

MOOCs CONTINUANCE INTENTION IN MALAYSIA: THE ROLE OF INTERACTIVITY AND ENJOYMENT

Mawaddah Mohamad¹
Mawaddah11@gmail.com

Amlus Ibrahim¹
Amlus@uum.edu.my

Mohd Kamarul Irwan Abdul Rahim¹
Mk.Irwan@uum.edu.my

¹Universiti Utara Malaysia, Kedah
School of Technology Management and Logistics

Abstract: *This study aims to investigate the role of Interactivity and Enjoyment has towards the continuance intention to use MOOCs. A sample of 112 participants in Malaysia that have already used Malaysia MOOCs program took part in this study. Correlation and multiple regression analyses were conducted to test the research hypotheses. The findings from the correlation reveal that Interactivity and Enjoyment have strong correlation with the MOOCs continuance intention, while regression analysis indicate that the combination of these factors contribute to continuance intention to use MOOCs among Malaysia students. However, only Interactivity factor showed any real significance on MOOCs continuance intention. This suggests that MOOCs continuance intention was affected by the combination of these two factors.*

Key words: *MOOCs, interactivity, enjoyment, continuance intention*

2018 JGBSE

INTRODUCTION

At the start of an education revolution, the number of Massive Open Online Courses (MOOCs) has increased in recent years. MOOCs are considered to be a recent innovation in online learning with virtual technology-enhanced learning environments. Technology facilitates students learning and the dominants channel through which teachers and students can interact. Thus, social learning is a key element of MOOCs platform (Wu & Chen, 2016); and Interactivity is the most critical element in technology-enhanced learning environments (Spector, Christensen, Sioutine, & McCormack, 2001). Because social learning is a an element of MOOCs, some researchers have proposed a unified generative model to improve the quality of learning via online discussion forums, by devising methods to sustain forum activities and to facilitate personalized learning (Brinton, et al., 2014). In addition, the precise effectiveness strategy in MOOCs was proposed to define metrics for the effectiveness of students when interacting with educational resources and activities (Munoz-Merino, Ruiperez-Valiente, Alario-Hoyos, Perez-Sanagustin, & Kloos, 2015). By introducing MOOCs in education, MOOCs system can help universities deliver learning materials to students all over the world and allow them to access a number of interactive learning tools in their learning process. The

good experience of using interactive learning tools will increase their intention to use the system for a long time (Cheng, 2014). Moreover, the affluent entertainment environment such as video streaming, chat room, online discussion forum, and the variety of apps provided by e-learning platform make it very well-liked (Saade, Tan, & Nebebe, 2008). Hence, Enjoyment when using MOOCs is important to ensure students feeling pleasure and entertain while gaining knowledge.

Besides, MOOCs allow a massive amount of learners to learn on an open and online learning. Despite the momentum of MOOCs, many prominent providers have acknowledged issue regarding MOOCs completion rates. (Jordan, 2014) reported an average completion rate of only 6.5%. In addition, study from (Ab Jalil, Ismail, Bakar, Azizan, & Nasir, 2016) also reported a low completion rate (less than 10%) for Entrepreneurship subject in Malaysia MOOCs. The completion rates may be not the best measurement for MOOCs success, but the low rates do raise question regarding students' willingness to use MOOCs is a continuous basis. Considering the rapid development and adoption of MOOCs for distance learning, an investigation of factors that influence students' continued usage of MOOCs may reveal insights into its viability (Bhattacharjee & Premkumar, 2004) and sustainability (Barnes, 2011). As a result, the current study aims to identify whether and to what extent the abovementioned factors (interactivity and enjoyment) influence MOOCs continuance intention particularly in the context of Malaysia MOOCs program. Specifically, the objective of this study is to answer the following research questions: (1) what is the relationship between Interactivity and MOOCs continuance intention? (2) Is Enjoyment directly correlates with MOOCs continuance intention? and (3) How do Interactivity and Enjoyment in combination effect MOOCs continuance intention?

Continuance intention to use

Once student uses an e-learning system or MOOC, what is his or her motivation to adopt more learning contents at a later date? In this sense, the intent to post-adopt is referred to as continuance intention (Bhattacharjee, 2001b). Understanding how these factors affect users' value perception and continuance intention to use MOOCs will assist MOOCs developers to design more suitable features for this government project.

