FACTORS AFFECTING MOOCS CONTINUANCE INTENTION IN MALAYSIA: A PROPOSED CONCEPTUAL FRAMEWORK

Mawaddah Mohamad
mawaddah11@gmail.com

Mohd Kamarul Irwan Abdul Rahim
mk.irwan@uum.edu.my

School of Technology, Operation & Logistic Management
University Utara Malaysia, Malaysia

Abstract: MOOC is a new extension of e-learning that allow a massive amount of learners to learn on an open and online learning environment. The effectiveness of MOOCs however, is an open question as the completion rates and the overall use of the system are substantially low. This situation leads to raising the question of the long term usage of the technology. Specifically, this study aims to identify the factors that may contribute to the students’ intention to continue use MOOCs in Malaysia study context. Synthesized on previous literature related to online learning adoption, four factors have been identified to influence students to use MOOCs on a continuous basis such as usefulness, enjoyment, interactivity, and openness.

Keywords: MOOCs, Continuance Intention, Openness, Interactivity, Usefulness, Enjoyment

INTRODUCTION

Learning using technology has become a popular approach within higher education institutions due to the continuous growth of internet innovations and technologies. To meet educational purposes and students’ demands, e-learning development emerges to be a catalyst for today’s educational institutions (Alsabwy, Cater-Steel, & Soar, 2013; Docimini & Palumbo, 2013). Massive Open Online Courses (MOOCs) are a recent expansion in e-learning that have experienced rapid development and achieved substantial attention from a broad range of learners (Zheng, Rosson, Shih, & Carroll, 2015). MOOCs are important differences from previous approaches to online education in terms of free registration and open to all, which attract substantially larger audiences than traditional online education (Voss, 2013). Millions of individuals have enrolled in a relatively few MOOCs over a relatively short period of time. Wildavsky (2014) reported that there are 160 thousands of students from around 190 countries participated in MOOCs learning environment. In addition, the Malaysia MOOCs program which is based in OpenLearning platform entails more than one million participants in more than 100 courses offered (www.malaysiamoocs.com., 2018).

Off particular, there is a distinct difference between Asian and European countries regarding MOOCs (Kim, 2015). Asian countries have much in their governments’ active initiatives for MOOCs as can be found in Malaysia, Thailand, Phillipines, China and South
Korea. In these countries, the national brands were used to promote MOOCs globally such as K-MOOCs (in Korea), Thai MOOCs or Malaysian MOOCs, as well as JMOOCs (Japan). The common reasons for their adoption in higher education institutions are; (1) MOOCs as a means to provide quality education for anyone who seeks it; (2) Promoting an institution’s brand; (3) Attracting new learners to enroll at an institution; (4) Potential for collaborating with other institutions; (5) Potential for research and development in online education; and (6) Transforming traditional teaching and learning approaches (Breslow et al., 2013). For individual basis, MOOCs is seen to increase students’ performance in learning, built confidence and may enhance their communication skill (Ab Jalil, Ismail, Bakar, Azizan, & Nasir, 2016).

Given a large number of students enrolled in MOOCs program weather to get a degree or as a supplement tool, a high dropout rates is an issue than need to be concerned (Alraimi, Zo, & Ciganek, 2015; Zheng, Rosson, Shih, & Carroll, 2015). In addition, a low overall use of the system also reported in such study. For example, (Norazah, Helmi, & Mohamad-Amin, 2015) revealed only 25 percent of students enrolled in MOOCs use the system on a daily basis. Even though the MOOCs is offered for free and have many advantages for students’ learning, but it seems that there is limited number of students that utilized the system fully. The low completion rate or overall uses of the system do raise questions regarding the continue use and the attractiveness of the system itself. This study is an attempt in that direction. The focus is to understand the way the various factors influencing students to actively revisit the system or continue use MOOCs, interact.

