

Investigating The Relationship Linking Self Management Of Learning And M-Learning (SAAS Model) Adoption In Higher Learning Institutions: A Case Of Africa Nazarene University, Nairobi.

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Abstract:

The objective of the paper was to determine the relationship linking self-management of learning and students' behavioral intention to adopt and use M-learning (SaaS model) in Africa Nazarene University. The Extended Unified Theory of Acceptance and Use of Technology (UTAUT) model was used as the foundation theory of this paper, and the data was collected using questionnaires. The questionnaires were analyzed for correlation, significance and variance, to study M-learning (SaaS model) adoption and use based on self-management of learning. The results of the paper revealed that there is no positive relationship between self-management of learning with students' behavioral intention to adopt and use M-learning in Africa Nazarene University. The study recommends that, universities should integrate mobile learning (SaaS model) into their strategic plan in order to improve mobility in the learning activity as well as school and institutional wide strategies for mobile learning.

Keywords: Self-management of learning. Mobile learning (SaaS model). Adoption. Higher learning institution. Extended Unified Theory of Acceptance and Use of Technology.

1.0 Introduction

Cloud computing (SAAS) and M-learning are emerging technologies that are slowly embracing all possible sectors and educational institutions are gaining more benefits out of them. Cloud computing (SAAS) can provide several services that allows educational institutions to host learning resources in the cloud access them from anywhere and at any time as long as there is internet connection through mobile devices. Adopting the use of new technologies and finding optimal ways of utilizing their benefits is the most important element to maximizing educational institutions outcomes (Behrend et al. 2011).

Scientists have outlined mobile learning in the guise of acquiring knowledge across content and social communications, through various situations utilizing mobile gadgets (Crompton, 2013), acquiring knowledge using mobile devices (Toteja & Kumar, 2013), also a changing learning environment with the utilization of portable devices and palmtop in educational field (Keengwe & Bhargava, 2014), the upcoming stage of electronic learning (Alzaza & Yaakub; 2011). As reported by another group of researchers, mobile learning enable learners to collaborate, behave and communicate between themselves and their lectures using mobile devices (Al-Emran, Elsherif & Shaalan, 2016). In this context, Mobile devices that allow m-learning comprises smart phones, PDA, MP3 and MP4 devices, tablets and other handheld devices (Sarrab, 2014). Mobile devices are characterized in the literature by three major attributes: portability, context sensitivity and instant connectivity (Mac Callum, Jeffrey, & Kinshuk, 2014; Reyshav, Dunaway, & Kobayashi, 2015; Kearney, Burden, & Rai, 2015). A well implemented mobile learning application (software) is able to help and assist students in saving their cognitive load by filtering reachable information depending on all contextual factors (Sarrab, Elbasir, & Alnaeli, 2016; Chao, Lai, Chen, & Huang, 2013).

Despite the accelerated progress of mobile learning technology in learning environment, there are few studies addressing the relationship linking social influence (as a factor) and m-learning (SaaS model) adoption in higher learning institutions. Before adopting such technology, student's acceptance and perception concerning mobile learning has to be examined. For that reason, it is important to carry out an investigation study that establishes and indicates the relationship linking social influence and m-learning (SaaS model) adoption in higher learning institutions. Mobility is classified among the most relevant factors to consider in the development stage of M-learning. It allows the interaction of users even beyond the reach of traditional communication spaces (Yao-Ting, Kuo-En, & Tzu-Chien, 2016; Sarrab, Alzahrani, Alalwan, & Alfarraj, 2014).

Therefore, this study considered the extended Unified theory of acceptance and use of technology model (UTAUT) known as one of the most popular utilized theory in studying the adoption of new information systems and IT innovations. The extended UTAUT was applied in this study as a theoretical framework for university learners' acceptance and adoption of mobile learning and the behavior intention to use M-learning.

1.1 Background

Self-management of learning is the degree to which a person have the sensation that he or she is self-controller and capable to implicate him or herself in self-directed learning. (Wang et al., 2009).

Education in Kenya is a field that is gaining a constant growth due to the rapid growing of new technologies such as m-learning and similar form of technologies. These technologies are utilized for the improvement of the learning and teaching activities. Nowadays, each and every year we are observing new systems and softwares to support the needs of the educational institutions in the form of minimizing costs and expanding accessibility, mobility, flexibility and productivity. Not only the lecturers and students are benefiting but also, the employee efficiencies of the educational institutions are boosted, the managements looking for a revolution and change (Brian Westfall, 2015). M-learning is developed from e-learning for that reason it's important to accommodate the learning technique into new generation's experience and capabilities (Samsiah Bidin & Azidah, 2012).

