[POM 2] STUDENTS ACCEPTANCE ON ONLINE LEARNING

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ABSTRACT

Learning Management System (LMS) has been implemented in Universiti Utara Malaysia (UUM) since year 2000. LMS is one of the information technology tools that provide avenues for communication and knowledge sharing among lecturers and students. Due to its importance, the study meant to investigate the level of students' acceptance towards online learning and its impact on their learning performance. Referring to the study, this article reflects critical outcomes in view of the impact on the students' learning performance. There are 100 students from second, third and fourth year of Bachelor of Operation Management, from School of Technology Management and Logistics, Universiti Utara Malaysia (UUM) which has access of using Online Learning have been selected to participate. The framework of this study is based on Theory of Reasoned Action (TRA). This article shows that there is a significant and strong positive correlation between level of students' acceptance towards online learning and its impact on their learning performance. Equally important, this research is also expected to provide full suggestions on maximizing the benefits of Online Learning.

Keywords: *level of students' acceptance, learning management system, UUM Online Learning, learning performance*

INTRODUCTION

Nowadays, technology has rules the world. The Internet has become an important element in many aspects of life routine, especially in process of learning. Online learning is an approach to delivering and getting educational information via the internet. Existing and emerging e-learning technologies are having immediate, intense, and disruptive transformations on education systems (Archer, Garrison, & Anderson, 1999). The worldwide and even Malaysia's education system is following the trend in using online access. It can give benefit to education institutions in Malaysia from the ease of internet access to provide students with more reliable information in faster and efficiency.

Learning management system (LMS) is one of the important information technology (IT) tools in this knowledge age to increased accessibility, availability and affordability of information computer technology in education. It is one of the knowledge management devices that help e-learning (Ronen, Kohen-Vacs, & Raz Fogel, 2006).

Today's mobile can commonly access to learning resources on their own, place limited value on physical presence and face to face communication, and want credentials of value (Daniel et al., 2009). Study by Sian et al. (2013) shows that students are actively using the internet to support their learning process. How current online teaching tools of LMS meet academician expectation and satisfaction is another concern to fully utilize the tools. Therefore, Universiti Utara Malaysia (UUM) has provided an online education system, which named as UUM Online Learning to benefits the education purpose and also improves the effectiveness of communication during the learning process.

ISSUES AND PROBLEMS

There are some issues like students do not fully utilize the function that UUM Online Learning provided. For instance, some of the students never sign in UUM Online Learning, unless lecturers are giving an online quiz. And, there are some students who are not familiar and not interested in using online learning for their learning purpose. Besides, there is another scene like certain students never download or sign in UUM Online Learning before going to class.

Next, the function of UUM Online Learning is not friendly to use and it will affect students' satisfaction toward online learning. Furthermore, there is a web-based quality problem like UUM Wi-Fi are not function well sometimes so that UUM Online Learning system will be down in certain time. It will be trouble for those lecturers who want to give online quizzes on UUM Online learning. The problems focused in this research included poor levels of acceptance and low level of intention on online learning among UUM students. In order to gain a better understanding of this problem, this research was conducted to investigate the effect of implementation of online learning system on learning performance among UUM students.

This study expects that students' acceptance level on online learning may influence students' academic performance. Research findings expect to be able to determine the relationship between technology acceptance on online learning and performance among Bachelor of Operation Management (BOM) students in UUM. From the fact and statement in previous section, several issues emerge as follow:
RQ1: What is the level of students' acceptance on online learning utilization?
RQ2: What is the relationship between students' acceptance and learning performance?
RQ3: What is the effect of students' acceptance on online learning environment in learning performance?

From these issues, the research objective is proposed to investigate the relationship between students' acceptance on Online Learning and students' learning performance. This research comes out the result of whether the students' behavioral intention towards online learning portal will bring them benefit or not. The result can help the university policy makers to improvise on the segment that needs further enhancement. It may also provide information to the students, lecturers and researchers in this field of online learning. Therefore, the problem of the low usage rate of using UUM Online Learning only can be solved effectively while students' learning performance can be enhanced and helps to improving the reputation of UUM indirectly. This research also studies about Theory of Reasoned Action (TRA) which is used to determine students'

behavioral intention toward online learning. Theory of Reasoned Action (TRA) is a well-known model in the social psychology domain, which judges an individual's behavior is determined by the person's intention to perform the behavior.