From the theoretical point of view, the manner end user accepts MOOCs platform is crucial to the universities that bear the responsibility to the successful implementation of the internet based learning environment (Venkatesh, Morris, Davis, & Davis, 2003; Lee, Cheung, & Chen, 2005). Moreover, researchers have emphasised that the continuation of usage of device or system is a way of measuring success in the implementation of information system (Bhattacherjee, 2001; Ramayah, Ahmad, & Lo, 2010; Limayem & Cheung, 2008; Mcknight, Choudhuryb, & Kacmar, 2002). In a similar argument, Limayem and Cheung (2008) believe that the yardstick of success is not the adoption of technology in itself but also in the user believes in the use of the technology on a continued basis. Therefore, there is a need to perform frequent check in order to uphold the usage of technology on the continuous basis. This current research will focuses on the students’ perception of the system that makes them decide to continue use MOOCs offered by Malaysia local universities.

LITERATURE REVIEW

Continuance Intention

Research in technology adoption started receiving and growing interest about the importance of individual use of a technology after initial adoption (Guinea & Markus, 2009) which relies on the concept of continuance intention. Bhattacherjee (2001) defined continuance intention as “long term viability of an IS and its eventual success depends on its continued use rather than first-time use”. (Lee & Kwon 2011) stated that continuance intention describes about user’s decision to continue use a specific technology that user’s have already using it. For instance, Bhattacherjee (2001) developed a model known as Expectation Confirmation Model (ECM) to understand the difference between initial acceptance and continuous use. The ECM highlight the moved beyond first-time use of an information system to examine the longer term consequences of continued use or continuance. High intention to continue use e-learning can
lead to lower dropout-rates, higher persistence, and greater commitment to the program (Wu & Chen, 2016). Considering these potential benefits, continuous intention is important to be studied to increase retention and lower drop-out rates.

According to (Hernandez-Ortega et al., 2014), although a technology is success at its initial stage, users’ will re-evaluate their decision and may decline the use of the technology in near future. In addition, the willingness of students to continually use the MOOCs online learning plays an important role in the successful future application. This is so as a student can easily leave the electronic learning technology anytime when the student feels unsatisfied and thus moved back to the student traditional choice (Lai, Chen, & Chang, 2016; Wu & Chen, 2016). Of more concern to discontinuance is the users’ need that is not offered by the system regardless of any prior reason of the student earlier acceptance (Limayem, Hirt, & Cheung, 2003; Wangpipatwong, Chutimaskul, & Papasratorn, 2008).

Factors Affecting MOOCs Continuance Intention

In learning environment, learner continuance intention reflects how positively learners perceive their learning experiences, is an important indicator of program and student-related outcomes (Liaw & Huang, 2013). Prior studies noted that many factors have been debated as factors influencing e-learning use behavior. For example usefulness (Joo & Choi, 2016; Ouyang et al., 2017; Alraiimi et al., 2015; Hakami et al., 2017) and enjoyment (Thong et al., 2006; Nurkhaliza, 2014; Saade et al., 2008). Students will highly use an e-learning system if they perceived the system as useful and give benefit that can improve their learning performance. Meanwhile, enjoyment is an intrinsic motivation that drives learners into the flow state which allows them to experience joy and pleasure while learning in MOOCs; and thus motivate them to continue use the system (Moon & Kim, 2001).

Apart from that, system characteristic is also one of the important factors in determining users’ willingness to use a system (Pituch & Lee, 2006). MOOCs system is interactive since it provides social interactivity tools such as forum, email and chat room which give priority to individual to connect with people; and system interactivity- how they feel about the system itself. However, the elements of system characteristic focusing on Interactivity are yet to be discussed in the context of e-learning specifically MOOCs. Besides, this current study took into consideration the unique characteristics of MOOCs which is Openness. Openness is a highly remarkable property of MOOCs which bring new strategies in higher education and offer free non-credit courses benefits with large scale and long life learning for anyone who has access to the internet. As MOOCs is a new phenomenon in e-learning, only few empirical studies discussed on this factor (Alraiimi et. al., 2015). Therefore, to fill this gap, this study also examines the role of Openness on MOOCs continuance intention to use in Malaysia study context.

