



Faculty of Cognitive Science and Human Development

**READINESS AND ACCEPTANCE OF UNIMAS' UNDERGRADUATES
TOWARDS MASSIVE OPEN ONLINE COURSES (MOOCS)
FOR LEARNING**

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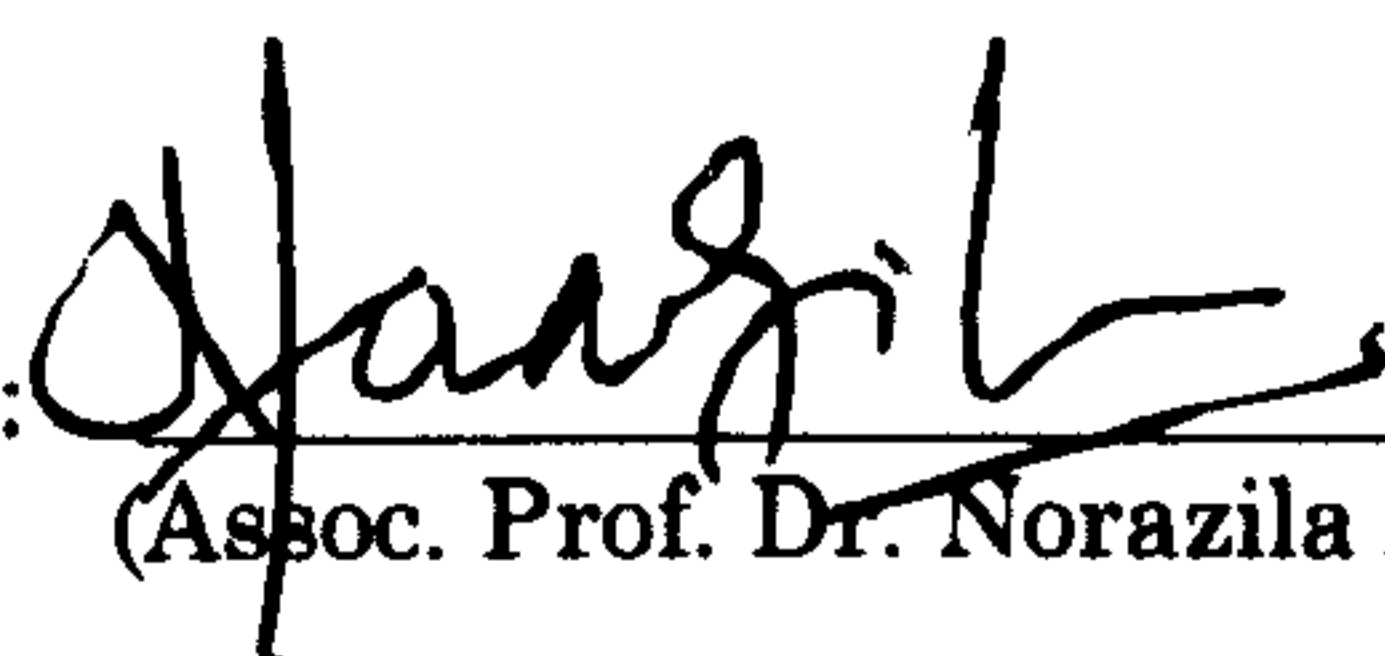
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**READINESS AND ACCEPTANCE OF UNIMAS' UNDERGRADUATES TOWARDS
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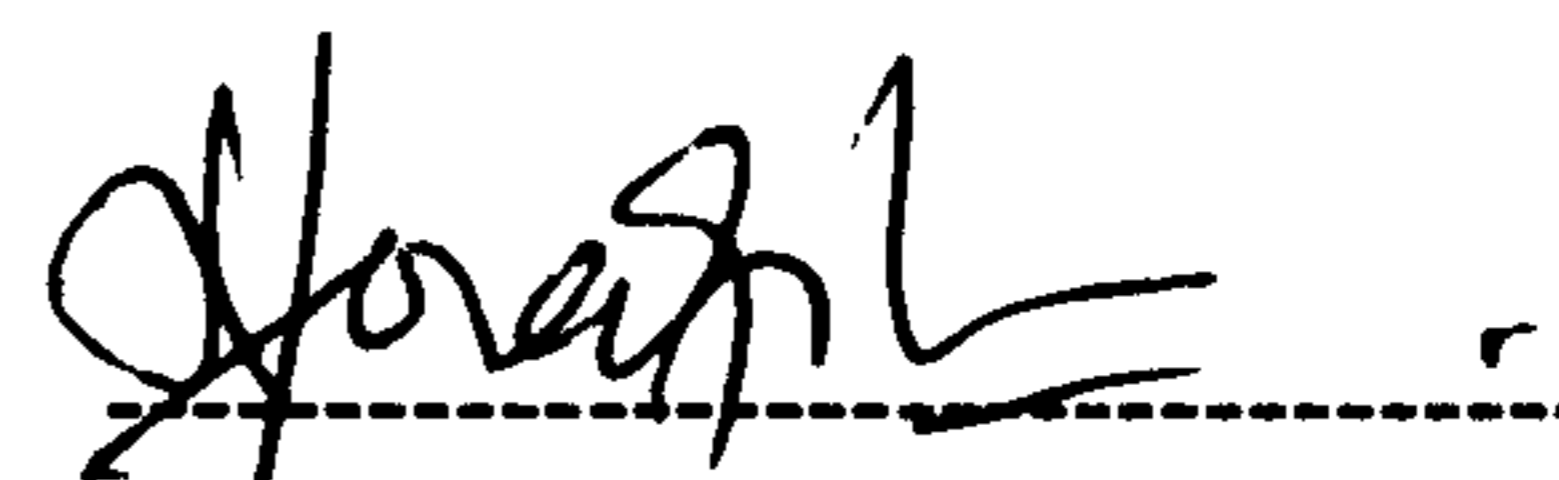
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**This project is submitted
in partial fulfilment of the requirements for a
Bachelor of Science with Honours
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**Faculty of Cognitive Science and Human Development
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(2015)**

