

ACCEPTANCE, USE AND SUCCESS OF E-LEARNING SYSTEMS IN DEVELOPING COUNTRIES: A COMPARISON FROM MALAYSIA AND TANZANIA

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ABSTRACT

Finding an effective model which guiding universities in developing countries on acceptance, use and success of e-learning systems has been a tricky. This has been contributed largely with inadequate of factors explaining the existing models. This research study is aimed at comparing and contrasting results of two developed models in Tanzania and Malaysia respectively. Explored factors and hypotheses existing in two developed models will be compared and contrasted. The unified model will be deduced which explaining the acceptance, use and success of this systems. It implies that between these two countries there are considerable number of common factors for guiding successfully acceptance, use and success of e-learning systems, however Malaysia has been better off in terms of course contents, design and delivery. The significance of these result is on policy marking and strategy formulation of educational institutions which are eager to have comprehensive e-learning systems in developing countries, Malaysia and Tanzania in particular.

Keywords: e-learning systems, model, universities, developing countries, factors.

1 INTRODUCTION

There is an increasing adoption of Information and Communication Technology (ICT) in an education sector in developing countries (Tossy, 2017). Since 1990 many of developing countries were started accepting and use ICT in education to facilitate and enhance provision of learning and teaching to key education stakeholders (Naresh & Reddy, 2015). E-learning systems is referred as type of web-application systems which is specialised in distribution of learning contents to different users who are accessing contents through their computing devises connected by internet (Ahmed, 2013; Ehlers, 2009; Lwoga & Komba, 2015). Adoption in this context means a way of accepting and use of e-learning systems in educational settings (Maina & Nzuki, 2015). Developing countries referred as “the countries which need equitable and maintainable social and economic growing” (Ssemaluulu, 2012). Tanzania and Malaysia are all falling under category of developing countries (Supian, Shah & Yosof, 2015).

Studies shows that number of universities which managed to accept and use e-learning systems in Tanzania is 46% and most of adopted universities are public universities (Lashayo & Gapar, 2017). Majority of e-learning systems platforms are Moodle-based in universities with a record of 75% (Lashayo & Gapar, 2017). This rate of Moodle-based in universities is close to the rate of Moodle-based in Higher Learning Institution (HLIs) in Tanzania which record 78% (Munguatosha et al, 2011). Rate of adoption of e-learning systems in public universities is 67% while in private universities is 33% (Lashayo & Gapar, 2017).

In Malaysia studies show that rate of adoption of e-learning systems is 65% (Azhari & Ming, 2015; Hussin et al., 2009) and majority of universities which managed to have these systems are public universities. Type of existing platforms in universities are Open Source with 57.7% (Moodle been a popular and Claroline), 34.6 % purchased and 15.4% developed internally (Embi, 2011).

Use of e-learning systems in developing countries is becoming problematic. Studies show that in University of Dar es Salaam (UDSM) only 9.68% of instructors are still using that system after been trained (Mtebe & Raisamo, 2014). In another front taker university, which is Open University of Tanzania (OUT) studies show

that only 12.4% of instructor are using it (Bhalalusesa, Lukwaro, and Clemence, 2013). In Ardhi University (ARU), literature show that e-learning system was last for about two years after been in an operation from 2010 (Mgendi, 2010). These three universities give an indicator of how difficult has been on keeping use of e-learning systems to key users in developing countries.

Acceptance, use and evaluation of success for e-learning systems in Malaysia is one of key agenda of ministry of higher education in Malaysia, since beginning of implementation of e-learning systems in Malaysia in year 2000 (Azhari & Ming, 2015; Embi, 2011; Goi & Ng, 2009).