At Africa Nazarene University the Institute of Open and Distance Learning (IODL) was initiated to assist and enable distance learning students to advance their studies without the needs of coming physically to the university to attend lectures on a full-time basis and therefore facilitating e-learning activities within Africa Nazarene University environment. The Africa Nazarene University IODL has approved the utilization of CAMS (an academic management system) as well as Moodle (an e-learning management platform configured for Africa Nazarene University as "ENAZ") to facilitate distance students to enroll and link up with their respective lecturers for discussions, online classes and completion of continuous assessment processes online. From what is stated above it is clearly noticed that there is no currently yet the utilization of any specific mobile learning application technology at Africa Nazarene University (Ooko, M. & Mays, T. 2015).

1.2 Problem statement

Currently in educational field, there is limited documentation and research concerning the relationship linking Self-Management of Learning (as a factor) and student's acceptance of m-learning (SaaS model) in universities. In addition, higher educational institutions, have a deficiency of available resources for all mobile learning users on how to adopt, implement and maintain mobile learning in higher educational institutions (Cherian & Williams, 2008; Litchfield et al., 2007).

Furthermore, the capability and ability of mobile devices has not yet been utilize at it maximum level in higher educational institutions. Therefore, this study establishes and indicates the relationship linking effort expectancy (as a factor) and student's acceptance of m-learning (SaaS model) in higher educational institutions. Establishing that relationship will enable higher educational institutions to adjust the educators' and learners' requirements with the university strategic plans, by making a significant action of integrating mobile learning technology in lecturing and learning activities and also improve better policy decisions of universities to facilitate their students and lectures in the learning process.

1.3 Purpose of study

The purpose of this research was to provide a clear understanding of how mobile learning (SaaS model) can be adopted and deployed in higher learning institutions, particularly in Africa Nazarene University.

1.4 Objective of the study

1. To analyze the relationship linking self-management of learning and students' behavioral intention to adopt and use M-learning (SaaS model) in Africa Nazarene University.

1.5 Research question

1. What is the relationship linking self-management of learning and students' behavioral intention to adopt and use M-learning (SaaS model) in Africa Nazarene University?

1.6 Hypothesis (null)

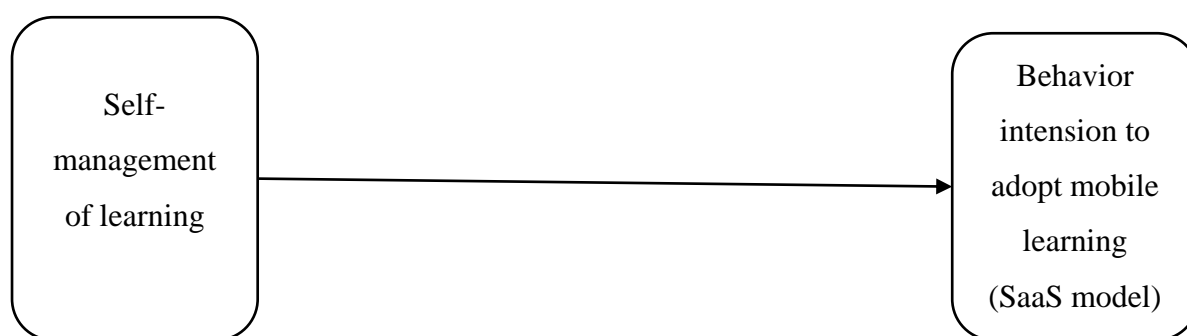
H₀1: Self-management of learning has a positive impact on learners' behavioral intention to adopt and use M-learning (SaaS model) in higher learning institutions, particularly in Africa Nazarene University.

1.7 Scope of the Study

According to Morse (2000), the scope of the study explains what the researcher covered in the study, it outlined the criteria of the study which included the processes involved, period of the study and the research interest.

This research was looking at the relationship linking self-management of learning and students' behavioral intention to adopt and use of M-learning technology in higher learning institution, case study of Africa Nazarene University, Nairobi Kenya in the aim of improving the standards of the learning and teaching process at the university level by facilitating the access of educational resources from any place and any time through mobile devices using a specific mobile (SaaS model) application. In addition, the study was looking at how the integration of M-learning technology in education sector can be successfully adopted by Kenyan high educational institutions, especially at Africa Nazarene University.