LITERATURE REVIEW

Learning Management System (LMS)

LMS is one of the e-learning systems that are useful for both students and instructor in online learning environment. Usually, LMS will help the lecturers to provide their learning materials and also interactivity features such as thread discussions, shared files, and forums. LMS also support management tasks such as delivery and tracking, examination, planning, virtual live classes and several statistical analyses. This may save lecturers' time and effort without making any substantial change in teaching process (Ayub et al., 2010).

The goal of an LMS is to keep track of students' progress and performance. The LMS is not just viewed as an instructional trend but as a tool that benefits the adopters as well. As a web-based learning tool, the LMS facilitates "at any time, any place, any pace" access to learning content and management (Mas Nida et al., 2010). Besides, LMS is internet based software or web-based technology that used to plan, implement and assess a specific learning process (Aziah & Marzuki, 2005). A learning management system can be serving several functions besides delivering e-learning contents. It is also a portal that enables lecturers and students to interact out of the classroom, having a discussion through forum that could otherwise take up too much of time supposed to be spent on learning in the classroom (Adzharuddin & Lee, 2013; Min et al., 2012).

Online Learning (OL)

Based on UUM Websites, the e-learning at UUM started in 2000 developed jointly by local IT Company and UUM, it comprises of twelve modules that provide UUM academic community with arrays of innovative strategies and activities to their users. One of the ways is UUM create Online Learning to helps lecturers and students in teaching and learning process. It began as another online environment for both the instructors and learners for their cooperation, particularly where the face-face is not possible. Online Learning is created based on Modular Object-Oriented Dynamic Learning Environment (Moodle) and one of LMS.

Operational definition of variables involved

There are three independent variables had figured out under students' acceptance level which is behavioral intention, perceive ease of use, and perceive usefulness and dependent variable which is students' learning performance.

(i) Behavioral Intention (BI)

The intention is an indicator that used to capture the influence factors that desired behavior (Ajzen, 1991). Behavioral intention indicates how much effort of an individual would like to commit and perform such behavior. People consider that implication of their actual behavior before they decide to engage or not engage in a given behavior (Ajzen & Fishbein, 1980, p. 5). The higher the commitment, it is more likely to perform such a behavior. Davis et al. (1989:986) defined that "all else being

equal, people form intentions to perform behaviors toward which they have positive impact".

(ii) Perceived Ease of Use (PEOU)

Lee et al. (2005) found that perceived ease of use can influence student's intention to use learning with internet-based indirectly through perceived usefulness. It defined as "the degree to which a person believes that using a particular system would be free from effort" by Davis (1989). While Gong, Xu and Yu (2004) found that perceived ease of use has a significant effect on perceived usefulness and students' attitudes simultaneously.

(iii) Perceived Usefulness (PU)

It defined as "the degree to which a person believes that using a particular system able to enhance his or her job performance" by Fred Davis (1989). Davis (1989) also found that it was a key driver of usage behavior and intention. It enhances students willing to learn at their own speed while e-learning is a stage that provide for people to collaborate, learn, and share the knowledge. Those who perceive e-learning is useful are more likely to use it as a mode of studying.

METHODOLOGY

This study focused on students' acceptance level on online learning and its impact on their learning performance by Students of Bachelor of Operation Management (BOM), from School of Technology Management and Logistics, Universiti Utara Malaysia (UUM). The data for this study was collected by an online survey to obtain the information from 100 BOM students. The respondents are from year 2 and above to ensure the appropriateness for the purposes of the research objective. A set of questionnaire with four sections was used in this study. The respondents are required to rate their level of acceptance towards online learning through a 5 point Likert-type scaling range from 1 (strongly disagree) to 5 (strongly agree). A descriptive analysis was performed by using SPSS software.

Hypotheses study will be carrying out to collect the data that describe the relationship between three variables and its impact on students' learning performance are based on the behavioral intention, perceive ease of use, perceive usefulness and the dependent variable is online learning's impact on learning performance. We hypothesize students' acceptances level has a positive association with students' learning performance.