Research shows that irrespective of considerable studies on acceptance, use and success of e-learning systems in developing countries, still there is a lack of having an effective model which would be used to provide a guidance in developing countries. This study aimed at comparing two models developed from same base model (Lashayo & Gapar, 2018) and from that comparison, a deduced model which will be used in both countries (Malaysia and Tanzania) to guide acceptance, use and success of e-learning systems in universities and possibly extending to other developing countries. Specifically, this study will do the following objectives:

- 1) To compare common and un-common factors existing in between two validated models.
- 2) To compare common hypotheses existing in between both validated models.
- 3) To deduce unified model which will act effectively in both countries.

Structure of this paper is as follows: first section is *literature review*, a critical review of number of research studies done in Malaysia, both descriptive and quantitative studies which were tried to unveil success factors for acceptance, use and measuring of e-learning systems have been reviewed, then followed by *methods* section, in this section different methods used in this paper have been explained and justified including method to compare and contrast, it followed up by *analysis and discussion* section, in this section similar and different pair of factors and hypotheses have been identified and discussed, results obtained have been compared with literature, last section is *conclusion and future studies*, in this section major contribution have been elaborated and future studies have also been recommended.

2 LITERATURE REVIEW

There are factors which influencing adoption of e-learning systems in Malaysia, Goi and Ng (2009) conducted descriptive studies on factors affecting e-learning systems success in Malaysia by considering the following: program content, web page accessibility, learner's participation and involvement, web site security and support, and institution commitment, interactive learning environment, instructor competency, and presentation and design. Goi and Ng (2009) found that program content, web page accessibility, learner's participation and involvement, web site security and support, and institution commitment had higher score than interactive learning environment, instructor competency, and presentation and design, which implies that program content, web page accessibility, learner's participation and involvement, web site security and support, and institution commitment are more influential in course of acceptance and use of e-learning systems in Malaysia. In another study by Abdul-Razak et al. (2014), it found that Information Quality, Service Quality and System Quality determine behaviour intention to use e-learning systems.

Study of Embi (2011), it used a sample of 26 Institutions of Higher Learning (IHLs) in Malaysia and performed a descriptive survey on following factors policy, governance, Learning Management Systems (LMS), Training, e-Content development and Integration of e-learning in teaching and learning. Embi (2011) found that 61.5% of IHL have no e-learning policy, 80.8% of institutions have specialised unit to manage e-learning systems, e-learning training is 69.2% for academic staff and 50% for students, in e-learning content development, 50% have dedicated centre for developing e-learning contents and on integration of e-learning in teaching and learning, 42.3% of IHLs offer more than 50% of their course online. This study found that all IHLs surveyed has e-learning system. This study shows that at least each factor has been achieved more than 30%.

Al-rahmi, Othmani and Yusuf (2015) in their quantitative study which include 268 undergraduate students of Universiti Teknologi Malaysia (UTM) found that effectiveness of e-learning systems in Malaysia universities is influenced by self-efficacy, interface, community, usefulness, students' satisfaction and intention to use e-learning. Other quantitative studies in Malaysia include Chang (2014) which found five factors, Abdul Razak, Abu Bakar, Abdullah, Abdullah (2016) who found four factors (system quality, information quality and service quality and behavioral intention) and Alzahrani, Mahmud, Ramayah, Alfarraj and Osama (2017) who found six

factors (Information Quality, System Quality, Service Quality, Satisfaction, Intention to Use, Actual Use) are influencing e-learning systems in Malaysia.

Although there are considerable efforts which have been devoted on studying acceptance, use and success for e-learning systems but no research had tried to compare quantitatively between these two developing countries specific in universities level.

3 METHODS

This study used data results from two quantitative results conducted in 2017 by Lashayo and Gapar. Same study done in Tanzania which collected and analysed a total of 1,005 students sample from eight universities (public and private owned universities) and later on, in Malaysia which employed a total of 142 students from Management and Science University (MSU) as a case study. Two models' results will be compared and contrasted and a common (unified model) will be deduced based on those two models.

4 ANALYSIS AND DISCUSSION

Analysis of this study will base on comparison and differences existing between two results obtained separate from same proposed model fitted into two different contexts in developing countries.