Usefulness

Usefulness or perceived usefulness is defined as an individual’s perception that the use of technology can improve performance (Davis, 1989). Usefulness is similar to relative advantage in the model Diffusion of Innovation (DOI) and performance expectancy in Unified Theory of Acceptance and Use of Technology (UTAUT). In the TAM, TAM2 and TAM3, Usefulness was theorised as a direct determinant of behavioural intention, while ECM posits that
Usefulness as a direct determination for continuous intention. The importance of Usefulness as an antecedent that determines behavioural intention to use like a computer system has been noted in prior studies (e.g. Davis, 1989; Alawadhi & Morris, 2008; Ong, Lai, & Wang, 2004). In addition, Usefulness is one of the major factors used in technology adoption study (Davis, 1989; Moon & Kim, 2001).

In addition, Usefulness is a key determinant of intention, which encourages 21st century, IS users to adopt more innovative and user-friendly technologies that give them greater freedom (Pikkarainen, Pikkarainen, & Karjaluoto, 2004). In fact, an individual’s willingness to use a specific IS for their activities depend on their perception of its use (Hanafizadeh, Behboudi, Khoshksaray, & Shirkhani, 2014). Perceived usefulness reflects the users’ subjective assessment of whether using a particular system would enhance job performance (Davis, 1989). E-learning users need to see e-learning as a useful tool that can improve their learning efficiency, enabling them to better communicate with their friends, teachers, colleagues and others online.

Specifically, Hakami et al., (2017) reiterated that MOOCs can give benefits to users such that MOOCs give valuable source of knowledge that support learning, complementing curricular in university and expending knowledge in related field, sharing knowledge, promote self-directed learning ability. Apart from that, MOOCs also has been seen can reach people anywhere at any time, and the platforms can remove the community costs such as travelling, time, money and etc. For example, the asynchronous feature of MOOCs allows people who live in remote areas like villages to benefit from the training courses provided in the platforms (Shrader, Wu, & Owens-Nicholson D., 2016).

**Enjoyment**

Perceived enjoyment is conceived as the extent to which the activity of using computers is perceived to be enjoyable in its own right, apart from any performance consequences that may be anticipated (Davis, Bagozzi, & Warshaw, 1992). Nysveen et al., (2005) and Lin & Bhattacherjee, (2001) believe that the key facets of enjoyment include entertainment, relaxation, excitement and fun. Several studies have been conducted to investigate the role of perceived enjoyment as an intrinsic motivation factor on capturing the students’ intention to use e-learning (Lee, Cheung, & Chen, 2005; Saade, Tan, & Nebebe, 2008; Yi & Hwang, 2003).

Intrinsic motivators representing a student’s subjective feelings of joy, elation, pleasure, and positive holistic experience also play a critical role in explaining user acceptance and usage behaviour of web-based learning (Saade, Tan, & Nebebe, 2008). Prior studies have proposed that intrinsic motivators, such as Enjoyment can explain the behavioural intention to use information system (Davis, Bagozzi, & Warshaw, 1992; Van der Heijden, 2004). Venkatesh et. al., (2002) posited that individuals who are more intrinsically motivated may use a new technology for the enjoyment they find in the activity and, since they enjoy the process, they may tend to underestimate its difficulty and find it easier to use.
Moreover, enjoyment is a critical motivation that leads people to use websites. According to (Wu, Hiltz, & Bieber, 2010) perceived enjoyment will increase the satisfaction of e-learning system, which is satisfaction has been proven as a major determinant of continuance intention (Bhattacherjee 2001). When using a technology can bring them fun and pleasure, users will be intrinsically motivated to adopt it. As noted, e-learning often has many entertainment interactive functions and users can often obtain great enjoyment when using such systems (Koufaris, 2002). Thus, it can be expected that perceived enjoyment will improve their affective attitude toward e-learning and increase their acceptance intention. When users log into an e-learning platform, they not only want to learn the online course, but also communicate with others and enjoy themselves (Lee M., 2010).

