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Explaining Electronic Learning Management Systems (ELMS) continued usage intentions among facilitators in Higher Education Institutions (HEIs) in Tanzania

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ABSTRACT

This study sought to explain ELMS continued usage intentions among HEIs in Tanzania. The study was guided by main research question, "What explains ELMS continued usage intentions among facilitators in HEIs in Tanzania?" The study used descriptive cross sectional design administered to 264 respondents drawn from five universities selected from two regions mainly Dar es Salaam and Morogoro. HEIs involved include the University of Dar es Salaam; Muhimbili University of Health and Allied Sciences; Hubert Kairuki Memorial University; Mzumbe Universty and Sokoine University of Agriculture. A five point Likert scale from strongly disagree to strongly agree perceptions was used. A regression analysis was done to measure the predictability of the hypothesized factors towards ELMS continued usage intentions. The study's findings revealed that ELMS continued usage intentions was positively and significantly influenced by three factors: "perceived importance", "perceived ease of use" and "organizational management support". "Facilitating conditions" though positive, it has no significant influence on ELMS continued usage intentions, thus it is not an affection factor. It was therefore accepted that perceived importance, perceived ease to use and organizational management support have power to predict ELMS continued usage intentions in the visited institutions. This study urges HEIs not to rely on donors/sponsors if ELMS usage is to be sustainable. Most of ELMS donor funded projects stopped just soon after projects reached their end, as opposed to those which are self initiated and supported by respective institutions.

Keywords: *Explaining; Electronic Learning Management Systems; ELMS; continued usage intentions; facilitators; Higher Education Institutions; HEIs; Tanzania*

INTRODUCTION

According to Ayub et al (2010) Electronic Learning Management System (ELMS) is referred to as a web based technology that assists in planning distribution and, monitoring and evaluation of a learning process and insisted that it must be incorporated in the education delivery. Alharbi & Drew (2014), refer ELMS as an e-learning platform/system which is made available to assist students and facilitators have access to online learning materials and services. As a web based, ELMS is considered by Ayub et al (2010) as Virtual Learning Environments (VLEs) which offers flexible education delivery between teachers and students in e-learning environments. The system has variety of features to allow provision of assignments to student including grading and other related activities. As such Higher Education Institutions (HEI) have widely adopted the technology and are using it in making controls; doing performance management, as a tool for assessment, managing study schedule and provision of learning contents. The ELMS is enabled by a number of technical issues that range from hardware servers, registrations, organization administration, space for storage, accessing and place for sharing materials supported in a number of formats such as HTML, MPEG, PDF, MS Office word etc. (Sife, Luoga, & Sanga, 2007). As such ELMS are of recently been acknowledged to support learning opportunities around the globe and it is a facility that provides means for education delivery and flexibility for HEIs (Alharbi & Drew, 2014; Ayub et al., 2010; Lwoga & Komba, 2015). It is then used by

students, academic facilitators, and administrators in trainings and management of online learning (Sife et al., 2007).

Evidences indicate that ELMS has turned a common application among HEIs over the globe, with differences remaining contextual and in terms of extent. For example, in the United States of America (USA) and the United Kingdom (UK) the ELM is currently used in universities as a more or less a requirement in academic educational knowledge delivery. Studies document that more than 90% of Universities and Colleges in the USA use the system and about 95% of Universities in the UK's HEIs have been using ELMS (Al-Busaidi & Al-Shihi, 2010). Already, a relatively great potential have been recorded in most developing countries including the Middle East (Mirza & Al-abdulkareem, 2011) and Africa (Lwoga & Komba, 2015; Raisamo & Mtebe, 2014). Although usage is still dawdling in developing countries, the system has recorded a great potential by 28.8% (Mirza & Al-abdulkareem, 2011) and has provided a solution to variety of issues in the educational deliverance (Al-Busaidi & Al-Shihi, 2010; Asiri, Mahmud, Abu, & Ayub, 2012; Mirza & Al-abdulkareem, 2011). A survey done by Gakio in 2006 from 27 countries in Africa, recorded that 54 HEIs had adopted various E-learning systems for academic delivery (Gakio, 2006). Obadara (2014) did a study at the University of Lagos on students' academic performance using the moodle LMS. In that study, it was revealed that using the LMS in teaching students have significant positive impacts on their academic performance. Later recommended that ELMS should be used in all universities in Nigeria and all features of the system should be used for the better education delivery and students' performance (Obadara, 2014).

In Tanzania, most of HEIs started implementing ICT enabled LMS in 1998 and have been investing in the technology with an attempt to enhance teaching activities and learning processes (Komba, 2009; Lwoga & Komba, 2015). The University of Dar es Salaam (UDSM) began using the Blackboard (Komba, 2009) which aimed at integrating the face to face learning with the online learning (Raphael & Mtebe, 2013). The system was later replaced with Open Source Moodle system in 2008 after experiencing the increasing in the annual licensing costs which was higher for the budget to cover. The use of the Moodle brought vibrant benefits to the University including the introduction of blended Learning programmes offered outside the UDSM Main Campus.Muhimbili University of Health and Allied Sciences (MUHAS) and Mzumbe University (MU) started to advance its ICT infrastructure purposely to improve the learning activities and other process in 2000 (Lwoga & Komba, 2015) while Sokoine University of Agriculture (SUA) is reported to have started implementing the ELMS in 2007 (Sife et al., 2007). At MUHAS a number of activities were carried including establishing students' academic record system, online library catalogue and later the University introduced the Moodle Learning management system in 2000s. Other universities in Tanzania followed. By the year 2011 about 80% of HEIs in Tanzania were using ELMS (Munguatosha, Muyinda, & Lubega, 2011).