The project entitled 'Readiness and Acceptance of UNIMAS' Undergraduates towards Massive Open Online Courses (MOOCs) for Learning' was prepared by Tasnim Mohd Taib and submitted to the Faculty of Cognitive Sciences and Human Development in partial fulfillment of the requirements for a Bachelor of Science with Honours (Cognitive Sciences)

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ABSTRACT

With increasing needs of learning and development of new technology to fit in that need, a change is needed in the learning curriculum to meet all expectations. Massive Open Online Courses (MOOCs) is any open course offered for unlimited number of participations from any location around the world anytime of the year. The current introduction of MOOCs in Malaysia Higher Education brings the current learning technology upfront to the undergraduates of Malaysian Higher Institution. This research study is conducted to find out University Malaysia Sarawak (UNIMAS') undergraduates' perception towards Massive Open Online Courses (MOOCs) from the point of readiness and acceptance using an integrated model Technology Readiness and Acceptance Model (TRAM). Participants are UNIMAS' undergraduates of all seven faculties and one centre taking Malaysia MOOCs starting in September 2014 and ending on January 2015. 210 respondents have answered a set of questionnaires to find out their readiness and acceptance towards this new technology. The findings acquires further initiatives to increase undergraduates' innovativeness in trying out new technology as well as giving out a deep complete comprehension towards understanding the technology itself (MOOCs). It is highly recommended that 'blended learning' concept is put into focus to improve and elevates Malaysian Higher Education in line with the global trends.