Interactivity

From a perception-based perspective, perceived interactivity was defined as “the extent to which users perceive their experiences as a simulation of interpersonal interaction and sense they are in the presence of a social other” (Thorson & Rodgers, 2006). Lee (2000) believed that when measuring the level of interactivity, the important of users perceive and/or experience technological features was more important than provision of these features. McMillan and Hwang (2002) proposed that interactivity is important to be discussed in term of users’ perceptions of two-way communication, level of control, navigation, responsiveness, sense of place, and involved user activities.

In the context of e-learning system, interactivity refers to the perceived ability of an e-learning system to provide an interaction platform for participants including students themselves and the interactions between students and facilitator (Pituch & Lee, 2006). Perhaps the different dimension used by researchers resulted to the various definition were established, but two types of interactivity was usually paid attention among researchers which is human-to-human interactivity and human-to-system interactivity (Hoffman & Novak, 1996; McMillan & Hwang, 2002).

Essentially, interactivity in computer-mediated environments may cause users’ perceived utilitarian (useful) values of information system offered (Cyr, Head, & Ivanov, 2009; Yoo, Lee, & Park, 2010), and it can improve users’ usage intention of the information system (Lee, 2006; Zhou, Lu, & Wang, 2010). 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). Based on the discussion, this study believes the interactivity factor may cause a significant effect towards user intention to use MOOCs.

Openness

According to Siemens (2013), the concept of open online courses can be relates to “massive” due to a high number of students enrollment, offer an alternative way to a traditional class of teaching and learning environment as well as provide a chaotic open web of fragmented information to be shared. Openness is a prominent feature of MOOCs (Alraimi et al., 2015). The concept of Openness give opportunity to students all over the world experiencing learning activities without any entry requirements and the most special is no courses fees will be
charged. MOOCs are open to a vast number of participants regardless of their location, age, income, ideology, and level of education.

MOOCs have the opportunities of opening up learning and offering an extensive range of choice in different areas and disciplines for a massive number of participants from anywhere beyond the countries to enrol the free online courses without any admittance requirements (Siemens, 2013; Liyanagunawardena et al., 2013). Moreover, the introduced MOOCs also permit learners to reuse, revise, remix, and redistribute all course materials to anyone as seen pertinent (Yousef, Schroeder, & Wosnitza, 2015). They are, however, not open from a copyright perspective (Peter & Deimann, 2013). Moreover, open access allows students to enjoy a distinctive learning process, activities and relationships in diverse networking and plentiful in knowledge and experience (Amo, 2014).

In addition, most participants believed that Openness of platforms and free course encourage people to learn through such platform (Hakami et al., 2017). If platforms were not free, number of learners would decrease. Moreover, free education eases joining the greatest number of courses according to the learners’ need without restrictions. However, although free education encourage enrolment but unfortunately often decreases the commitment of learners to complete the courses (Hakami et al., 2017; Shrader, Wu, & Owens-Nicholson D., 2016). Besides, the free courses also give negative impression for some people that they are not of good quality and are less valuable (Hakami et al. 2017). This study believes that perceived system openness is one of the factors that may enhance students’ to accept and continue use MOOCs.

CONCEPTUAL FRAMEWORK

In line with the extensive review of prior research, a conceptual framework as shown in Figure 1 is constructed to demonstrate the relationship between those identified factors namely usefulness, enjoyment, interactivity and openness with MOOCs continuance intention.

![Figure 1: Conceptual Framework](image-url)
The importance of usefulness as a factor that determines behavioural intention to use like an information system (IS) has been noted in prior studies (Davis, 1989; Bhattacherjee, 2001; Keong et. al., 2012). Prior empirical studies in the context of e-learning have claimed a positive influence of usefulness on intention to use (Sumak et al., 2011; Sa et al., 2016). Liu et al., (2010) found that Usefulness was the most influential variable in predicting the intention to use the web-based learning system. The study is in line with the findings from Joo and Choi (2016) and Ouyang et al., (2017), which also found continuous intention, is positively affected by usefulness. Thus, the following hypothesis is formulated:

\[ H1: \text{There is a significant relationship between usefulness and MOOCs continuance intention.} \]