However, although aspects related to acceptance and usage of technology for teaching and learning have been widely documented (Lwoga, 2014), issues explaining sustainability of usage are not clearly understood (Mtebe, 2014; Raisamo & Mtebe, 2014; Raphael & Mtebe, 2013) and/or undocumented. Despite the continued investments as already identified, studies document low continual ELMS usage among HEIs in Tanzania (Lwoga & Komba, 2015; Sife et al., 2007). Universities have been reported not to continue using ELMS just soon after some training on its usage. Very few courses if any are being run using ELMS and in most cases are run under funded projects. For example, in the university of Dar es Salaam, the programmes running using this system include: Postgraduate Diploma in Education (PGDE), Postgraduate Diploma in Engineering Management (PGDEM), and Master degree in Engineering Management (MEM) (Raphael & Mtebe, 2013). Despite of materials being uploaded on the system, facilitation remains conversional. Although there are few studies investigating and exploring ELMS continued usage among students (Adeyinka & Mutula, 2010; Lwoga, 2014; Raisamo & Mtebe, 2014), studies investigating on facilitators' ELMS continued usage are not existing. Lwoga & Komba, (2015),

consider that the use of LMS in HEIs must be taken on board by academic staff, administrators and students in ensuring education delivery with ICT facilitation. Studies (such as Eskilsson and Suorsa, 2014; Kagugu, 2011) continue to ponder that reasons for little usage among students are yet to be comprehensively explored. It is opine that, knowing the predictors for the continued usage of the system in Higher Learning Institutions (HLIs) is of paramount importance (Lwoga & Komba, 2015; Lwoga, 2014).Having the issues known, transformation is expected to result into increased learning gains both for the Universities, facilitators and for students in the creation and dissemination of knowledge by allowing for opportunities for all (Eskilsson & Suorsa, 2014). This research was formulated to examine the factors influencing continued ELMS usage intentions (intention to continue using the ELMS in long term) among facilitators in higher education institutions in Tanzania.

The main objective of this study is to examine factors that influence continued Electronic Learning Management System (ELMS) usage among Higher Education Institutions in Tanzania. Specifically the study sought:

i. To determine the influence of management support on continued Electronic Learning Management System usage in Higher Education Institutions
ii. To assess the influence of facilitating conditions on continued Electronic Learning Management System usage in Higher Education Institutions
iii. To determine the contribution of perceived importance on continuing Electronic Learning Management System usage among Higher Education Institutions
iv. To determine the influence of ease of use on continued Electronic Learning Management System usage among Higher Education Institutions

LITERATURE REVIEW

The literature review was done to both theories and empirical studies. Of the theories, the UTAUT is reviewed, while a thematic approach for empirical reviews was followed.

The Unified Theory of Acceptance and Use of Technology (UTAUT)

Invented by Venkatesh et al (2003), the Unified Theory of Acceptance and Use of Technology (UTAUT) Model is a result of convergence of eight prominent models. The converged models include, Theory of Reasoned Action (TRA), the Technology Acceptance Model (TAM), a Motivational Model (MM), the Theory of Planned Behavior (TPB), a model combining the Technology Acceptance Model and the Theory of Planned Behavior (TPB), a Model of Personal Computer Use (MPCU), Innovation Diffusion Theory (IDT), and Social Cognitive (SCT) Theory. The model has four main variables; the performance expectancy, effort expectance, social influence and the facilitating factors which determine the behavior intentions to use technology. Gender, age, experience and voluntariness of use acted as moderators of the impact on the four key constructs on usage intention and behavior (Venkatesh et. al., 2003). Its significant ability in explaining variance in usage intention by 70% makes UTAUT a strong model (Venkatesh et al., 2003). It has therefore, been used by various researchers in attempt to determining the factors that would be stressed on for the sustained use of technology in place. For example, used to assess instructors and students' intentions to use Open Educational Resources (OER) in HEIs and Mobile Learning acceptance in HEIs, Mtebe and Raisamo, (2014), the UTAUT model was very useful in predicting usage behavior with its four UTAUT constructs - performance expectance, effort expectance, social influence, and facilitating conditions being found significant determinant. The UTAUT model was also useful in the investigation of factors influencing acceptance and use of e-learning solutions in HEIs in East Africa and it was revealed powerful in determining the sustained system usage (Raisamo & Mtebe, 2014). Lwoga and Komba (2015), also found UTAUT to have significant impact in explaining students' sustained usage of the web

based learning management. Apart from variables like effort expectancy, performance expectancy, social influence, the model was extended to include self-efficacy to predict continued usage intentions (Lwoga & Komba, 2015). Accordingly, the model was chosen by this study to guide its course to explain continued usage intentions of ELMS among facilitators in HEIs.

Empirical Studies

Studies have been done on technology adoption and use context in HEIs in various countries as in the United States of America (USA), in the United Kingdom (Al-Busaidi & Al-Shihi, 2010) in the Middle and Far East (Fauzi, Ayub, & Shah, 2014; Mirza & Al-abdulkareem, 2011) also in Africa (Mtebe, 2014; Obadara, 2014) and Tanzania in particular (Komba, 2009; Lwoga & Komba, 2015; Raphael & Mtebe, 2013). The center of interest on various studies have been on the aspect of students' experiences, acceptance and use while in fact the use of LMS in HEIs is taken on board by academic staff, administrators and students in ensuring education delivery with ICT facilitation (Muries, 2016). The sustained usage of the system as Mtebe (2014) contended is that it reduces the challenges faced by educational sector in the African context and expected usage is recorded low regardless the ICT available (Mtebe, 2014) then a need for continued usage need to be comprehended.