Keywords: Massive Open Online Courses (MOOCs), Malaysia MOOCs, UNIMAS' undergraduates', Readiness, Acceptance, Technology Readiness Acceptance Model (TRAM, blended learning

ABSTRAK

Peningkatan dalam tuntutan pembelajaran dan perkembangan teknologi baru dalam dunia pendidikan menuntut perubahan didalam sistem pembelajaran. Ini adalah untuk mencapai hasrat semua pihak dalam dunia pendidikan. *Massive Open Online Courses* (MOOCs) adalah pembelajaran secara terbuka tanpa had pelajar ataupun had kedudukan geografi tidak kira masa dalam setiap tahun. Pengenalan MOOCs dalam Kementerian Pendidikan Tinggi baru-baru ini membawa dunia MOOCs terus kepada pelajar-pelajar prasiswazah Institusi Pendidikan Tinggi Malaysia. Kajian ini dilakukan untuk mengenalpasti kebersediaan dan penerimaan pelajar-pelajar prasiswazah Universiti Malaysia Sarawak (UNIMAS) terhadap kegunaan MOOCs dalam pembelajaran menggunakan model *Technology Readiness and Acceptance Model* (TRAM). Mereka ini adalah pelajar prasiswazah yang menuntut prasiswazah di ketujuh-tujuh fakulti dan sebuah pusat di UNIMAS dan mengambil program Malaysia MOOCs pada September 2014. Seramai 210 orang pelajar telah menyertai kajian ini. Dapatan kajian ini menuntut usaha tambahan bagi meningkatkan daya ingin mencuba pelajar dan pendedahan yang mendalam dan menyeluruh terhadap penggunaan teknologi baharu ini (MOOCs). Konsep pembelajaran bersepadu (*blended learning*) diketengahkan untuk menambah baik dan meningkatkan taraf pendidikan tinggi Malaysia selari dengan perkembangan dunia semasa.

Kata kunci: *Massive Open Online Courses (MOOCs), Malaysia MOOCs, UNIMAS' undergraduates', Readiness, Acceptance, Technology Readiness Acceptance Model (TRAM), blended learning*

CHAPTER 1

INTRODUCTION

Massive Open Online Courses (MOOCs) is another initiative of free online courses resulted from Open Educational Resources (OER) through the provision of open access to course content (Hong et al., 2014).

According to UNESCO (2013) Open Education Resources (OER) is an online database where free and openly licensed educational materials can be accessed by anyone, anywhere at any time. It provides a strategic opportunity to improve quality of education and becomes a medium to facilitate in policy dialogue, knowledge sharing and capacity building. OER drives the movement of Massive Open Online Courses (MOOCs) that started to be recognized in July 2011.

MOOCs is a popular e-learning (Daradoumis, Bassi, Xhafa and Caballé, 2013). It is an on-going trend in innovation, experimentation and the use of technology originated from distance and online learning thus providing learning opportunities for large number of learners (Siemens as cited in Daradoumis, Bassi, Xhafa and Caballé, 2013, p.139-142) .

Pappano (as cited in Miguel, Caballé & Prieto, 2013) define MOOC as “open, free, participatory and distributed courses” illustrating a new era of online education, easily and widely accessible on the Internet engaging huge capacity of students.

MOOCs are designed for thousands of students participating simultaneously from different origins and with different backgrounds, education levels and use of languages (Daradoumis, Bassi, Xhafa & Caballé, 2013).

Quoted by Hegyesi & Kártyás (2013), “today’s learning goes well with our free time activities and knowledge acquired through our cultural and education lives”. Hegyesi & Kártyás (2013) stated that learning takes place in two dimension which are formal and informal learning. As we go by every day, we encounter many changes that makes learning a necessity. Today, the formal teaching that we are used to once before has to modernize so it may keep up with the constant demand (Hegyesi & Kártyás, 2013).

The constant growing diversity of students affecting educational planning and practice in all settings recognizing that all students do not learn the same way and teachers have to understand that his or her way of learning before may not reach all student nowadays (Dickinson, 1997). According to Dickinson (1997), Perceptual differences that accounts for many students cannot learn effectively by just hearing or reading information as described by Charles Letteri and other authors.

Dickinson (1997) stated that since the emerge of new technologies where there is high level of viewing through television or computers, learning can be facilitated by charts, diagrams, mind-maps, videos or any other kind of visual aids. He stated in his book that for many older students, thinking is directly connected to interactions with people and materials thus learning is best when it is explored in the environment using

hands-on materials and building upon one curiosity and desire to make sense of the surrounding world (Dickinson, 1997).

