G. (1991). *Cultures and Organizations: Software of the mind*. New York: McGraw-Hill.

11. Hofstede, G. J., Jonker, C. M., andVerwaart, T. (2008). Long-term orientation in trade. In F. Hauser (Ed.), *Complexity and Artificial Markets* (pp. 107-119): Springer, Heidelberg.

12. Ikpe, I.B. (2011). E-learning platforms and humanities education: An African Case Study. *International Journal of Humanities and Arts Computing, 5*(1), 83–101.

13. Iqbal, M. J., and Ahmad, M. (2010). Enhancing quality of education through e-learning: The case study of Allama Iqbal Open University. *Turkish Online Journal of Distance Education, 11*, 84–97.

14. Kim, K. S., and Moore, J. (2005). Web–based learning: Factors affecting students' satisfaction and learning experience. *First Monday*, *10*(11).

15. King, E. andBoyatt, R. (2014). Exploring factors that influence adoption of e-learning within higher education. British Journal of Educational Technology (In Press). https://dx.doi.org/10.1111/bjet.12195

16. Liaw, S. S., and Huang, H. M. (2011). A study of investigating learners attitudes toward e-learning. In *2011 5th International Conference on Distance Learning and Education* (Vol. 12, pp. 28-32).

17. Magogwe, J. M., Ntereke, B., andPhetlhe, K. R. (2015). Facebook and classroom group work: A trial study involving University of Botswana Advanced Oral Presentation students. *British Journal of Educational Technology*, *46*(6), 1312-1323.

18. Masoumi, D. (2010). Quality in E-learning within a cultural context.

19. Moore, J. L., Dickson-Deane, C., andGalyen, K. (2011). e-Learning, online learning, and distance learning environments: Are they the same? Internet and Higher Education, 14, 129–135.

20. Nanayakkara, C. (2007). A Model of User Acceptance of Learning Management Systems. The International Journal of Learning, 13 (12), 223-231.

21. Nanayakkara, C., andWhiddelt, R.J. (2005). A Model of User Acceptance of Learning Management Systems: a Case Study of a Polytechnic in New Zealand. Information Systems Technology and its Applications, (pp. 180-190). Palmerston North.

22. Pumper, M.A., Yaeger, J.P., and Moreno, M. A. (2013). Perceptions and Use of Social Networking Sites in the United States and Ecuador: A Mixed-Methods Approach. College Students Journal, 47(3), 478.

23. Socialbakers (2012). Thailand Facebook statistics. Retrieved from http://www.socialbakers.com/facebookstatistics/thailand

24. Sozcu, O.F. (2014). The relationships between cognitive style of field dependence and learner variables in e-learning instruction. Turkish Online Journal of Distance Education, 15(2), 117-144. http://dx.doi.org/10.17718/tojde.11039

25. Stein, C. D., Eisenberg, E. S., O'Donnell, J. A., and Spallek, H. (2014). What dental educators need to understand about emerging technologies to incorporate them effectively into the education process. Journal of Dental Education, 78(4), 520-529.

26. Straub, D., Loch, K.D., and Hill, C.E. (2001). Transfer of information technology to developing countries: A test of a cultural influence model in the Arab World. *Journal of Global Information Management, 9*(2), 141–172.

27. Sun, H., and Zhang, P. (2006). The role of moderating factors in user technology acceptance. *International journal of human-computer studies*, *64*(2), 53-78.

28. Tarhini, A., Hone, K., and Liu, X. (2014). Measuring the moderating effect of gender and age on e-learning acceptance in England: A structural equation modeling approach for an extended technology acceptance model. *Journal of Educational Computing Research*, *51*(2), 163-184.

29. Tarhini, A., Hone, K., and Liu, X. (2015). A cross-cultural examination of the impact of social, organisational and individual factors on educational technology acceptance between British and Lebanese university students. *British Journal of Educational Technology*, *46*(4), 739-755.