A research conducted in Jordanian's HEIs in the Middle East has emphasized on the need for university managements to support academic staff by ensuring that the ICT infrastructure are in place in order to minimize the fear that may emanate from ELMS technology adoption hence improving staffs' work processes in delivering knowledge to learners (Al-Alak & Alnawas, 2011). Integration of learning environment with the ICT infrastructure and the assistance provision by teachers/ instructors are considered important in influencing students to use ELMS for collaborative learning (Fauzi et al., 2014). In his study held to academic and administrative staff from Open University of Tanzania (OUT) and the University of Dar Es Salaam (UDSM), on enabling factor towards e-learning adoption, Kambira, (2011), emphasized on improving e-learning skills of practitioners that would ensure quality of content and clear integration between pedagogy and ICT. Others were putting in place appropriate policies that would enhance institutionalization of e-learning policy (Kambira, 2011). Study's findings by Lwoga (2014) on examining factors that predict continual usage intention behaviors of web based Learning Management System among first year students of 2012/2013 at MUHAS, provided that designers and facilitators should ensure quality of information, system, service, while instructors should ensure that the learning process is appreciated to improve students' satisfaction a factor believed to lead to system's continued usage intentions (Lwoga, 2014). The study conducted at Mzumbe University by Lwoga and Komba (2015) in attempt to establish determinants for actual usage of web based Learning Management System and its continued usage, among students revealed that effort expectancy, performance expectancy, social influence and self efficacy were significant factors to predict systems continued usage intentions.

It can therefore be noted from the review that, although the use of ELMS in HEIs need to be taken on board in corporation between academic staff, administrators and students available studies are restricting themselves on students only with those on facilitators remaining inconclusive (Lwoga & Komba, 2015; Lwoga, 2014), a gap that this study was formulated to fill.

PROPOSED CONCEPTUAL MODEL

Conceptualizing from the review four main factors are featuring out including Organization Management Support (Al-Alak & Alnawas, 2011; Fauzi et al., 2014;), Perceived Importance (Lwoga, 2014), Facilitating Conditions (Kambira, (2011; Lwoga and Komba 2015) and Perceived Ease of Use (Al-Alak & Alnawas, 2011). A conceptual model presented in Figure 1, therefore has

four independent variables: Organization Management Support, Perceived Importance, Facilitating Conditions and Perceived Ease of Use that are postulated to influence ELMS Continued usage intentions. The constructs of the conceptual model, their definitions, respective indicators and the sources of information used are provided in the Table 1. The individual constructs are later explained in the section that follows.

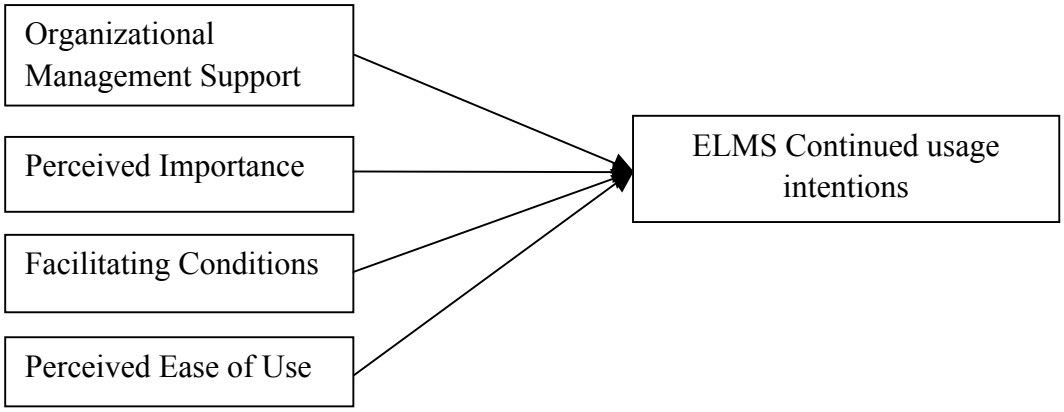

Figure 1: *Research Conceptual model*

The Model

THE conceptual model presented in Figure 1 has four important independent variables that predict continued usage intentions of E-learning management system including: organizational management support, the perceived importance, facilitating factors, Perceived Ease of Use and the continued usage intentions.

Organizational Management Support (OMS)

Organizational Management Support refers to the degree to which a person believes that the organizational and technical resources are available to support the use of ELMS (Al-Busaidi & Al-Shihi, 2010; Macharia & Nyakwende, 2010). The top management allocates organizational resources such as time, personnel, fund and equipments, thus have a great role in ensuring that ELMS continued usage intentions. Al-Busaidi and Al-Shishi (2010) contend that it is paramount to make end users updated in form of provision of workshops, provision of tutorials or seminars on using the ELMS in their daily work for their convenience and confidence. Mtebe (2015) and Macharia and Nyakwende (2010) consider the OMS as having positive impact on both students and faculty members in any institution on the use of ELMS (Mtebe, 2015). It has been also noted by Mtebe & Raisamo (2014) that this aspect predicts the adoption and continued usage of ELMS significantly. This study therefore had its hypothesis, H1: *OMS positively influences continued usage intentions of ELMS in HEIs*.

Perceived Importance (PI)

The term perceived importance refers to the degree to which the ELMS use will accrue benefits to users in performing various activities in HEIs. This construct is said to be the best predictor on the behavioral intention to use ELMS technology in HEI workplace (Raisamo & Mtebe, 2014). It falls on how a person believes that using ELMS would enable one to attain job benefits. Therefore the benefits increases the sustainability of use of the system as to facilitators or other users would find it useful in accomplishing activities like teaching quickly, flexible and later raise efficiency and

effectiveness (Mtebe & Raisamo, 2014; Venkatesh et al., 2003). This forms the second hypothesis, H2: *PI positively influences continued usage intentions of ELMS*