Objective One: To compare common factors existing in between two validated models.

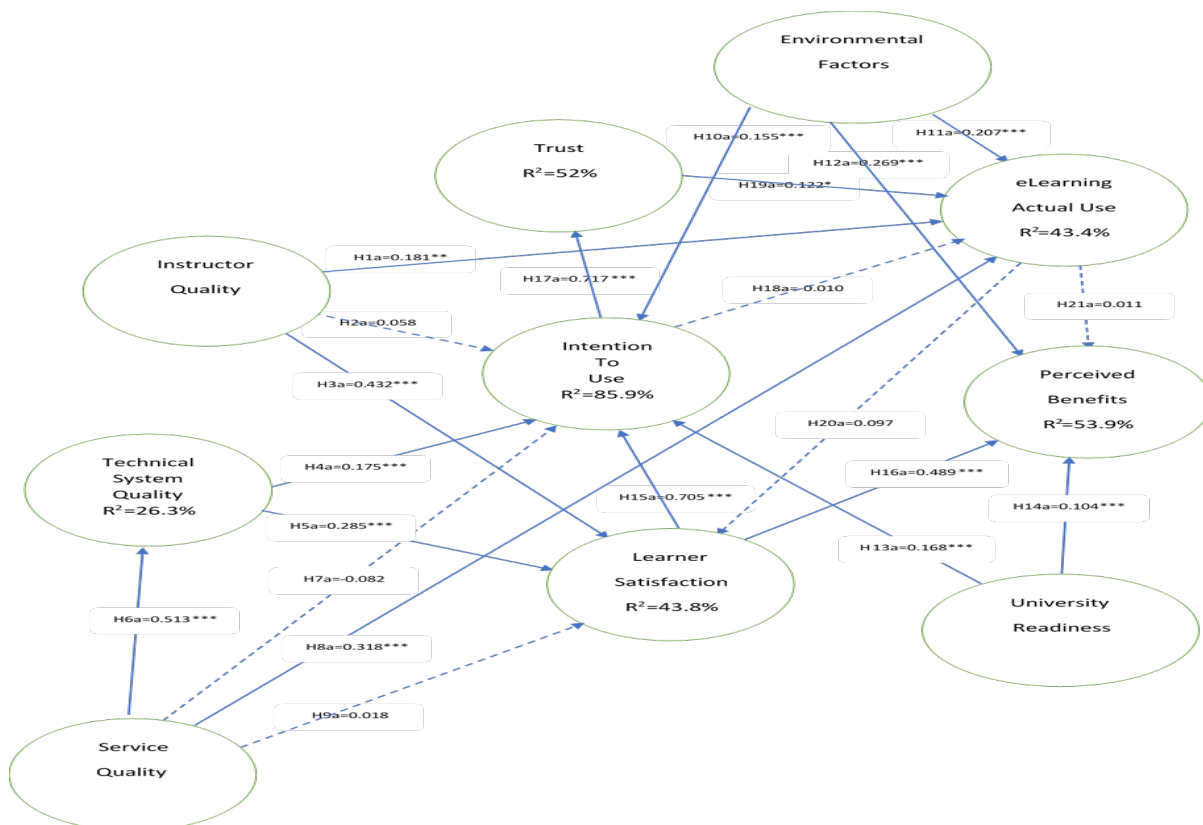


Figure 1 Results from SEM Analysis of data collected in Tanzania

Figure 1 shows that there are ten factors explaining acceptance, use and success of e-learning systems' in universities in Tanzania. These factors include Instructor Quality, Technical System Quality, Service Quality, Trust, Intention to Use, Learner Satisfaction, Environmental Factors, Elearning Actual Use, University Readiness and Perceived Benefits.