1.14 Conceptual Framework



2.0 Literature review:

2.1 Applicable Theoretical Models Review:

2.1.1 Extended UTAUT by Wang, Y. S., Wu, M. C., and Wang, H. Y. (2009):

A number of theoretical models have been proposed to facilitate the understanding of factors impacting the acceptance of information technologies, theoretical models such as TAM: Technology Acceptance Model, UTAUT: Unified Theory of Acceptance and the Use of Technology Model and the extended UTAUT Model which gives the major constructs' comprehension of the research (Wang, Y. S., Wu, M. C., and Wang, H. Y., 2009).

The initial Unified Theory of Acceptance and Use of Technology theoretical model was extended by Wang, Y. S., Wu, M.-C., & Wang, H.-Y. (2009) in the aim to carry out a study on how to obtain constructs that have an effect on the acceptance and adoption of mobile learning in Taiwan. Wang, Wu and Wang have integrated Self-management of learning (SML) in their study from the initial UTAUT theoretical model. Gender and age was moderating factors in the aim to influence the behavior intention to adopt and deploy M-learning.

In the suggested framework of this study, moderating variables such as gender and age was not included. In addition, considering that mobile learning (SaaS model) was not yet adopted in Africa Nazarene University, behavioral intention to adopt mobile learning was used as dependent variable and Self-management of learning as independent variable in this research.

2.2 Review of the objective:

2.2.1 Self-management of learning

Wang et al. (2009) specified the need of managing or directing autodidactic activities in source-oriented flexible learning as well as distance learning context. In addition, (Ravenscroft, 2000; Sharples, 2005) (as cited in Donaldson, 2011) claimed that, student independence in learning activities, help them in exploring as well as conducting experimentations, also assist them in questioning as well as being involved in two-way reasoning in order to produce a productive learning. Furthermore, Smith, Murphy & Mahoney, (2003) (as cited in Wang et al., 2009) argued that, self-management of learning is the extent to which a person have the sensation that he or she is self-controller and capable to implicate him or herself in self-directed learning.

In the same perceptive, McFarlenne et al (2007) (as cited in Liu, n.d.) declared that the independence and the augmentation of personalization in learning rise up chances of the acceptance condition for self-directed learning with regard to mobile learning. This independence in learning allow improvement in critical thinking capabilities, identify learning requirement as well as

allocating resources (Liu, Han, & Li, 2001; McVay, 2001) (as cited in Wang et al., 2009). Therefore, self-management of learning is relevant to be studied in this research.

2.2.1 Behavioral Intention

According to (Ajzen, 1991), the behaving or behavioral intention is described as the influential factor that influence the action and identify clearly the attention and effort that individuals express to perform a given action. The concept of user intention is described as evaluation instrument to measure the intention of users to act behavior and also lead to an actual behavior (Ajzen & Fishbein, 1975). Furthermore, Chau & Hu (2002) described, the behavioral intention as an act that predict and anticipate the future of executing an action like the intention to deploy a new system.

Hill et al. (1987) and De Sanctis (1983) (as cited in Garry et al., 2011) stated that behavioral intention predict the user behavior. In addition, Dillon and Morris (1996), described behavioral intention as the degree of willingness of a team of users to make the use of ICT to accomplish their jobs. Although, willingness is calculated depending on the real utilization of ICT or the intention (Martocchio, 2005).

The concept behavioral intention has been used in several researches towards the adoption or acceptance of a new system (Wang et al., 2009; Gunawardana and Ekanayaka, 2009; Lee, 2006; Keshtgary & Khajehpour, 2011, Venkatesh & Zhang, 2010).

2.3 Software-as-a-Service (SaaS)

Cloud service models are generally classified in three predominant services (Software-as-a-Service, Infrastructure-as-a-Service and Platform-as-a-Service). Each of these three cloud service models is considered as a layer in the Cloud. SaaS on itself is a software transportation method that gives the possibility to the consumers to access the software hosted on a cloud with it all functionalities, SaaS computer programs are designed using the new and current web technologies, well established to be executed on Internet. Additionally, SaaS consumer doesn't have to mind concerning the installation, maintenance, upgrade and support of the application software, preferably those responsibilities are taken in charge by the SaaS provider. The most outstanding examples of SaaS providers are, Zoho Suit, Apple's Mobile Me, Salesforce CRM, Google Apps, etc (c-sharp corner, retrieved at July 1, 2012). The most prominent examples of SaaS are learning instruments (like simulations, LMS, and so on), ERP, CRM, HRM, as well as creative instruments (such as power point, excel, word processing, and so on), social network, survey, blogging, emails, information/knowledge sharing (such as wikis), collaboration, etc. (Luyi Li, Yanlin Zheng; Fanglin Zheng; Shaochun Zhong; 2009), (cited in Cisco Networking Academy, 2012).