Table 1: *Summary of Constructs, definition, items and citations*

Construct	Definition	Items	Citation
Organizational Management Support	… the degree to which a person believes that the organizational and technical resources are available to support the use of ELMS	1-The institution's management has invested in a new technology aligned with teaching curriculum 2-The institution has a unit of instructional design consisting of specialist for ELMS technical assistance 3-The institution awards best users of ELMS 4-The institution's top management has generally supported the use of ELMS 5-Top management encourages to learn ELMS 6-The institution provides resources for employees to learn ELMS 7-The institution's top management usually help employees when face ELMS use problem 8- Resources necessary to use the ELSM are available	(Al-Alak & Alnawas, 2011; Al-Busaidi & Al-Shihi, 2010; Macharia & Nyakwende, 2010; Sife et al., 2007; Venkatesh et al., 2003)
Perceived Importance	…the degree to which an individual believes that using the system will assist to enhance in job performance	1-The ELMS is useful for teaching and learning 2-Using the system enables to accomplish tasks more quickly 3-Using the system increases productivity 4-Using ELMS increase chances of getting raise	(Al-Alak & Alnawas, 2011; Macharia & Nyakwende, 2010; Venkatesh et al., 2003)
Facilitating Conditions	…the degree to which an individual believes that an organizational and technical infrastructure exists to support use of the system.	1-There are incentives from the University/government/donor to enable sustainable usage of ELMS 2- There are subsidies provided by government/donors to lessen the cost of using ELMS 3-There are suitable policies and regulations to facilitate usage of ELMS	(Ghalandari, 2012; Venkatesh et al., 2003)
Perceived Ease of Use	…the degree of ease associated with the use of the system	1-Interaction with the ELMS is clear and understandable 2-It is easy to become skillful when using ELMS 3-I would find ELMS easy to use 4-Learning to use ELMS is easy	(Alharbi & Drew, 2014; Venkatesh & Davis, 2000; Venkatesh et al., 2003)
Continued usage intentions	…the belief that would continue using the system in long term	1- I intend to continue using ELMS in the next sessions 2-I plan to continue using ELMS in the next semester 3-I intend to continue using ELMS for knowledge gathering 4-I intend to continue using ELMS for knowledge creation 5- I intend to continue using ELMS for sharing knowledge 6- I predict that I would use ELMS in the coming academic year 7- I plan to continue using ELMS often to facilitate learning	(Alharbi & Drew, 2014; Lwoga & Komba, 2015; Venkatesh et al., 2003)

Source: Muries (2016)

Facilitating Conditions (FC)
According to Ghalandari (2012) the term facilitating factors refers to the degree to which an individual believes that an organization and technical infrastructure exists to support use of the system (Ghalandari, 2012). The term focuses on the resources and infrastructures available to fuel performance with the use of the intended system. These resources include institutional and the technical infrastructure that could be influential and support the use of ELMS (Ghalandari, 2012; Šumak, Heričko, & Pušnik, 2011). This brings this study into the third hypothesis that H3: *FC positively influences continued usage intentions of ELMS*

Perceived Ease of Use (PEU)
Perceived Ease of Use is the degree of ease associated with the use of technology (Venkatesh et al., 2003). It is also about workers' efforts expend to adopt the system, - ability to use little efforts to use the system. According to Alharbi & Drew (2014), where the technology is easy to use, the work load for users (facilitators; administrators; and personnel) to learn is reduced. The easiness of using a system could make facilitators or students in a HEI believe it and later would continue using it next time (Alharbi & Drew, 2014; Chuttur, 2009; Venkatesh et al., 2003). This brings this study into the fourth hypothesis, H4: *PEU positively influences continued usage intentions of ELMS*

Continued usage intention (CUI)
Continued usage intention (CUI) as this study's dependent variable refers to degree of long term usage of the system (Lwoga & Komba, 2015). A demonstrated results enhances user participation and ensured continued usage of ELMS (Lwoga & Komba, 2015. According to (Mtebe & Raisamo, 2014), the continued usage must guarantee benefits in providing improved e-learning environment. The UTAUT model has been used by various researchers in attempt to determining the factors that would be stressed on for the sustained use of technology in place. The intention is a dependent factor aiming at determining how it is influenced by the independent factors for that the ELMS to be used in teaching and learning.

METHODOLOGY

The study used descriptive cross sectional design, with structured questionnaires administered to 264, a response rate of 88 percent of 300 respondents that were targeted. The respondents were drawn from five HEIs selected from two regions mainly Dar es Salaam and Morogoro which are University of Dar es Salaam (UDSM); Muhimbili University of Health and Allied Sciences (MUHAS); Mzumbe Universty (MU); Sokoine University of Agriculture (SUA) and the Hubert Kairuki Memorial University (HKMU). The UDSM, MUHAS, MU, and SUA were drawn among the public universities, while HKMU is a private university. The selected HEIs ranks high in the duration they have been in operation a reason that favors implementation of selected strategic investments including use of ICT to improve their efficiency. Convenience and proximity reason to the HEIs is another reason as the data used was collected by the main author for writing his master's thesis. Kothari (2009) argues that, the approach for data collection method to be used is also dependent at times upon economic factors and convenience in its administration.

A five point Likert scale questionnaire from strongly disagree to strongly agree perception was used. Questionnaires were physically distributed and collected, among other reasons, to control and enhance the response rate including clarifying any ambiguity (Kothari, 2009). The choice of five points Likert scale method was preferred to enable respondents answering the questions can, supposedly better understand what option he/she should choose for his or her answer hence improving answers quality (Leung, 2011). Authors (Finstad, 2010 and Leung, 2011) further assert that, for a larger study (N>100) a five points Likert scale is preferable for better data distribution. Data was analyzed using SPSS version 19. Both convergent and construct validity was tested.

For reliability test, an Internal consistency to compute coefficient scores for Cronbach's Alpha was done. A coefficient of 0.84 was obtained indicating that the instrument was reliable enough (Nunnaly, 1978, Hair, et al, 2006; Tabachnick & Fiedll, 2007). A regression analysis was done to measure the predictability of the hypothesized factors towards ELMS continued usage intentions.

Descriptive analysis in terms of frequency, mean and standard deviation was done. A regression analysis was done, guided by a regression (prediction) equation established as follows: The regression equation of the best-fit line is given in the format $Y = \beta\ 0 + \beta i\ Xi + S.E$, where β 0 is the intercept and β is the slope of the line for the predicted linear relationship between Y(dependent variable) and X (Independent variable).

Xi= X1 + X2……Xn
βi= β_1+β2….. βn

If S.E=0 then $Y= \beta 0 + \beta 1\ X_1 + \beta 2\ X2 + \beta 3\ X3 + \beta 4\ X4$

Where
Y= ELMS Continued Usage Intentions,
X1= Organizational Management Support (OMS),
X2=Perceived Importance (PI)
X3= Facilitating Condition (FC), and
X4=Perceived Ease of Use (PEU).