H1: Behavioral intention of the students to use Online Learning has positive influence in learning performance.

H2: Perceive Ease of Use of the students to use Online Learning has positive influence in learning performance.

H3: Perceive Usefulness of the students to use Online Learning has positive influence in learning performance.

Theoretical framework

Theoretical framework adopted in this paper by using Theory of Reasoned Action (TRA) to carry out this study (refer Figure 1). Learners' technology acceptance plays an important role in the success of online learning program. They need to find out the online learning system which as well as the service as a suitable and useful tool to

improve their performance in learning. They will take part in the online learning process when learners believe that using online learning system can improve their effectiveness and productivity of learning.

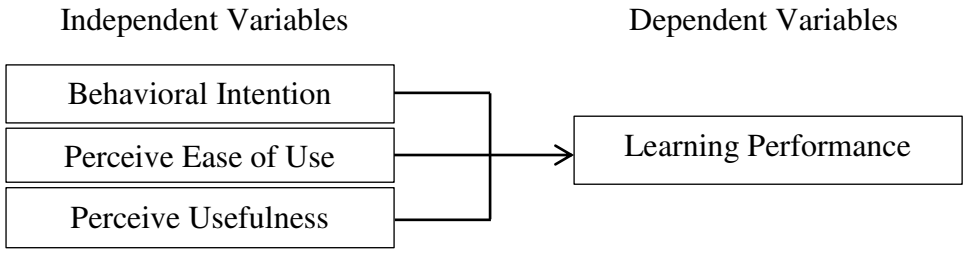

Figure 1
Theoretical framework: The relationship between variables

According to Ajzen (1991), individual's behavioral intention (BI) is a measure of the strength of a person's willingness to perform a certain behavior. Therefore, TRA is used to determine students' behavioral intention toward online learning. According to Chiu et al. (2005) and Roca et al., (2006), they found that found that perceived usability, which included perceives usefulness and perceives ease of use had significant effects on acceptance and next contributed for users' continuance intention.

Theory of Reasoned Action (TRA)
An individual's actual behavior will directly guide by the individual's behavioral intention (BI) (Ajzen, 1980) from Figure 2. According to Ajzen (1991), BI is a measurement of the strength of a person's willingness to perform a certain behavior. There are only a few models elaborate about consumer behavior and behavior theory, known as "Theory of Reasoned Action (TRA)." This theory assumes that an individual is rational and able to use all information that they have on hand when intended to make a decision (Ajzen & Fishbein, 1980).

TRA based on assumption that a person's intentions are formed from two basic determinants, which is the personal factor and social influence. The first determinant, personal refer to: "the individual's positive or negative appraisal of performing behavior" (Ajzen & Fishbein, 1980:6) and noted as attitude towards the behavior. The second determinant, which is the social influence, for example, subjective norm, is the "person's perception of the social pressures that put on him or her to implement or not implement the behavior in question" (Ajzen & Fishbein, 1980:6).

The theory explains that "attitudes are a function of beliefs" (Ajzen & Fishbein, 1980:7). At the end, our positive or negative beliefs toward behavior are determined to behave our intention in a certain way. TRA model gives attentions to which the user believes that using the technology will improve his or her work performance, while preparation refers to how effortless he or she perceives using the technology will be. Both are considered distinct factors influencing the user's attitude towards using the technology, though preparation is also hypothesized to influence attention and attitude towards using the technology. Finally, such attitude towards Online Learning and user satisfaction considered as the behavior of the user.