Some recent studies have found that in varied e-learning environments the main focus should be on the continuance usage behaviour rather than short-term usage (Bhattacharjee, 2001; Daghan & Akkoyunlu, 2016). Studies have also shown that success in information system could not be predicted by studies using concepts such as short-term usage, acceptance and adoption (Japerson, Carter, & Zmud, 2005; Daghan & Akkoyunlu, 2016; Shih, 2008). Therefore, studies on ensuring continuance to use have gained importance.

Malaysia MOOCs

The Malaysia MOOCs program was launched in September 2014, and OpenLearning.com is the official MOOCs platform for all public institution in Malaysia. As online learning approach, MOOCs offer the following benefits for Malaysia; (1) an interactive and engaging delivery that encourages high-degree collaboration and international interactions; (2) global visibility of and access to Malaysian expertise in niche areas; and (3) promote an opportunity for Malaysian higher education institutions to showcase their best programmes and research areas (source: Ministry of Education Malaysia, 2014). Initially, four pilot MOOCs have been launched with four public universities as content developers. These four courses are based on compulsory core courses for undergraduates that are commonly offered by all public universities in

Malaysia. The instructors were recommended to utilize the MOOCs as learning content in a blended learning mode, according to course instructors in their respective universities (Ministry of Education Malaysia, 2014). Until now (2017) all the courses are still on air.

Following the success of the first four MOOCs, the Ministry of Higher Education supported the public universities to each develop a further three MOOCs in 2015, bringing the total number of MOOCs to 64 (Wilshire, 2015). Until 2017, there are more than 100 MOOCs available online. All the courses offered under Malaysia MOOCs are hosted by OpenLearning, which offers a learning management system package that helps institutions create a customised online courses. Lessons are delivered via video lectures, PDF or Power Point slides, while learners are assessed through various course activities such as forums, discussions, quizzes and practices (Mansor, Latifah, & Amina, 2015). These encourage Malaysians how to learn with various ICT tools and this may give positive impact to students compete with other developed countries.

RESEARCH MODEL AND HYPOTHESES

This study proposes a research model that identifies the factors Interactivity and Enjoyment as predictors of MOOCs continuance intention. The relationships between these constructs are integrated in the conceptual model depicted in Figure 1. The basic assumption is that MOOCs continuance intention is determined by perceived interactivity and perceived enjoyment.

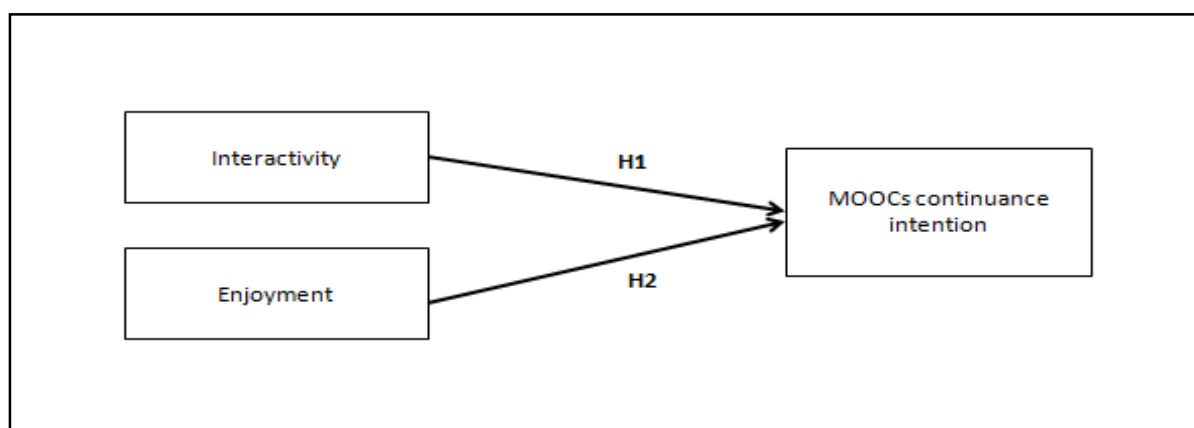


Figure 1: Proposed research model

Interactivity

Many people are using blogs, wikis, social networks, and messaging systems to search information, sharing knowledge, communicate with people, doing transaction and even shop. The underlying idea is that people are comfortable with the tools they consider to be their own, and they may wish to continue to use them (Fini, 2009). MOOCs interactivity is related to the 'dialogue' between learners and MOOCs tools through which learners become engaged and involved in the e-learning process. Through MOOCs, interactive learning happened between facilitator and student, students themselves, as well as student and system by applying learning resources (e.g. videos and documents) and also learning activities, for example like solving practice questions, doing assignment and taking part in discussions (Lim *et al.*, 2014).