Let B_1coefficient of X1, and B2 coefficient of X2 and so on. Letting Y be function of X1, X2, X3, X4, and substituting the coefficients, now the equation become $Y= B0+ B1\ X1+ B2\ X2 + B3\ X3 + B4\ X4$. Table 5 presents the overall regression analysis,

FINDINGS

Distributions of respondents basing HLIs surveyed

Analysis is based on the data collected from 264 respondents. Distribution of respondents is as shown in Table 2 that 25.4% were from UDSM, 24.2% were from MUHAS, 21.2% from SUA, 22.3% from MU, and 6.8% were from HKMU. The number depended on the number of questionnaires returned per institution till the analysis time. For example, despite having an introduction letter to the HKMU the researcher experienced a lot of difficulties in gaining access to respondents, a factor that caused such low response rate to the analysis stage. Yet, the responses received from all the HEIs were highly informative for the study.

Table 2: *Distribution of Respondents per HEIs*

Variables		**Percent**
Selected Institutions	University of Dar es Salaam (UDSM)	25.4
	Muhimbili University of Health of Health and Allied Sciences (MUHAS)	24.2
	Sokoine University of Agriculture (SUA)	21.2
	Mzumbe University (MU)	22.3
	Hubert Kairuki Memorial University (HKMU)	6.8
	Total	100.0

Demographic Information

The demographic variables including gender, age, experience, academic rank, and course work load were examined. From all participating institutions, a total of 264 respondents were involved. See Table 3.

Table 3: *Demographic Information of Respondents*

Item	Distribution	Institutes					Total
		UDSM	**MUHAS**	**SUA**	**MU**	**HKMU**	
Gender	Male	49 (18.6%)	38 (14.4%)	34 (12.9%)	35 (13.3%)	6 (2.3%)	162 (61.4%)
	Female	18 (6.8%)	26 (9.8%)	22 (8.3%)	24 (9.1%)	12 (4.5%)	102 (38.6%)
	Total	**67 (25.4%)**	**64 (24.2%)**	**56 (21.2%)**	**59 (22.3%)**	**18 (6.8%)**	**264 (100%)**
		X^2=10.101 df=4 p=0.039					
Age	<30 year	15 (5.7%)	15 (5.7%)	11 (4.2%)	13 (4.9%)	2 (0.8%)	56 (21.2%)
	30- 44 years	35 (13.3%)	24 (9.1%)	29 (11.0%)	27 (10.2%)	10 (3.8%)	125 (47.3%)
	≥45 years	17 (6.4%)	25 (9.5%)	16 (6.1%)	19 (7.2%)	6 (2.3%)	83 (31.4%)
	Total	**67 (25.4%)**	**64 (24.2%)**	**56 (21.2%)**	**59 (22.3%)**	**18 (6.8%)**	**264 (100%)**
		X^2=5.458 df=8 p=0.708					
Experienc e	1 year	22 (8.3%)	26 (9.8%)	25 (9.5%)	21 (8.0%)	6 (2.3%)	100 (37.9%)
	6-10 years	24 (9.1%)	14 (5.3%)	15 (5.7%)	23 (8.7%)	4 (1.5%)	80 (30.3%)
	>10 years	21 (8.0%)	24 (9.1%)	16 (6.1%)	15 (5.7%)	8 (3.0%)	84 (31.8%)
	Total	**67 (25.4%)**	**64 (24.2%)**	**56 (21.2%)**	**59 (22.3%)**	**18 (6.8%)**	**264 (100%)**
		X^2=8.19 df=8 p=0.415					
Academic Rank	Tutorial Assistant	13 (4.9%)	15 (5.7%)	13 (4.9%)	13 (4.9%)	10 (3.8%)	64 (24.2%)
	Assistant Lecturer	23 (8.7%)	16 (6.2%)	14 (5.3%)	25 (9.5%)	5 (1.9%)	83 (31.4%)
	Lecturer	16 (6.1%)	14 (5.3%)	13 (4.9%)	11 (4.2%)	2 (0.8%)	56 (21.2%)
	Senior Lecturer	10 (3.8%)	8 (3.0%)	9 (3.4%)	8 (3.0%)	0 (0.0%)	35 (13.3%)
	Associate professor	5 (1.9%)	4 (1.5%)	6 (2.3%)	2 (0.8%)	0 (0.0%)	17 (6.4%)
	Full professor	0 (0.0%)	7 (2.7%)	1 (0.4%)	0 (0.0%)	1(0.4%)	9 (3.4%)
	Total	**67 (25.4%)**	**64 (24.2%)**	**56 (21.2%)**	**59 (22.3%)**	**18 (6.8%)**	**264 (100%)**
		X^2=35.78 df=20 p=0.016					
Course Work load	One Course	17 (6.4%)	14 (5.3%)	14 (5.3%)	14 (5.3%)	6 (2.3%)	65 (24.6%)
	Two to three courses	34 (12.9%)	26 (9.8%)	29 (11.0%)	34 (12.9%)	5 (1.9%)	128 (48.5%)
	More than 3 courses	16 (6.1%)	24 (9.1%)	13 (4.9%)	11(4.2%)	7 (2.7%)	71 (26.9%)
	Total	**67 (25.4%)**	**64 (24.2%)**	**56 (21.2%)**	**59 (22.3%)**	**18 (6.8%)**	**264 (100%)**
		X^2=10.051 df=8 p=0.261					

Recall, this study involved 264 respondents from all participating institutions whose demographic variables and their respective distribution per each HEI is presented in Table 3. They include gender, age, experience, academic rank, and course work load. Though this study contains views of both male and female, the results show that number of male (61.4%) respondents was higher than that of female (38.6%) respondents. Age wise, majority (47.3%) of respondents were at age between 30-44, followed by those who were above 45 years-a group presented 31.4% of all respondents, and last were those of below 30 years old who presented 21.2% of all respondents. Respondents' work experiences were grouped as from 1-5 years who were 37.9% of all respondents while 30.3% were those with 6 – 10 years and 31.8% were above 10 years. Results further indicate that, more than half (30.3%+31.8%) of respondents had worked for more than 6 years in their respective institution, while 37.9% had worked for the period of 1-5 years. These shows that the study collected data from experienced individuals/trainers and therefore increasing chance for reliability. Career ranks of the respondents were distributed as follows: the general results from all the institutions indicate that 24.2% of respondents were tutorial assistance, 31.4%

were assistant lecturers, 21.2% were lecturers, 13.3% were senior lecturers, while 6.4% were associate professors and 3.4% were professors. This implies that the results are drawn from knowledgeable individuals, hopefully able to give objective answers.