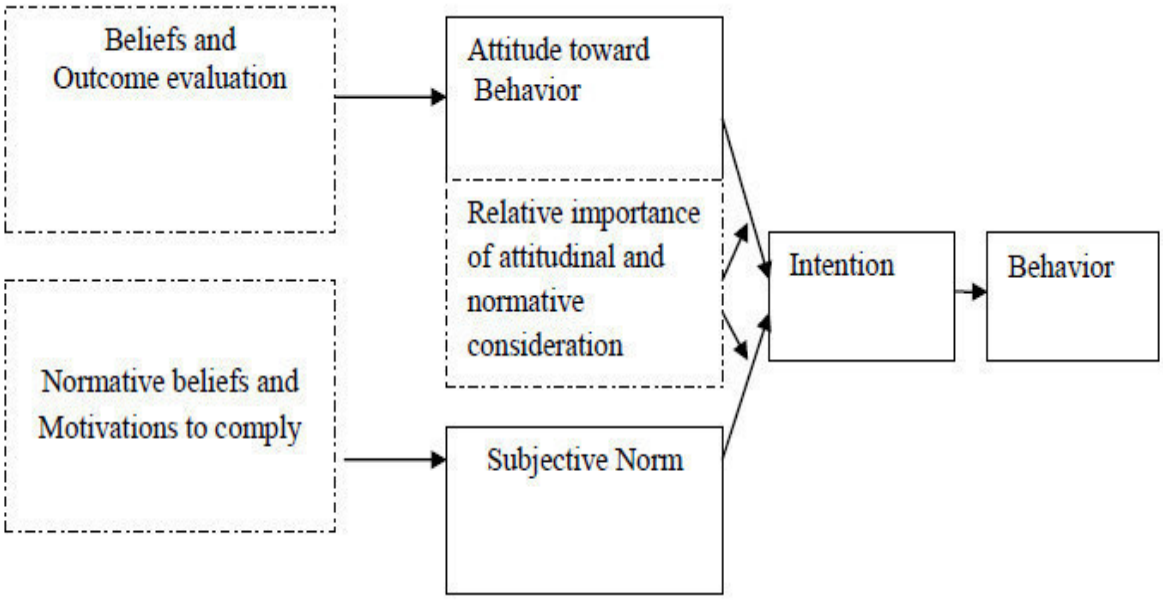

Figure 2
Theory of Reasoned Action (TRA)

FINDINGS AND DISCUSSIONS

Data collection

A total of 120 Google online questionnaires were sent to BOM students of the second-year, third-year and final year students. Due to lacking of name list of the second and third-year students, we just send the questionnaire to those who familiar with. This study was carried within 3 months period. In result, total 100 set of responses received, which represent 83% of responses rate. There are all of the 100 set of response are valid for the analysis.

There is total of 25 items which related in terms of student's individual intention, perceived ease of use, perceived usefulness and learning performance for each independent and dependent variables in our research instrument.

Reliability

Table 1
Cronbach's alpha scores for variables

Variables	No. of Items	Cronbach's Alpha
Behavioral Intention	5	0.83
Perceived Ease of Use	5	0.84
Perceived Usefulness	5	0.90
Learning Performance	5	0.84

The questionnaire was tested for its reliability (Cronbach's α=0.94) and validity. Based on Table 1 above, it shows all of the variables can be accepted (Cronbach's Alpha α>0.60). The Cronbach's Alpha of the independent variable, which is behavioral intention 0.83, perceive of ease use 0.84, and perceive usefulness is 0.90 which is more

than 0.80, considered as excellent reliability value in this study. On the other hand, the reliability value of learning performance is 0.84. Therefore, it can be considered that our items and questions are reliable to measure our variables.

Table 2
Demographic profiles: Year *gender cross-tabulation

Respondents	Gender		Total
	Male	Female	
Year 2	4	10	14
Year 3	9	11	20
Year 4	16	50	66
Total	29	71	100

The demographic frequency of the study presented in Table 2. The respondent was dominated by second-year students (n=14, 14%), third-year students (n=20, 20%), and final students (n=66, 66%). It shows that 29 male (29%) and 71 female (71%) out of the total 100 respondents.

Results

Table 3
Overall mean score

Variables	Overall		
	Year 2	Year 3	Year 4
BI	3.66	3.82	3.84
PEOU	3.74	4.03	3.93
PU	4.07	3.92	3.99
OVERALL	3.82	3.92	3.92
CGPA	3.24	3.40	3.47