The progress of ICT and the Internet has influenced the way knowledge is delivered and transmitted on a huge scale which have resulted in the development of e-learning (Ali, 2004). Ali (2004) cited that J. Rosenberg stated that “e-learning is the use of Internet technologies to deliver a broad array of solutions that enhance knowledge and performance”. Currently, many universities and industries are implement e-learning to enhance their operation effectiveness.

According to Malaysia Education Blueprint, amongst the 11 shifts proposed is Globalised Online Learning’ on shift 9 (Malaysian Education Blueprint 2013-2025, 2012). Trying to achieve 5 aspiration of the new education system and students in Malaysia (access, quality, equity, unity and efficiency) as well as the focuses upon six student attributes (ethics & spirituality, leadership skills, national identity, language proficiency, thinking skills and knowledge), the Ministry of Education have evaluated and planned out the country’s education path in the next ten years (Malaysian Education Blueprint 2013-2025, 2012). In Malaysia, e-learning is introduced to those participating in undergoing open and distance learning (ODL) programmes (Ali, 2004).

Shift 9 of ‘Globalised Online Learning’ focuses upon “building capabilities of the academic community, and explore the establishment of a national e-learning platform to co-ordinate and spearhead content development” (Malaysian Education Blueprint 2013-2025, 2012). Amongst the plans to achieve this is launching MOOCs in subjects that is unique to Malaysia. This will then become a part of the blended

learning models where students will be benefited from the current new technologies of learning (video conferencing, Massive Open Online Courses (MOOCs)).

One of Malaysia's Strategic Plan (NESP) which was launched in 2007 is Intensifying Internationalization of Higher Education in the country which has initiated many policies development taking into consideration of the current global trends in internationalization of higher education and efforts of many Asia countries in trying to become the education hubs in the region (National Priorities: Recent Trends and Future Developments Malaysia). The Malaysian Government has plans to attract more international students to Malaysia making it a regional educational hub (Al-Atabi, 2013).

According to Al-Atabi (2013), one of the useful tools to achieve an educational hub country is by implementing MOOCs as it can help internationally branding Malaysian universities. The Ministry of Higher Education have launched officially Malaysia MOOCs program starting September 2014/2015 session; though some program have been accessible before September 2014. The programs offered are *Tamadun Islam dan Tamadun Asia (TITAS)*, *Kesepaduan Hubungan Etnik (HE)*, Introduction to Entrepreneurship or ICT Competency (KPM Learning Zone, 2014).

There is evidence of previous research that teaching-learning environment do effect how students learn (Lindblom-Ylänne, 2008). According to Lindblom-Ylänne (2008) amongst the aspects that influence students' learning are perceptions of teaching, course content as well as the structure. Research has shown that positive

perceptions of the teaching-learning environment brings a positive relation to the approach of students to learning and so does vice-versa (Kreber, 2003).

It is crucial for MOOCs to be evaluated from the students' perception as it will determine their approach to it for learning. MOOCs is still new in the Malaysia Higher Education institution thus making it a new technology to be used for learning.

Adopting new technologies is essential to improve the efficiency and effectiveness of various processes (Godoe & Johansen, 2012). As cited by Godoes & Johansen (2012), it is unfortunate that many technology-based products and services never may reach their full capabilities and some are rejected. According to Godoe & Johansen (2012), explaining and predicting user adoption to new technology is vitally important.

This new technology (MOOCs) will be used by Malaysian undergraduates thus their readiness towards the usage can be evaluated by Technology Readiness Index (TRI). Readiness is preparedness of the students. Preparedness is anything related to awareness, knowledge of use, attitude to use as well as acquiring the skill to use the technology (Ayotola & Morenikeji, 2011).

The other measurement to be taken is the acceptance of the undergraduates towards this new technology (MOOCs). Acceptance is user behavioural intention to use and actual use of a technology (Keller, 2007).