In accordance with c-sharp corner (2012), Consumers of SaaS based on the service given, like for business, for education and so on, these SaaS consumers can accomplish their required task by the use of the above cited examples).

SaaS has various typical features, number one: SaaS is able to be accessed everywhere in the world, number two: every user have the same version of software, number three: SaaS patch management and updates occurs automatically, number four collaboration is very easy, lastly SaaS management is very easy (Mohammed Alhamad, Tharam Dillon and Elizabeth Chang, 2010).

3.0 Research design and methodology

3.1 Research Design

This study used a mixed design method. It consisted of both descriptive and quantitative element. Because this study was descriptive in nature, the descriptive research method has been used to examine the main survey data, to find out how Self-management of learning is affecting student's acceptance and adoption of M-learning in Africa Nazarene University, check out the correlations between the variables, and compare uniformities and dissimilarities across distance learners' groups depending on gender and age. The quantitative element was as well used, therefore, the study was required to collect the appropriate data from a number of target population and measure how distance learners feel or think in a specific way regarding to M-learning adoption in Africa Nazarene University.

3.2 Research Site, target population, sample procedure and sample size

This study was carried out at Africa Nazarene University (ANU) in Nairobi, Kenya. In this study, the target population was comprised of 609 distance learning students from Africa Nazarene University (ANU). These figures was obtained from the registrar office, in the admission record of ANU (May, 2017). According to Paul (2008), a group of people that the researcher meant to generalize and draw a conclusion on is described as the target population. The simple size of this study was constituted of Two hundred forty one distance learning students from Africa Nazarene University, selected through Slovincs formula: $n = N / (1 + (N * e^2))$; Where: n = number of samples, N = total population, e = margin error is in between ± 0.05 of the population, 95% confidence (Blaxter et al.2006). Therefore $n = 609 / (1 + (609 * 0.05^2)) = 241$ students. The Population is described as all essential features (people, things and events) that fulfil the sample size for addition in a research (Burns and Grove, 1995:779).

3.2 Data collection measures, processing and analysis

Questionnaires were utilized as the main instruments for data collection. In this study, the questionnaire was developed to contain multiple choice and self-administered questions (closed and some few open ended questions) for the pilot study and the main survey. There was 2 sections in the questionnaire. The first section contained demographic and personal information concerning M-learning, the second section contained questions that concern the effect of Performance Expectancy on student's acceptance and adoption of M-learning in Africa Nazarene University designed to collect data in accordance with the research objectives. According to Hair, Bush & David (2006), Self-administered questionnaire is a data collection method where individuals who replies to the questionnaire are able to understand and respond to the questionnaire by their own without any intermediary questioner.

An instrument which gives trustworthy and dependable results is considered reliable (Saunders et al. 2007). The Cronbach's Alpha test was used to test the reliability of the research instrument ($\alpha = 0.848$), to confirm that they concurred with study objectives (Bell 2005). Responses from the pilot study were analyzed for accuracy of meaning and objectivity. An instrument which measures accurately what the researchers expect to measure is valid. A pilot survey was used to test instruments against criterion and content validity benchmarks. There was a need to test the content validity of the research instruments as this ascertained that the items produced the relevant responses from the sample (Mugenda and Mugenda 2003). Through the utilization of the Statistical Program for Social Science (SPSS 24), multiple regression analysis was used in the inferential analysis to determine the first hypothesis and the effect of performance expectancy on the learners' intention to use M-learning.

4.0 Research results and analysis

A total of 241 questionnaires were administered to the distance learning students from Africa Nazarene University. The questionnaires that were received were 196 questionnaires and were successfully filled, returned and taken as a sample. This gave a response rate of 81.3%.