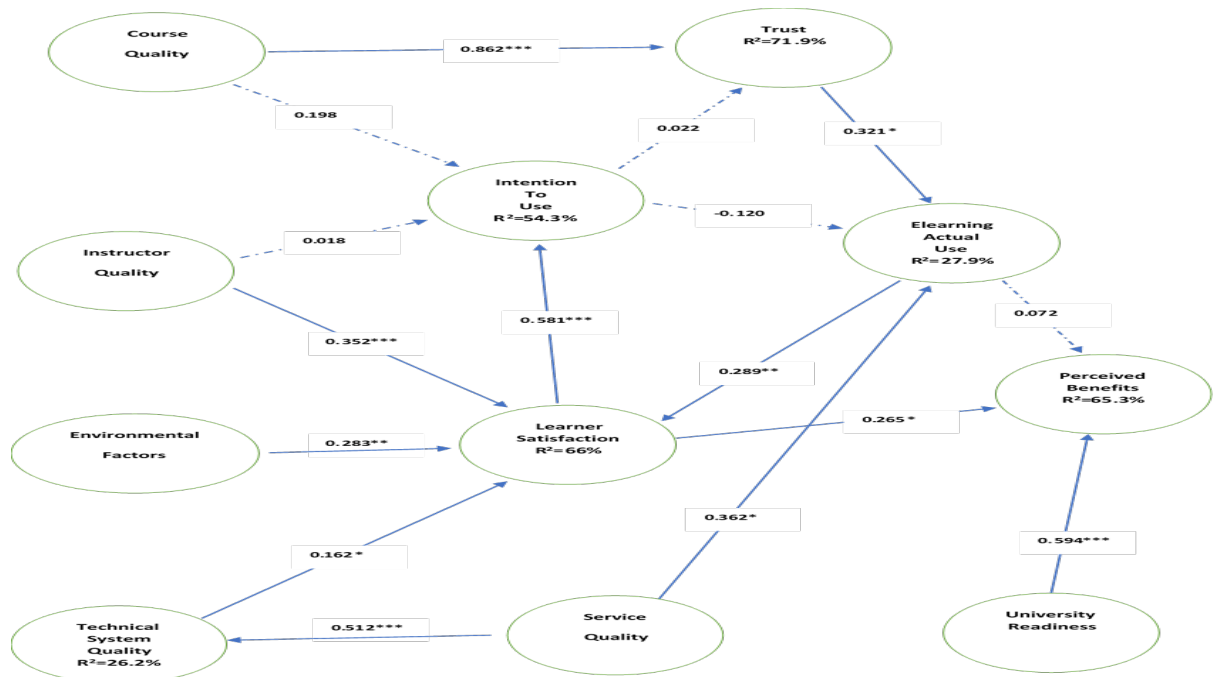


Figure 2 Results from SEM Analysis of data collected in Malaysia.

Figure 2 shows results of model which have been tested in Malaysia, it further indicates that eleven factors (Course Quality, Instructor Quality, Technical System Quality, Service Quality, Intention to Use, E-learning Actual Use, Learner Satisfaction, University Readiness, Environmental Factors, Perceived Benefits) are important for acceptance, use and success of e-learning systems in Malaysia’s universities. This result shows that one more factor is explained in Malaysia compared to Tanzania, this factor is *Course Quality*.

Objective two: To compare common hypotheses existing in between both validated models.