Findings based on Study Objectives

Recall, both descriptive and regression analyses were done in order to describe as well as to test affection. Descriptive findings were presented using mean scores and standard deviation, while regression analysis results were presented based on coefficient of determination and probability values. In interpreting a five points Likert scale from 1-Strongly Disagree, 2-Disagree, 3-Undecided, 4-Agree, 5-Strongly Agree, descriptive results mean score of 1.00-1.80 was interpreted as "Strongly Disagree", 1.81-2.60 as "Disagree", 2.61-3.40 as "Undecided", while the mean scores of 3.41-4.20 and 4.21-5.00 were interpreted as "Agree" and "Strongly Agree" respectively. Table 4 details. As presented in Table 4, respondents agreed or disagreed with mean score of 3.97 for statements that tested ELMS continued Intentions as the study's dependent variable. The results revealed that respondent accepted to have high ELMS usage intentions and wish to continue using ELMS in the next sessions (mean 3.94) and semester (mean 3.93)., often to facilitate learning (mean 4.06), for sharing knowledge (mean 4.02), for knowledge gathering (mean 3.98), and for knowledge creation (mean 3.94). The overall mean was 3.97 indicating that respondents had high intention to continue using ELMS in their institutions.

As presented in Table 3, the overall mean for Organization management support was 3.43 with individual means given as follows; University management has invested in new technology aligned with teaching curriculum (3.71); University top management encourages to learn about ELMS (3.69); The University has a unit of instructional Design specialist for technical assistance (3.69); The University top management has generally supported the use of ELMS (3.57); The University top management help employees when face ELMS problems (3.45); The University provides resources for employees to learn ELMS (3.43); Best users of ELMS are awarded (2.52). Also the overall mean for facilitating conditions was 3.19, with individual means being as follows: Our institution supports us to acquire knowledge necessary for ELMS use (3.70); availability of necessary resource for ELMS usage (mean 3.48) are the strong facilitators in the ELMS usage. Other statements such as provision of incentives from institutions, government and donor (mean 2.99), presence of suitable policies and regulations provided to facilitate ELMS usage (mean 2.95) and provision of subsidies by the government and/or donor to lessen the cost of ELMS usage (mean 2.84). The overall mean score of 3.43 was obtained; indicating that though organizational management was considered important, it didn't feature out being provided thus was weakly supported by respondents implying that such facilitators are not being provided. The findings further indicate that respondents perceived ELMS as important and useful for their universities (mean 4.08), the use of ELMS enables to accomplish tasks more quickly (mean 4.05) and the fact that using ELMS increases productivity and efficiency in their universities (mean 3.84). But they had some reservations whether the use of ELMS could increase their chances to grow or being promoted (mean 2.82). The overall mean was 3.69 which indicate that respondents had high perception toward the importance of ELMS. The results also show that respondents had high perception that ELMS is easy to use (overall mean=3.65). Specifically, the notion was from the fact that it is ease to become skillful in using ELMS (mean3.76), ELMS is easy to use (mean 3.64), learning usage of ELMS is easy (mean 3.63), and interaction with ELMS is clear and understandable (mean 3.60).

Table 3: *Descriptive findings basing on study's Constructs*

Variables	Indicator Items	N	Mean	Std
ELMS Continued usage intentions	I plan to continue using ELMS often to facilitate learning	264	4.06	0.86
	I intend to continue using ELMS for sharing knowledge	264	4.02	0.85
	I intend to continue using ELMS for knowledge gathering	264	3.98	0.82
	I predict that I would use ELMS in the coming academic year	264	3.95	0.93
	I intend to continue using ELMS for knowledge creation	264	3.94	0.84
	I intend to continue using ELMS in the next sessions	264	3.94	0.87
	I plan to continue using ELMS in the next semester	264	3.93	0.88
	OVERALL MEAN		3.97	
Organization Management Support	University management has invested in new technology aligned with teaching curriculum	264	3.71	0.99
	University top management encourages to learn about ELMS	264	3.69	0.94
	The University has a unit of instructional Design specialist for technical assistance	264	3.69	1.06
	The University top management has generally supported the use of ELMS	264	3.57	0.99
	The University top management help employees when face ELMS problems	264	3.45	2.87
	The University provides resources for employees to learn ELMS	264	3.43	1.04
	Best users of ELMS are awarded	264	2.52	1.17
	OVERALL MEAN		3.43	
Facilitating Conditions	Our institution support us to acquire knowledge necessary for ELMS use	264	3.70	2.853
	Resources necessary for ELMS use are available	264	3.48	.986
	There are incentives from the institution or government or donor to enable suitable use of ELMS	264	2.99	1.103
	There are suitable policies and regulations provided to facilitate ELMS use	264	2.95	1.025
	There are subsidies provided by government or donor to lessen the cost of ELMS use	264	2.84	.995
	OVERALL MEAN		3.19	
Perceived Importance	The ELMS in our University is useful	264	4.08	.877
	ELMS use enables to accomplish tasks more quickly	264	4.05	.903
	Using ELMS increases productivity and efficiency of our University	264	3.84	1.034
	ELMS use increases chances of getting raise or promotion	264	2.82	1.237
	OVERALL MEAN		3.69	
Perceived ease of Use	It is ease to become skillful in using ELMS	264	3.76	2.01
	I would find ELMS easy to use	264	3.64	0.87
	To me learning ELMS use is easy	264	3.63	0.95
	Interaction with ELMS is clear and understandable	264	3.6	0.87
	OVERALL MEAN		3.65	

KMO and Bartlett's Test

To measure sampling adequacy (that is, to test if the sample was large enough to carry out factor analysis), the KMO test was used, while Bartlett's was used for hypothesis test that the sample was drawn from the population in which the correlation matrix was zero. According to Kaiser (1974), the KMO value is supposed to be greater than 0.5, and the p-value for the Bartlett's test should be less or equal to significance level (0.05) if factors are to be considered adequate for analysis. Results from this study revealed that KMO value was 0.887>0.5 while the p-value for Bartlett's test was 0.000<0.05 (Table 3). Hence, the model was suitable for the study dataset.