Both of these models are integrated together in the TRAM to be used to test and ensure that users can utilize the technology both efficiently and effectively. If a

technology have high usability and usefulness, it shows that users are most likely to accept and implement it vice versa.

The objective of this study is to find out the acceptance and readiness of UNIMAS' undergraduates towards Massive Open Online Courses (MOOCs) for learning. The independent variable of personality constructs (optimism, innovativeness, discomfort and insecurity).

The following are the specific objectives of this research study:

1. To examine the effect of UNIMAS' undergraduates optimism on the perceived usefulness to use MOOCs for learning.
2. To examine the effect of UNIMAS' undergraduates optimism on the perceived ease of use to use MOOCs for learning.
3. To examine the effect of UNIMAS' undergraduates innovativeness on the perceived usefulness to use MOOCs for learning.
4. To examine the effect of UNIMAS' undergraduates innovativeness on the perceived ease of use to use MOOCs for learning.
5. To examine the effect of UNIMAS' undergraduates discomfort on the perceived usefulness to use MOOCs for learning.
6. To examine the effect of UNIMAS' undergraduates discomfort on the perceived ease of use to use MOOCs for learning.
7. To examine the effect of UNIMAS' undergraduates insecurity on the perceived usefulness to use MOOCs for learning.
8. To examine the effect of UNIMAS' undergraduates insecurity on the perceived ease of use to use MOOCs for learning.

The conceptual framework of this research is derived from Technology Readiness and Acceptance Model (TRAM); an integrated model from Technology Readiness Index (TRI) and Technology Acceptance Model (TAM). The four personality constructs which are optimism, innovativeness, discomfort and insecurity are positive and negative attitudes towards the use of new technology (Godoe & Johansen, 2012).

The independent variable of this research is the four personality constructs as mentioned above while the dependent variable of this research is perceived usefulness and perceived ease of use. The following is the graphical representation of the conceptual framework of this research:

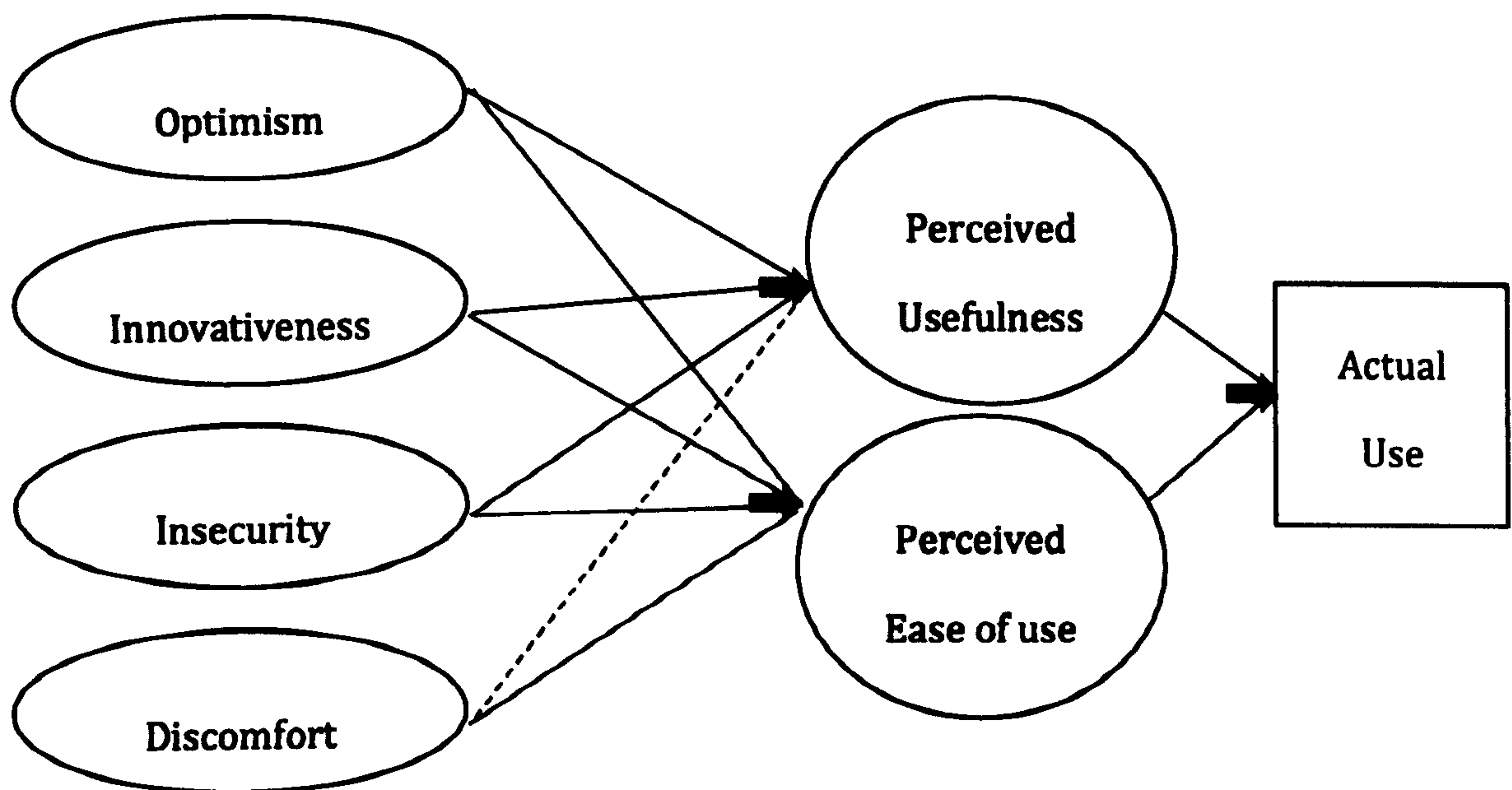


Figure 1 Conceptual framework discussed based on integrated model of technology readiness and technology acceptance (TRAM) (Chutter,

According to Godoe & Johansen (2012), people who are optimistic and innovative towards a new technology have positive effects on perceived ease of use and perceived usefulness of the technology whereas vice versa for those who feels discomfort or insecure towards the technology have negative effects upon perceived ease of use and perceived usefulness.

The following is listed the research questions for the research study which comprises of ten questions aligned with the ten objectives stated before:

RQ 1: What is UNIMAS' undergraduate optimism upon the perceived usefulness towards Massive Open Online Courses (MOOCs) for learning?

RQ 2: What is UNIMAS' undergraduate optimism upon the perceived ease of use towards Massive Open Online Courses (MOOCs) for learning?

RQ 3: What is UNIMAS' undergraduate innovativeness upon the perceived usefulness towards Massive Open Online Courses (MOOCs) for learning?

RQ 4: What is UNIMAS' undergraduate innovativeness upon the perceived ease of use towards Massive Open Online Courses (MOOCs) for learning?

RQ 5: What is UNIMAS' undergraduate discomfort upon the perceived usefulness towards Massive Open Online Courses (MOOCs) for learning?

RQ 6: What is UNIMAS' undergraduate discomfort upon the perceived ease of use towards Massive Open Online Courses (MOOCs) for learning?

RQ 7: What is UNIMAS' undergraduate insecurity upon the perceived usefulness towards Massive Open Online Courses (MOOCs) for learning?

RQ 8: What is UNIMAS' undergraduate insecurity upon the perceived ease of use towards Massive Open Online Courses (MOOCs) for learning?

Below is the 8 research hypothesis:

H₀ 1.1: There is no significant effect of UNIMAS' undergraduates optimism related to perceived usefulness towards Massive Open Online Courses (MOOCs) for learning.

H₀ 1.2: There is no significant effect of UNIMAS' undergraduates optimism related to perceived ease of use towards Massive Open Online Courses (MOOCs) for learning.

H₀ 1.3: There is no significant effect of UNIMAS' undergraduates innovativeness related to perceived usefulness towards Massive Open Online Courses (MOOCs) for learning.