4.1 Demographic and personal information

By analyzing the students' personal/demographic data, results indicated that most of the respondents' (70.4%) were aged above 26, 18.9% were aged between 22-26, 10.2% were aged between 18-22 while only 0.5 were aged below 18. This is an implication that most of the distance learning students from Africa Nazarene University were aged above 26 years. In addition, results indicated that respondents who were undergraduate were represented by 76%, respondents who were postgraduate were 20.4%, those who were undertaking diploma were represented with 2.6%, while those who were Graduate and PHD accounted with 0.5% respectively. This is an indication that majority of the distance learning students from Africa Nazarene University were undertaking undergraduate courses. Also the results deduced that majority of the respondents who participated in the study were female who accounted for 53.6% and male accounted for 46.4%. This indicates that both genders were equally represented. Furthermore, the results indicated that majority of the distance learning students (65.3%) from Africa Nazarene University had smart phone having connectivity ability and computing capability. Students were also asked to indicate whether they had ever used any mobile devices for teaching or learning purpose before. The results indicated that majority of the students (76.5%) agreed that had ever used any mobile devices for teaching or learning purpose before while 23.5% had never used any mobile devices for teaching or learning purpose before. In addition, Students were asked to indicate whether they have heard about M-Learning (Mobile Learning) before. The results deduced that majority of the students (59.7%) agreed that they have heard about M-Learning (Mobile Learning) before while 40.3% have never heard about M-Learning (Mobile Learning) before. Corning the usage of mobile learning application in studies, students were asked to indicate whether they have used any mobile learning application in their studies. The results were indicated majority of the students (67.3%) indicated that they have not used mobile learning application in their studies while 32.7% indicated that they have used mobile learning application in their studies. About the general view point of mobile Learning, respondents were kindly asked to describe their general view point of mobile Learning (Learning through a mobile app). Depending on the research results, it is clear that majority of the respondents (88.8%) felt that mobile Learning (Learning through a mobile app) was suitable idea and they would like to use it, 8.2% felt that it was suitable idea but they would not like to use it while only 2.9% felt that it's not a suitable idea. This implies that that mobile Learning was suitable idea and students would like to use it.

4.2 Analysis of the Objective

4.2.1 Self-Management of Learning (SML)

Finally, the objective of the study sought to establish the relationship linking self-management of learning and M-learning adoption in Africa Nazarene University. The status of this variable was rated on a 5 point Likert scale ranging from; Completely disagree (1), Disagree (2), Neither agree or disagree (3), Agree (4), Completely agree (5). The study findings are as revealed in Table 1 below:

Table 1: Self-Management of Learning (SML)

	Mean	Std. Dev
When it comes to studying and learning, I am a self-disciplined learner	4.081633	0.962619
I would find using mobile learning(Learning through a mobile app) gives me more flexibility in choosing what I want to learn and controlling my learning process	3.836735	1.049482
I would find using mobile learning(Learning through a mobile app) supports me in organizing my schedules effectively, study time and complete assignments on time	3.928571	0.958096
I am self-disciplined in my studies and find it easy to set aside homework and reading time using mobile learning application	3.780612	1.051413
In my studies, I would find using mobile learning (Learning through a mobile app) supports me to have a high degree of initiative and set goals	3.774359	0.925224

Source: (Author, 2017)

According to the study findings, the respondents completely agreed that when it comes to studying and learning, they are self-disciplined learner (mean= 4.081633), they would find using mobile learning application supports them in organizing their schedules effectively, study time and complete assignments on time (mean= 3.928571), and that they would find using M-learning application gives them more flexibility in choosing what they want to learn and controlling their learning process (mean= 3.836735). Further, respondents agreed that they are self-disciplined in their studies and find it easy to set aside homework and reading time using mobile learning application (mean= 3.780612), and that In their studies, they would find using mobile learning application supports them to have a high degree of initiative and set goals (mean= 3.774359). This is an indication that when it comes to studying and learning, students are self-disciplined learner, they would find using mobile learning application supports them in organizing their schedules effectively, study time and complete assignments on time, and that they would find using M-learning application gives them more flexibility in choosing what they want to learn and controlling their learning process.

4.2.2 Behavior Intention (BI)

The study sought to establish the Behavior Intention (BI) of using mobile learning application. The status of this variable was rated on a 5 point Likert scale ranging from; Completely disagree (1), Disagree (2), Neither agree or disagree (3), Agree (4), Completely agree (5).