Table 1 Comparison between hypotheses of two developed models

S/N	Construct	Path	Construct	Regression estimate (B) of Tanzania model	Results of hypotheses for model tested in Tanzania	Results of hypotheses for model tested in Malaysia	Regression estimate (B) of Malaysia model
1	TSQ	<---	SQ	0.527	Significant	Significant	0.512
2	LS	<---	IQ	0.375	Significant	Significant	0.352
3	ITU	<---	TSQ	0.126	Significant	Not sig	0.012
4	LS	<---	TSQ	0.231	Significant	Significant	0.162
5	EAU	<---	LS	0.015	Not sig	Significant	0.289
6	EAU	<---	EF	0.259	Significant	Not sig	0.010
7	EAU	<---	SQ	0.366	Significant	Significant	0.362
8	EAU	<---	IQ	0.218	Significant	Not sig	0.015
9	ITU	<---	EF	0.125	Significant	Not sig	0.011
10	ITU	<---	UR	0.086	Significant	Not sig	0.010
11	PB	<---	LS	0.452	Significant	Significant	0.265
12	PB	<---	UR	0.104	Significant	Significant	0.594
13	PB	<---	EF	0.225	Significant	Not sig	0.050
14	T	<---	ITU	0.905	Significant	Not sig	0.022
15	EAU	<---	T	0.150	Significant	Significant	0.321
16	LS	<---	EF	0.070	Not sig	Significant	0.283
17	ITU	<---	LS	0.625	Significant	Significant	0.581
18	T	<---	CQ	-0.016	Not sig	Significant	0.862

Table 1 compare hypotheses from two developed models, the comparison takes on strength of each hypotheses and its significant. It shows that there are common hypotheses from two models and also there are overlapping of strengths of hypotheses.

Objective three: To deduce the unified model which will act effectively in both countries

Figure 3 shows the following that there are ten factors which are common for acceptance, use and success of e-learning systems in both Tanzania and Malaysia.

It further shows following hypotheses: -

- i. *Service Quality has positive and significant effect on Technical System Quality.*
This hypothesis is supported in both models. It implies that timely support, e-learning systems knowledge and incorporation of user inputs have significant impact to reliable, available and better interface of e-learning systems. *This is new finding to both Malaysia and Tanzania.*
- ii. *Learner Satisfaction has positive and significant effect on Intention to Use.*
This hypothesis is supported in both models. It implies that overall satisfaction of learner strongly impacts a behavioural use of e-learning systems by learner in both countries. This is consistent with results of Mohammadi (2015).
- iii. *University Readiness has positive and significant effect on Perceived Benefits.*
This hypothesis is supported in both models. This hypothesis implies that top management support, finance support and human resource support have significant and strong impact on benefits of using systems. This is consistent with previous study of Ramayah, Ahmad and Hong (2012).
- iv. *Instructor Quality has positive and significant effect on Learner Satisfaction.*
This hypothesis is supported in both models. It implies that response of instructor and his/her efficacy have medium impacts on learner overall satisfaction, it means that of all existing factors, instructor quality has higher impact to learner satisfaction than any other existing factors in unified model. This is consistent with previous study of Lwoga (2014).
- v. *Service Quality has positive and significant effect on Elearning Actual Use.*
This hypothesis is supported. This hypothesis means that system knowledge of support team, timely response and consideration of learner comments have significant impacts on prompting learner to be routine user than occasional user. This result is consistent with previous study of Alzahrani et al. (2017).
- vi. *Technical System Quality has positive and significant effect on Learner Satisfaction*
This hypothesis is supported. This hypothesis means that user interface of e-learning systems, its reliability and availability have low to medium impact to learner satisfaction on these two countries. This is consisting with study of Alzahrani et al. (2017).
- vii. *Trust has positive and significant effect on Elearning Actual Use.*
This hypothesis is supported. This hypothesis means that overall trust on e-learning systems by learner has low to medium impact to his/her actual use of e-learning systems. This result is consisting with that of Masa'deh et al. (2016) and Lin (2008).
- viii. *Environmental factors has positive and significant effect on Learner Satisfaction.*
This hypothesis is not supported in both models. This hypothesis does not show significant correlation in both two countries, this means either study from one country is insignificant. This need more research.
- ix. *Intention to Use has positive and significant effect on Trust.*
This hypothesis is not supported in both models. This hypothesis also does not have pair correlation with each other, in both two countries.
This need further research.
Intention to Use has a positive and significant effect on Elearning Actual Use.
This hypothesis has neither had significant impact to both countries. This need further study.