Table 4: *KMO and Bartlett's Test*

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.887
Bartlett's Test of Sphericity	Approx. Chi-Square	3298.538
	df	276
	Sig.	.000

Factor Analysis

The regression analysis process started by first running Factor analysis (FA) to assess the factor loading so as to extract maximum variance from the theorized items (see also Hair et al., 2010). Principal components analysis was used in order to enable the researcher to reduce the number of items while keeping as much original item variance as possible (Amer, 2012). The outcome was rotated using varimax rotation and a cut-off point of 0.40 was used for cross-loadings. Items that did not load strongly on the intended factors were dropped and were not considered in subsequent analysis (see also Hair et al., 2010). Table 5 summarizes.

Table 5: *Factor Analysis*

Rotated Component Matrix[a]	Component				
	1	2	3	4	5
CUI3: I intend to continue using ELMS for knowledge gathering	.881				
CUI5: I intend to continue using ELMS for sharing knowledge	.849				
CUI4: I intend to continue using ELMS for knowledge creation	.838				
CUI7: I plan to continue using ELMS often to facilitate learning	.834				
CUI2: I plan to continue using ELMS in the next semester	.779				
CUI1: I intend to continue using ELMS in the next sessions	.755				
CUI6: I predict that I would use ELMS in the coming academic year	.705				
OMS5: University top management encourages to learn about ELMS		.756			
OMS4: The University top management has generally supported the use of ELMS		.755			
OMS1:University management uses a new technology aligned with teaching curriculum		.738			
OMS2: The University has a unit of instructional Design specialist for technical assistance		.669			
OMS6: The University provides resources for employees to learn ELMS		.630			

OMS8: Resources necessary for ELMS use are available		.563			
FC2: There are subsidies provided by government /donor to lessen the cost of ELMS use			.885		
FC1: There are incentives from the government and/or donor to enable use of ELMS			.780		
FC3: There are suitable policies and regulations provided to facilitate ELMS use			.690		
PEU3: I would find ELMS easy to use				.725	
PEU4: To me learning ELMS use is easy				.699	
PEU1: Interaction with ELMS is clear and understandable				.650	
PEU2: It is ease to become skillful in using ELMS				.597	
PI3: Using ELMS increases productivity and efficiency of our University					.770
PI2:ELMS use enables to accomplish tasks more quickly					.721
PI1: The ELMS in our University is useful for teaching and learning					.683

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.
a. Rotation converged in 6 iterations.

THE EFFECT OF ORGANIZATION MANAGEMENT SUPPORT ON ELMS CONTINUED USAGE INTENTIONS

Regression Analysis of Hypothesized factors over Continued Usage Intentions

Overall regression results presented in Table 6, show that perceived importance (p=0.000), perceived ease to use (p=0.000) and organization management support (p=0.004) have significant influencing relationship to ELMS continued usage intentions. Therefore, it can be accepted that perceived importance, perceived ease to use and organization management support have power to predict ELMS continued usage intentions in the studied institutions. The variance explained (R-square) is 0.426 indicating a good prediction power level (see also Tabachnick and Fidell, 2007). But, facilitating conditions (p=0.475) though indicated positive influence on ELMS, do not significantly predict ELMS continued usage intentions.

Table 6: *Regression Analysis between independent variables and dependent variables*

Model		**Unstandardized Coefficients**		**Standardized Coefficients**	**t**	**Sig.**
		B	Std. Error	Beta		
1	(Constant)	.852	.233		3.657	.000
	Facilitating Condition	.031	.044	.037	.715	.475
	Organization Management Support	.181	.061	.164	2.942	.004
	Perceived Usefulness	.392	.051	.416	7.669	.000
	Perceived Easiness	.220	.044	.252	4.951	.000
	R=0.659 R Square= 0.435	Adj R Square= 0.426				

Therefore, the question for prediction continued ELMS usage intentions can be established as follows:

ELMSCUI = 1 ELMS = 0.852 + 0.181 OM + 0.392 PI + 0.220 PE

Where: ELMSCUI = ELMS continued usage intentions
OM = Organization Management Support,
PI= Perceived Importance,
PE= Perceived Ease to Use

The implication of the above regression equation is that it can be used in the construction of mathematical models for determining ELMS continued usage intentions in the university institutions.

DISCUSSION

The study aimed at examining factors that influence continued Electronic Learning Management System among Higher Learning Institutions in Tanzania. It can be recalled from the descriptive findings that there have been high ELMS usage intentions (mean 3.94; Std.0.86) which is along line with the fact that they intend to continue using the system. The study also found that Perceived Importance (p=0.000), Perceived Ease of Use (p=0.000), and organization management support (p=0.004), had significant influence to continued ELMS. From the study's findings it implies that emphasis should be kept on increasing skills for the users through learning use and increase interactions of using the system. In doing that, it would change their perception towards ELMS importance, and through frequently using it would confront perceived complexity that users' perception with the system. This is strongly supported by the statement from one participating institute where using ELSM had been asked to be mandatory.