The communication tools such as discussion room, email, discussion board, online chat room and video conferencing assist instructors to interact conveniently with students to make

them feel connected and also encourage students to be connected to others within an interactive virtual learning environment (Lee, Cheung, & Chen, 2005; Mohd-Azul, 2012). Therefore, interactivity offers many advantages to enhance participation and user experiences in using online systems for a long period of time. There are many suitable principle drivers that measure and explain relationships between interactivity and intention to use towards online systems. For example, Chen and Yen (2004) claimed that interactivity features influence users' behavioural intention when looking at e-learning websites and engaging in online chats. Thus, the following proposition is proposed:

H1: Interactivity has a positive correlation with MOOCs continuance intention.

Enjoyment

Enjoyment is referred to as an intrinsic motivation variable to use an information system. Enjoyment in dealing with website highly impacts the intention to use (Koufaris, 2002; Moon & Kim, 2001). A student's subjective feelings of joy, elation and pleasure play a critical role in explaining usage behaviour of web-based learning (Saade, Tan, & Nebebe, 2008). Individuals who are intrinsically motivated may use a new technology for the enjoyment they find in the activity. Since they enjoy the process, they may tend to keep using the system on a continuous basis. As noted, e-learning offer many entertainment interactive functions, hence give opportunity to users obtain great enjoyment when using such systems (Koufaris, 2002).

Generally, Enjoyment is the degree to which a person believes that using a particular system would be enjoyable. The model suggested that the presence of entertainment of MOOCs materials and applications would make the students more enjoyable with the learning effort. Few studies have found perceived enjoyment has positive correlation with intention to use (Saade, Tan, & Nebebe, 2008; Moon & Kim, 2001; Zhou & Feng, 2017). This suggests that higher level of enjoyment motivates users to spend more time on the website. In addition, study from (Bataineh, Al-Abdallah, & Alkharabsheh, 2015) disclosed a significant direct effect of enjoyment on users' continuance intention to use Facebook. Accordingly, it can be predicted that enjoyment will have a direct relationship with MOOCs continuance intention. Hence the second proposition proposed:

H2: Enjoyment has a positive correlation with MOOCs continuance intention

RESEARCH METHODOLOGY

In this study, a survey questionnaire was employed to test the hypotheses formulated in the previous section. The target participants of this study were the students who have experience using Malaysia MOOCs program. An e-mail invitation consist a link to a documented questionnaire with the assistance of Google form was sent randomly to those who have been sign up with OpenLearning platform and registered as a Malaysia MOOCs student at any courses. Data were collected from September to October 2017; overall, 112 valid surveys were returned and be the basis for this study analysis.

FINDINGS AND DISCUSSION

Analysis of demographic data

Demographic statistics help to assess if the sample were representative of the population. This section figures out the respondent profile and comprised information about their experience in using Malaysia MOOCs platform. Table 1 presents the details of the results.

Table 1: Summary of respondent profile and MOOCs experience

	Items	Frequency	Percentage (%)
Gender	Male	33	29.5
	Female	79	70.5
Race	Malay	80	71.4
	Chinese	4	3.6
	India	3	2.7
	Sabah/Sarawak	21	18.8
	Others	4	3.6
Frequency of accessing MOOCs	About once a day	11	9.8
	A few times a week	58	51.8
	A few times a month	14	12.5
	Once a month	4	3.6
	First time using	25	22.3
MOOCs tools/activities frequently used	E-mail	19	17
	Discussion room	23	20.5
	Chat room	5	4.5
	Download materials	23	20.5
	Watch video	42	37.5
Frequent location of access	Lecture hall	8	7.1
	Hostel	82	73.2
	Computer lab	6	5.4
	Home	12	10.7
	Library	3	2.7
	Others	1	0.9

From 112 respondents, 33 of them are male and 79 are female. Most of the respondents are Malay which represents 71.4 percent, followed by Sabahans and Sarawakians (approximately 20%). Only less than five percent of respondents are Chinese or Indian respectively.

For the questions regarding their experience in using MOOCs, the analysis indicated more than half are assessing MOOCs accounts a few times a week. Besides, the output also shows that approximately 40 percent of respondents prefer to watch video among all the MOOCs activities offered in the platform, and they are less interested in using the chat room. Results also highlight that 73.2 percent of the students are frequently accessing MOOCs in hostel.