H₀ 1.4: There is no significant effect of UNIMAS' undergraduates innovativeness related to perceived ease of use towards Massive Open Online Courses (MOOCs) for learning.

H₀ 1.5: There is no significant effect of UNIMAS' undergraduates discomfort related to perceived usefulness towards Massive Open Online Courses (MOOCs) for learning.

H₀ 1.6: There is no significant effect of UNIMAS' undergraduates discomfort related to perceived ease of use towards Massive Open Online Courses (MOOCs) for learning.

H₀ 1.7: There is no significant effect of UNIMAS' undergraduates insecurity related to perceived usefulness towards Massive Open Online Courses (MOOCs) for learning.

H₀ 1.8: There is no significant effect of UNIMAS' undergraduates insecurity related to perceived ease of use towards Massive Open Online Courses (MOOCs) for learning.

This research study will contribute into knowing the readiness and acceptance of UNIMAS' undergraduates towards using Massive Open Online Courses (MOOCs) for learning which may able to contribute in average the perception of Malaysian undergraduates as University Malaysia Sarawak makes up ___% of the total undergraduates in Malaysia Higher Institutions..

Next is the definition of term of each of the key words and other important elements of the study research is discussed; OER, MOOCs, blended learning, readiness and acceptance.

Open Educational Resources also known as OER are any digitised materials that is accessible freely and openly for educators, students and self-learners that can be use and re-use for teaching, learning and research (Hylén, 2006).

A newspaper article describe MOOCs as courses that are free, credit-less, offered online and for massive participation all across the world (Pappano, 2012).

Oxford dictionary defines MOOCs as a course of study available over the internet without charge to a large number of people (Sivamuni & Sujoy, 2013). Malaysia MOOCs programs are *Tamadun Islam dan Tamadun Asia* (TITAS), *Kesepaduan Hubungan Etnik* (HE), Introduction to Entrepreneurship or ICT Competency (KPM Learning Zone, 2014).

Blended learning is creation of learning environment made up of a combination of various delivery methods such as face-to-face interactions, self-paced and individualized learning and online interactions (Ali, 2004).

Readiness is “preparedness has to do with awareness, knowledge of use, attitude to use as well as getting skilled in the use of information technology” (Ayotola & Morenikeji, 2011). Acceptance is “user behavioural intention to use and actual use of an information technology” (Keller, 2007).

This research study can only be conducted to UNIMAS’ undergraduates who were enrolled in Massive Open Online Courses (MOOCs) offered by Higher Ministry of Education Malaysia which are *Tamadun Islam dan Tamadun Asia* (TITAS), *Kesepaduan Hubungan Etnik* (HE), Introduction to Entrepreneurship and ICT Competency during September session 2014/2015.

This chapter has outlined the introduction of the study, background of the study, the problem statements, objectives, conceptual framework, research questions, research hypothesis, significance of the study, definitions of term and limitations of the study.

CHAPTER 2

LITERATURE REVIEW

This chapter will discuss upon literature review of importance and promises of Massive Open Online Courses (MOOCs), trends in Malaysia Higher Education and implementation of MOOCs, Readiness and Technology Readiness Index (TRI), Acceptance and Technology Acceptance Model (TAM), and the integrated model; Technology Readiness and Acceptance Model (TRAM).

As cited by Tu et al. (2013), a study by deWaard on 2011 found the real potential in their MOOC is the uprising of learning networks among students enrolled in a many-to-many interactive relationship, rather than the traditional one-to-many model of interactions between instructors and individual students. This relationship can form new environment, with significant changes in the role of instructors.

The Commonwealth of Learning stated that MOOCs are tools of facilitating efficient creation, distribution and use of knowledge and information for learning by taking advantage of OER or other available online resources, and they can be used to support different forms of “connectivity” among the students (Embi & Alsagoff, Overview of Open Educational Resources (OER), 2013).

According to Kay, Reimann, Diebold, and Kummerfeld (2013), researches built MOOCs on assumption that there are great teachers out there that when they are put on video with a couple of other activities such as assignments and quizzes, it is largely sufficient for establishing educational quality.