Several studies have been conducted to investigate the role of perceived enjoyment as an intrinsic motivation factor on capturing the students’ intention to use e-learning (Lee, Cheung, & Chen, 2005; Saade, Tan, & Nebebe, 2008; Yi & Hwang, 2003). In particular, (Alraimi et al., 2015) has also verified the significant and positive relationship between Enjoyment and user intention to use e-learning. Interest in the topic is one of the important reasons for participating in a MOOC (Davis, Dickens, Leon, Sanchez-Vera, & White, 2014). Accordingly, the Hypothesis 2 is developed:

\[ H2: \text{There is a significant relationship between enjoyment and MOOCs continuance intention.} \]

Prior studies reiterated the important factor of e-learners’ interactivity in virtual learning environments (Johnson, Hornik, & Salas, 2008; Paechter, Maier, & Macher, 2010; Selim, 2007; Wang, 2003). Zhang et al., (2006) investigated the impact of interactive video on user satisfaction in e-learning environment revealed that the students provided with interactive video achieved significantly better learning performance and satisfaction. Study from Alzahrani and Ghinea (2012) construe that the effectiveness of e-learning is affected by the interactivity of the system. In addition, Pituch and Lee (2006) also found interactivity effects e-learning use behaviour. Hence, the third hypothesis is:

\[ H3: \text{There is a significant relationship between interactivity and MOOCs continuance intention.} \]

Openness is refers to the degree to which a person expects to access, use, reuse, modify and redistribute the course resources for free. Most studies found a positive relationship between openness and continuous intention to use (Alraimi et al., 2015; Shrader, Wu, & Owens-Nicholson, 2016). Rousing (2014) suggested that the adoption of MOOCs also rely on policy support for MOOCs as an open resource and free registration. This was supported by (Davis, Dickens, Leon, Sanchez-Vera, & White, 2014) who found that the freeness of MOOCs is a fundamental aspect that motivates a student to follow a MOOC. This leads to the following hypothesis:

\[ H4: \text{There is a significant relationship between openness and MOOCs continuance intention.} \]
IMPLICATION OF THE STUDY

This study would have theoretical and practical contributions for both scholar and practitioners. This study would contribute in enriching the existing body of knowledge on continuance intention and MOOCs literatures. This research contributed to the theoretical implication, by developing and validating research model that focused on post adoption usage by examining the continuance intention of Malaysia MOOCs system. As MOOCs has become popular phenomena in online learning and many universities offer MOOCs as full online courses whereas some are implementing MOOCs as additional courses to the program offered in universities, it is become interestingly important to understand the factors contribute to continued use of this kind of online learning. From the perspective of practitioners, understanding the factors that might affect the MOOCs continuance intention may be useful to MOOCs developers and teachers to create more valuable materials, interesting platform, and fun activities in order to capture user willingness to learn in MOOCs on a long term.

CONCLUSION AND RECOMMENDATION

Research on continuance intention has been a focus of researchers’ discussion (Bhattacherjee, 2001; Hsu & Chiu, 2004; Liang & Yei, 2011; Roca, Chiu, & Martinez, 2006), and has received great attention in the context of online learning (Wu & Chen, 2016; Pereira, Ramos, Gouvea, & Costa, 2015; Roca & Gagne, 2008; Ramayah, Ahmad, & Lo, 2010). However, there are still a limited number of studies conducted in the area of MOOCs that explored and examined the various factors that may affect MOOCs continuance intention particularly in Malaysia and to be specifically, focuses on MOOCs features. Therefore there is a need to study in bringing the gap of the research in MOOCs continuance. As the implementation of MOOCs in Malaysia academia is still in its infancy phases, further research in this area is needed.

REFERENCES


Kim, B. (2015). *MOOCs and Educational Challenges around Asia and Europe: What do we know about MOOCs?* South Korea: KNOU Press.