Reliability test

In evaluating the internal consistency of the variables, the reliability of the questionnaire was assessed using Cronbach's α . According to (Hair *et al.*, 2010) a Cronbach's α value above 0.6 indicates an acceptable level of reliability. The alpha value for all variables in this study

revealed a range between .913 and .94 accordingly (see Table 2) indicates the variables were reliable.

Table 2: Reliability analysis results

Items	Mean	Alpha value (α)
Interactivity	3.696	0.917
Enjoyment	3.701	0.94
Continuance intention	3.676	0.913

Correlation analysis

To answer the research objective, the Pearson product-moment correlation method was used in this study to test hypotheses H1 and H2, which involves testing the relationships between each factor and MOOCs continuance intention.

Table 3: Correlation coefficients

Variables		Interactivity	Enjoyment
MOOCs continuance intention	Pearson correlation, r	.738**	.844**
	p-value	.000	.000

** Correlation is significant at the 0.01 level (2-tailed)

From the analysis, results suggest two outputs. First, Interactivity is significantly associated to MOOCs continuance intention at value $r=.738$ and $p<0.01$. The strength of the relationship is .738 which proposes a strong correlation. The alternative hypothesis of possible correlation between variables can be accepted, as suggested by the small p-value (.000). Thus, positive correlation here is significant and construe that H1 is accepted. Second, the result also shows a positive correlation between Enjoyment and MOOCs continuance intention. The strength of the relationship also indicates a strong correlation (.844). This positive relationship suggests that higher respondents' preference in Enjoyment means the higher effects to MOOCs continuance intention will be. The null hypothesis of no correlation can be rejected as the p-value is very small (.000), thus a significant correlation is established. Hence, the result also supported H2.

Multiple regression analysis

The objective of this analysis is to determine the aggregate effect of both independent variables (interactivity and enjoyment) on MOOCs continuance intention. Multiple regression analysis was employed to evaluate the simultaneous effects of all the independent variables on the MOOCs continuance intention. Table 4 is a summary of all the t-test for the significance of the regression coefficients (β 's).

Table 4: Influence of predictors of MOOCs continuance intention

Variable	Unstandardized Coefficients		Standardized Coefficients	T	Sig.
	B	Std. Error	Beta		
Constant	.473	.219		2.157	.033
Interactivity	.808	.101	.800	7.971	.000
Enjoyment	.058	.113	.051	.510	.611

As shown in Table 3, the regression coefficients of the two factors are different from zero but not all reach significant level. Only Interactivity reported the p-value <0.05. Even though there is significant relationship between MOOCs continuance intention and both factors jointly, but the factor Enjoyment has no significant contribution to the prediction of improved continuance intention. This can be concluded that MOOCs continuance intention is affected by the combination of both factors all together.

CONCLUSION

In general, this study has investigated two important factors; Interactivity and Enjoyment, which influence users' continuance intention to use MOOCs in Malaysia study context. Findings revealed that Interactivity and Enjoyment has a strong positive correlation with MOOCs continuance intention, which support H1 and H2 for this study. These findings are in accordance with (Chen & Yen, 2004), who claimed that Interactivity influencing continuance intention; and result of H2 is supported by (Saade, Tan, & Nebebe, 2008; Zhou & Feng, 2017) indicated a direct effect between Enjoyment and intention to use. However, result from multiple regression analysis claimed that these two factors should be in a combination in order to gain a significant effect on MOOCs continuance intention. Although taken in combination the continuance factors are together significant in the regression explanation of MOOCs continuance intention, but on individual basis, only Interactivity could bring about significant changes when referred to the β coefficients in the estimated regression equation.