Table 3 above shows the overall mean score for the variables in this study. For year 2 students, the highest mean score is perceived usefulness ($\bar{x}$ =4.07), followed by the lowest is behavioral intention ($\bar{x}$ =3.66). Then, year 3 students, perceive ease of use is the highest ($\bar{x}$ =4.03) and behavioral intention is the lowest ($\bar{x}$ =3.82). Mean score for year 4 students, perceived usefulness is the highest ($\bar{x}$ =3.99) and behavioral intention is the lowest ($\bar{x}$ = 3.84). For the overall mean score of year 2, 3 and 4, it shows that the highest is perceived usefulness ($\bar{x}$ =4.07) stated in year 2, and the lowest mean score is ($\bar{x}$ =3.66) within behavioral intention also in year 2. From the homogenous perspective, among the year 2 students show that their agreement of each variable has no different. This follows by year 3 and year 4 students. Next, ranking for year 2 students starts with variables perceived usefulness, perceived ease of use and behavioral intention. Year 3 students, the ranking is perceive ease of use, perceived usefulness and behavioral intention. While, for year 4 students, the ranking follows is perceived usefulness, perceive ease of use, and behavioral intention. From this ranking, it shows that as students grow up in UUM their perception keeps on changing over years. The higher frequency of utilizing benefits of UUM Online Learning will increase the students' rate of learning performance.

Then, the mean score for CGPA of year 2 students ($\bar{x}$ =3.24) is the lowest performance of usage on UUM Online Learning. It shows that the lowest mean score for behavioral

intention affects their CGPA. While mean score of CGPA for year 3 students is ($\bar{x}$ =3.40), which is the moderate performance than CGPA of year 2 students. These mean score shows that perceive ease of use was the highest mean score that becomes the factor that influence CGPA gain by year 3 students. Next, for year 4 students, perceived usefulness is the highest ($\bar{x}$ =3.99) and behavioral intention is the lowest ($\bar{x}$ = 3.84). These mean scores explain that year 4 students are more familiar with utilizing the benefit of online learning performance. It does also prove by their CGPA mean score was the highest among year 2 and year 3 students.

Table 4
Mean score for male and female

Variables	Male			Female		
	Year 2	Year 3	Year 4	Year 2	Year 3	Year 4
BI	3.20	4.22	3.79	3.84	3.49	3.86
PEOU	3.55	4.56	4.10	3.82	3.60	3.87
PU	4.05	4.38	4.33	4.08	3.55	3.88
OVERALL	3.60	4.39	4.07	3.91	3.55	3.87
CGPA	3.33	3.35	3.56	3.20	3.44	3.45

According to the table above, it shows that the mean score of male's and female's respondent. Among the male's respondent from year 2 until year 4, the male's respondent from year 3 was the highest means score for each variables. This proven that the means score of behavioral intention is ($\bar{x}$ =4.22), perceived ease of use with ($\bar{x}$ =4.56) and perceived usefulness is ($\bar{x}$ =4.38). Then, the mean score of CGPA for third-year students is ($\bar{x}$ =3.35), it shows that CGPA from this year is slightly higher than second-year students. Besides, the mean score for perceived ease of use with ($\bar{x}$ =4.56) was the highest mean score that becomes the factor that affects CGPA mean score gain by third-year students.

Next, among the female's respondent from year 2 until 4, the female's respondent from year 4 was the highest means score for each variables. This proven that the means score of perceived usefulness is the highest with the mean score ($\bar{x}$ =3.88), perceived ease of use ($\bar{x}$ =3.87) and behavioral intention is the lowest ($\bar{x}$ =3.86). Then, the mean score of CGPA for fourth-year students is ($\bar{x}$ =3.45), it shows that CGPA from this year 4 is the highest than second-year and third-year students. This means that perceived usefulness ($\bar{x}$ =3.88) influence the students in utilize the benefits of Online Learning. Then, it's improve students learning performance of the year 4 students when the CGPA is also the highest.

From the table above, the respondent from male's respondent in year 3 and female's respondent in year 4 respond that variables perceived ease of use and variables perceived usefulness respectively was the most chosen by them. It can be concluded those variable gives big influence to the students learning performance. Besides, it shows that as students grow up in UUM the higher frequency of utilizing benefits of UUM Online Learning will increase the students' rate of learning performance.