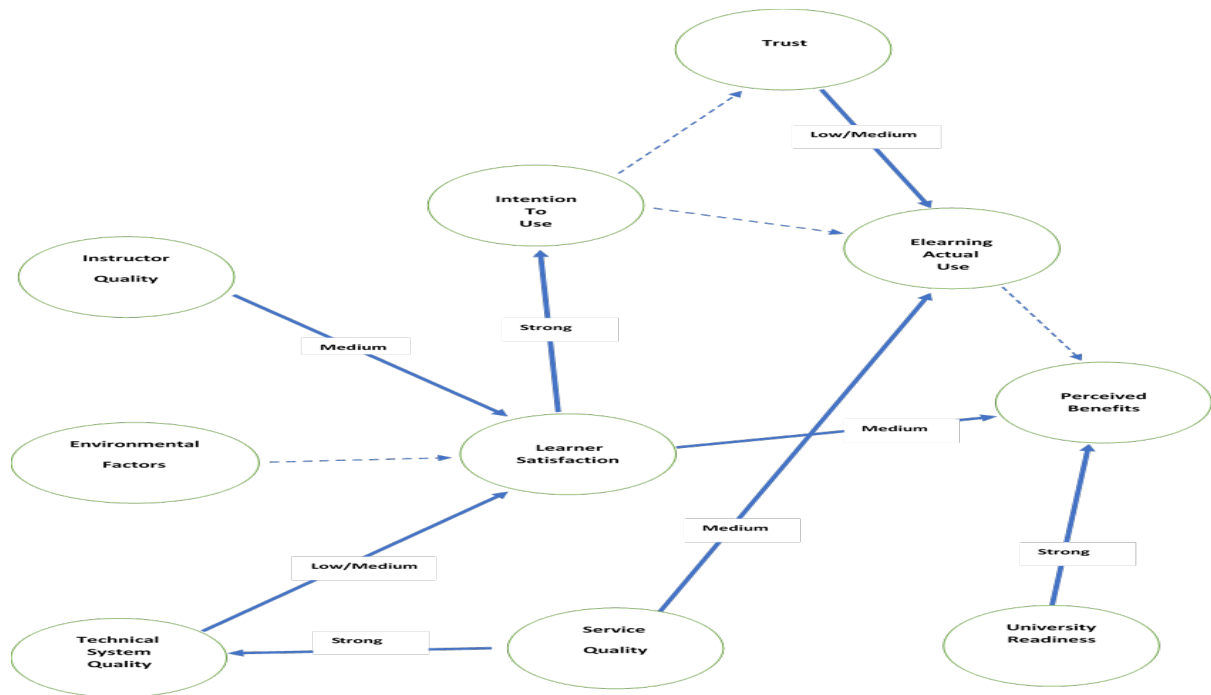


Figure 3 Unified model for Tanzania and Malaysia

5 CONLUSSION AND FUTURE STUDIES

A main purpose of this research is to compare and contrast acceptance, use and success of e-learning systems in Malaysia and Tanzania context, the results shows that there are considerable common factors affecting acceptance, use and success of e-learning systems between these two countries however there is slightly difference of factor particular on *course* (contents, design and delivery). It implies that Malaysia compared to Tanzania is better off in Quality of Course contents, design and delivery which is something Tanzania has to learn. Figure 3 presents a unified model for both of Malaysia and Tanzania.

It further shows that both learner in Malaysia and Tanzania are affected significantly with *Trust*, *environmental factors* (peer universities, national ICT policy, education institutions partners), *university readiness* (top management, budget allocated in e-learning implementations and human resources apart from technical staff).

The deduced model for acceptance, use and success of e-learning systems, can be tested in other developing countries either quantitatively or in a mixed research in a frame of Information Systems (IS) or e-learning systems.

Since a model in figure 3 is not closed therefore may be subject to changes whenever necessary to reflect changes of technology, culture and context.

Further research on Impacts of Intention to Use on Actual Use, Environmental Factors on Learner Satisfaction, Intention to Use on both Trust and Actual Use, and last Impact of Actual Use on Perceived Benefits.

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