References

- Ab Jalil, H., Ismail, A., Bakar, N., Azizan, N. A., & Nasir, K. (2016). *Evaluation of Malaysia Pilot MOOC (Final Report)*. Serdang, Malaysia: CADe UPM.
- Barnes, S. (2011). Understanding use continuance in virtual worlds: Empirical test of a research model. *Information & Management*, 48(8), 313-319.
- Bataineh, A. Q., Al-Abdallah, G. M., & Alkharabsheh, A. M. (2015). Determinants of continuance intention to use social networking sites: Studying the case of facebook. *International Journal of Marketing Studies*, 7(4), 121-135.
- Bhattacharjee, A. (2001b). An empirical analysis of the antecedents of electronic commerce service continuance. *Decision Support Systems*, 32(2), 201-214.
- Bhattacharjee, A., & Premkumar, G. (2004). Understanding changes in belief and attitude toward information technology usage: A theoretical model and longitudinal test. *MIS Quarterly*, 28(2), 229-254.
- Brinton, C., Chiang, M., Jain, S., Lam, H., Liu, Z., & Wong, F. (2014). Learning about social learning in MOOCs: From statistical analysis to generative model. *IEEE Transactions on Learning Technologies*, 7(4), 346-359.
- Chen, K., & Yen, D. (2004). Improving the quality of online presence through interactivity. *Information & Management*, 217-226.
- Cheng, Y. M. (2014). Roles of interactivity and usage experience in e-learning acceptance: a longitudinal study. *International Journal of Web Information Systems*, 10(1), 2-23.
- Daghan, G., & Akkoyunlu, B. (2016). Modeling the continuance usage intention of online learning environments. *Computers in Human Behavior*, 198-211.
- Fini, A. (2009). The technological dimension of a Massive Open Online Courses: The case of the CCK08 Course tools. *The International Review of Research in Open and Distance Learning*, 10(5).

- Japerson, J., Carter, P., & Zmud, R. (2005). A comprehensive conceptualization of post-adoptive behaviours associated with IT enabled work systems. *MIS Quarterly*, 29(3), 525-557.
- Jordan, K. (2014). Initial trends in enrolment and completion massive open online courses. *The International Review of Research in Open and Distance Learning*, 15(1), 133-160.
- Koufaris, M. (2002). Applying the The Technology Acceptance Model and Flow Theory to online consumer behaviour. *Information Systems Research*, 205-233.
- Lee, M. K., Cheung, C. M., & Chen, Z. (2005). Acceptance of internet-based learning medium: the role of extrinsic and intrinsic motivation. *Information & Management*, 42(8), 1095-1104.
- Malaysia, M. o. (2014). *Malaysian Education Blueprint on Higher Education [Discussion Document]*. Retrieved from Shift 10: Globalised Online Learning: http://moe.gov.my/cms/upload_files/files/Chapter%2010-Globalised%20Online%20Learning%20FINAL%20EN_2.pdf
- Mansor, F., Latifah, A. L., & Amina, M. (2015). MOOCs in Malaysia: A preliminary case study. *E-ASEM Forum: Renewing The Lifelong Learning Agenda for The Future*. Bali, Indonesia.
- Mohd-Azul, M. (2012). The impact of interactivity features in enhancing online communication satisfaction. *Malaysian Journal of Communication*, 28(2), 21-36.
- Moon, J., & Kim, Y. (2001). Extending the TAM for a world-wide-web context. *Information & Management*, 38(4), 217-230.
- Munoz-Merino, P., Ruiperez-Valiente, J., Alario-Hoyos, C., Perez-Sanagustin, M., & Kloos, C. (2015). Precise effectiveness strategy for analyzing the effectiveness of students with educational resources and activities in MOOCs. *Computers in Human Behavior*, 108-118.
- Rafaeli, S. (1988). Interactivity: from new media to communication. In R. Hawkins, J. Wiemann, & S. Pingree, *Advancing communication science: Merging mass and interpersonal process* (pp. 110-134). Newbury Park: CA: Sage.
- Saade, R., Tan, W., & Nebebe, F. (2008). Impact of motivation on intentions in online learning: Canada vs China. *Issues in Informing Science & Information Technology*, 137-147.
- Shih, H.-P. (2008). Continued use of a Chinese online portal: An empirical study. *Behaviour & Information Technology*, 27(3), 201-209.
- Sims, R. (2000). An interactive conundrum: Constructs of interactivity and learning theory. *Australian Journal of Educational Technology*, 16(1).
- Spector, J., Christensen, D., Sioutine, A., & McCormack, D. (2001). Models and simulations for learning in complex domains: using causal loop diagrams for assessment and evaluation. *Computers in Human Behavior*, 17(5/6), 517-545.
- Wilshire, A. (2015). *Ministry of Higher Education Malaysia and OpenLearning: Bringing Malaysian Education to the World*. Sydney, Australia: Malaysia MOOCs & OpenLearning Case Study.
- Wu, B., & Chen, X. (2016). Continuance intention to use MOOCs: Integrating the technology acceptance model (TAM) and task technology fit (TTF) model. *Computers in Human Behavior*, 1-12.
- Zhou, R., & Feng, C. (2017). Difference between leisure and work context: The role of perceived enjoyment and perceived usefulness in predicting mobile video calling use acceptance. *Frontiers in Psychology*, 1-14.