Significant Relationship

Table 6
Correlations between construct and scale reliability values

Variables	Behavioral Intention	Perceive ease of use	Perceive Usefulness	Learning Performance
Behavioral Intention	1.00	.78**	.64**	.63**
Perceived Ease of Use	.78**	1.00	.76**	.74**
Perceived Usefulness	.64**	.76**	1.00	.71**
Learning Performance	.63**	.74**	.71**	1.00

** Correlation is significant at the 0.01 level (1-tailed).

Table 7
Simplified table

Variables	p-value	r-value
Behavioral Intention (BI)	≤ 0.01	0.63
Perceived Ease of Use (PEOU)	≤ 0.01	0.74
Perceived Usefulness (PU)	≤ 0.01	0.71

The correlations analysis between construct and scale reliability values are presented in Table 6 and Table 7 above. The result of Pearson Correlation in between the variables behavioral intention, perceived ease of use and perceived usefulness with learning performance shows that the test is significant. Correlation value for the variables are behavioral intention r=0.63, perceived ease of use is r = 0.74 and perceived usefulness with r = 0.71. The correlation values for perceived ease of use show the highest value among them this is because students attract to use Online Learning when the system is perceived ease of use. Significant value, $p = 0.00$ or $p \leq 0.05$. The hypothesis of there is the variable has positive influence on learning performance was accepted.

CONCLUSIONS

Based on the finding this study has significant impact on student learning performance. This is because, the three hypothesis are supported so it can be concluded that the behavioral intention, perceived ease of use, and perceived usefulness have positive influence on learning performance. The finding also shows that perceived ease of use is the most influence factor in this study. It also shows that BOM students are frequently engaged by using UUM Online Learning as they consider the system is convenient and easy to use in their learning process. Therefore, it drives the students to use the UUM Online Learning to improve learning performance. Besides, the finding of this study have proven independent variables which are individual's intention, perceived ease of use, and perceived usefulness have a relationship with our dependent variables which is student learning performance. Moreover, the findings from this research clearly showed that UUM students are getting understand the values and opportunity to improve their learning performance by using online learning.

REFERENCES

Adzharuddin, N. A., & Ling, L. H. (2013). Learning Management System (LMS) among University Students: Does It Work? *International Journal of e-Education, e-Business, e-Management and e-Learning*, *3*(3), 248.

Ajzen, I., & Fishbein, M. (1980). *Understanding Attitudes and Predicting Social Behavior*. Englewood Cliffs, NJ: Prentice-Hall.

Archer, W., Garrison, D. R., & Anderson, T. (1999). Adopting Disruptive Technologies in Traditional Universities: Continuing Education as an Incubator for Innovation.

Ayub, M., Fauzi, A., Ahmad Tarmizi, R., Jaafar, W., Marzuki, W., Wan Ali, W. Z., & Wong, S. L. (2010). Factors Influencing Students' Use a Learning Management System Portal: Perspective from Higher Education Students. *International Journal of Education and Information Technologies*, *4*(2), 100-108.

Aziah, N., & Marzuki. W. (2005). Innovation for Better Teaching and Learning: Adopting the Learning Management System. *Malaysian Online Journal of Instructional Technology*, *2*(2), 27-40.

Chiu, C. M., Hsu, M. H., Sun, S. Y., Lin, T. C., & Sun, P. C. (2005). Usability, Quality, Value and E-Learning Continuance Decisions. *Computers & Education*, *45*(4), 399-416.

Daniel, J., Kanwar, A., & Uvalić-Trumbić, S. (2009). Breaking Higher Education's Iron Triangle: Access, Cost, and Quality. *Change: The Magazine of Higher Learning*, *41*(2), 30-35.

Gong, M., Xu, Y., & Yu, Y. (2004). An Enhanced Technology Acceptance Model for Web-based Learning. *Journal of Information Systems Education*, *15*(4), 365.

Min, K. S., Yamin, F. M., & Ishak, W. H. W. (2012). Design, Purpose of Usage and the Impact of LMS on Student Learning: A Preliminary Findings. *Navigation*, *3*, 81.

Ronen, M., Kohen-Vacs, D., & Raz-Fogel, N. (2006, June). Adopt & Adapt: Structuring, Sharing and Reusing Asynchronous Collaborative Pedagogy. In *Proceedings of the 7th International Conference on Learning Sciences*, 599-605. International Society of the Learning Sciences.

Sian, Y. C., Yamin, F. M., & Ishak, W. H. W. (2013). Internet Usage among Undergraduate Student in Malaysia. In *Proceedings of Rural ICT Development (RICTD) International Conference*, 224-227.