Generally the perceived importance influences the continued ELMS usage intentions and was considered very useful and has potential to enable HEIs accomplished their businesses more quickly, hence increasing their productivity. The findings are in line to Abugabah et al (2009) findings who support that perceived importance is significant to continued system usage. The use of ELMS enables more tasks to be accomplished quickly and efficiently, an opportunity for responsible staff to utilize saved time for other issues that would in fact contribute to their academic growth and promotion. The study however found users' indifferent perception on continued ELMS for the sake of getting promoted. This might have been triggered by the fact that, whether using or not using ELMS has nothing to help the using individual in his/her growth or promotion. Probably it is high time for higher learning institutions to think of rewarding good ELMS users such that it contributes in their growth and promotion.

The study also revealed perception on ease of use of ELMS was significant in contributing to continued usage intentions. This can also be reflected from the study done by Mtebe (2015) who provided ease of use as a measure for systems usability and have direct influence on users' use of the ELMS (Mtebe, 2015). This go along with this study's results where users perceived that ease of use contributes to continued usage intentions of the system at R^2 =0.661. That is, where ELMS is perceived ease to use, then there is likeliness that potential users will have intention to continue using it.

Top management (p=0.004) has significant contribution in determining the future of an organization include continued usage intentions. This is from the decisions made which affects the whole organization which includes investments in available opportunities that fuels its businesses. The findings suggest that top organization management has much to play in continued ELMS usage intentions as it is responsible for allocation of resources such as people,

time, equipments (i.e. computers, stable internet services and power) and funds – the resources that fuels the system implementation and continual usage. The study has for example revealed that the management can influence decisions on investment in new technology and establishing unit of instructional design for technical assistance, which are paramount for continued usage intentions.

The study supports what Macharia & Nyakwende (2010) found, that Organization Top Management should be keen enough and have visionary leaders that are ready to play much roles in ensuring ELMS usage. This is in terms of investing in new technology which is within the armpits of the Tanzania's ICT Policy 2003 that calls for ICT use in business and learning for development. Studies (Amoako-Gyampah and Salam 2004 cited in Huang et al., 2011; Bhattacherjee and Hikmet, 2008; Lee and Kim, 2009) indicates that, close interdependence between management support and final success of IT implementations showed in previous IT studies indicates that supporting interventions from organizations could potentially enhance users' technology acceptance as well as utilization. Sife et al (2007) emphasizes that the support should also include the ownership of the system, funds to cutter the costs and having the technical supports for the improved learning and teaching environment (Sife et al., 2007).

Generally participating institutions have shown various issues on how they take on board the issue of ELMS. All have shown to have invested in the new technology that has capacity to handle the learning systems. Although their capabilities differ, it is in the armpits of each institute. It includes having a unit/department dedicated to handle e-learning matters of the institute. These are dedicated to handle all matters responsibly in making smooth operations of digital education. Top management of all the studied HEIs may influence all these to happen. Facilitating conditions was not statistically significant, thus it is not an affection factor. It was for example revealed that the e-learning is mostly supported by donors from abroad who finance in trainings/workshops and providing technical support for a while. The support is connected from universities abroad. This study is of opinion that, if ELMS are to be sustainably used and the potentials therein exploited, then universities have to continue thinking on how to sustainably fund the ELMS usage than depending on facilitating factors from externals such as governments or donors. This study opines that, although donors/sponsors may be interested in using the system their support is always not sustainable. This argument is backed up by the fact that, most Universities under study have been reported not to continue using ELMS just soon after funded projects reach their end. The opposite has been to those who perceive the ELMS important in enhancing their works, ease to use and supported by respective universities.

For example, from one participating institute, a person from the ICT commented that e-learning to them is on trial, still with 10 programs from which some of the courses/modules are taken on board. This respondent connoted,

> "*Few faculty are using the system though those who use it have the interest despite that they are not being rewarded*. *They use it voluntarily as there are no rules to force its usage for others*. *Strategies are being devised to ensure the use of the system though the university still uses the current available technology. We have records of everything that is conducted at the university. Facilitators voluntarily engage themselves. This means if there were enough enabling environment within the university, this interest should have been raised".*

The study asserts that the insistence from the top management including stating in the policy will improve the current status of e-learning. Studies (such as Lwoga & Komba 2015 , Sife e al., 2007; and Lwoga, 2014) emphasize on having sustainability plans through appropriate policies on continued updating, offering trainings, and rewarding, relating to ICT use for academic delivery. Regulations for handling ELMS and or ICT are paramount to any academic institution. Few

participating institution showed their current ICT regulations which is yet devised to include education delivering of knowledge. Few were revising the policies to make them available and enforce them. Munguatosha et al (2011) in the study conducted on establishing a model for adoption of social networked learning in HEIs, found policies are either deficient in taking e-learning on board despite the impact of ICT benefits has in daily businesses, though HEIs education delivery can be fueled by ICT facilities, this is also in line with what studies by Adeyinka & Mutula (2010), Lwoga (2012), and Lwoga & Komba (2015) document.

CONCLUSION AND IMPLICATIONS OF THE STUDY

Studies have already showed that ELMS have a lot of potential to improve education quality, increase work efficiency and improve productivity. A quest to understand what activates continued usage intentions was important this study sought to quench. In the Tanzanian context, the study revealed ELMS continued usage intentions was positively and significantly influenced by three factors: “perceived importance”, “perceived ease of use” and “organizational management support”., “Facilitating conditions” though positive, it has no significant influence on ELMS continued usage intentions, thus is not an affection factor. The study contends that top management has roles to fuel the ELMS continued usage intentions. This study urges HEIs not to rely on donors/sponsors and the governments for any sustainable ELMS usage, as most of donor funded projects have shown not to be sustainable with most funded institutions stopping using ELMS just soon after projects reach their end, as opposed to those which are self initiated and supported by respective institutions. Accordingly, top management support need to be effected through resource mobilization and allocation for ELMS usage including time, fund, people for user training. Inclusion of ICT policies into a bigger university policy is important a successful implementation. In later times it will increase the ELMS perceived importance and related perceived ease of use.

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