Table 2: Behavior Intention (BI)

	Mean	Std. Dev
I'm planning to use mobile learning (Learning through a mobile app) in my academic life	3.846939	0.980341
I express the outcome in advance that I will use mobile learning (Learning through a mobile app) more frequently	3.785714	0.941902
I intend to increase my use of mobile services in the future	4.091837	0.895421
I will enjoy using a mobile learning application in my studies	4.005102	0.936428
I would recommend other distance learners to use mobile learning(Learning through a mobile app)	4.096939	0.892011

Source: (Author, 2017)

According to the study findings, the respondents completely agreed that they would recommend other distance learners to use mobile learning application (mean= 4.096939), they intend to increase their use of mobile services in the future (mean= 4.091837), and that they will enjoy using a mobile learning application in their studies (mean= 4.005102). Also, respondents agreed that they are planning to use mobile learning application in their academic life (mean= 3.846939), and that they express the outcome in advance that they will use mobile learning application more frequently (mean= 3.785714). This portrays that the students would recommend other distance learners to use mobile learning application they intend to increase their use of mobile services in the future, and that they will enjoy using a mobile learning application in their studies.

4.3 Multiple Regression (Major effect):

Multiple Regression Analysis involves the prediction of an unknown value of a variable, through two or more known variables and analyses the linear relationship between a dependent and two or more independent variables. In order to assess the strength & nature of relationship between variables and statistical significance of each coefficient, regression analysis has been carried out.

Table 3: Co-Efficient Determination

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	.080	.189		.423	.672
self-management of learning	.366	.058	.374	6.272	.061

Source: (Author data, 2017)

From Table 3, the p-value for social influence is < 0.061 . As the p value is < 0.061 which is greater than $\alpha = 0.05$, hence, we reject the null hypothesis and accept the alternative hypothesis and thus self-management of learning has no positive impact on learner's behavioral intention to adopt and deploy mobile learning in higher learning institutions, particularly in Africa Nazarene University.

4.4 Hypothesis

4.4.1 Significance Level of Variables

In order to test the hypothesis of the study, significance level of variables was conducted and the findings are as shown in Table 4: The figures was obtained from the regression analysis in the table 3.

Table 4: Significance Level of Variables

Hypothesis	Statement	p-Value	Status of acceptance of null hypothesis
H ₀₁	Self-management has a positive impact on learner's behavioral intention to adopt and use mobile learning in higher learning institutions, particularly in Africa Nazarene University.	.061	Reject

Source: (Author data, 2017)

H₀₁: Self-management has a positive impact on learner's behavioral intention to adopt and use mobile learning in higher learning institutions, particularly in Africa Nazarene University.

From Table 4, the p-value for effort expectancy is $> .061$. As the p value is $> .061$ which is greater than $\alpha=0.05$, hence, we reject the null hypothesis and accept alternative hypothesis and thus self-management has no positive influence on learners' behavioral intention to adopt and use mobile learning in higher learning institutions, particularly in Africa Nazarene University.

4.5 Summary of Findings

The findings from Multiple Regression shown that there is no positive relationship between self-management of learning with students' behavioral intention to adopt M-learning in Africa Nazarene University. In addition, the hypothesis of the study is rejected and has no positive impact on learner's behavioral intention to adopt mobile learning in higher learning institutions, particularly in Africa Nazarene University; because it p-values is greater than $\alpha = 0.05$.

5.0 Discussions

The research question of the study wanted to know the relationship linking self-management of learning and students' behavioral intention to adopt and use M-learning (SaaS model) in Africa Nazarene University. Based on the correlation and regression results, the study revealed no positive linkage between self-management and M-learning adoption in higher educational institutions in Africa Nazarene University. The p-value for effort expectancy is $> .061$. As the p value is $> .061$ which is greater than $\alpha=0.05$, hence, we reject the null hypothesis and accept alternative hypothesis and thus self-management of learning have no positive influence on learners' behavioral intention to utilize M-learning in higher learning institutions, particularly in Africa

Nazarene University. Wang et al. (2009) specified the need of managing or directing autodidactic activities in source-oriented flexible learning as well as distance learning context. In addition, (Ravenscroft, 2000; Sharples, 2003) (as cited in Donaldson, 2011) claimed that, student independence in learning activities, help them in exploring as well as conducting experimentations, also assist them in questioning as well as being involved in two-way reasoning in order to produce a productive learning. Furthermore, Smith, Murphy & Mahoney, (2003) (as cited in Wang et al., 2009) argued that, self-management of learning is the extent to which a person have the sensation that he or she is self-controller and capable to implicate him or herself in self-directed learning.

5.1 Conclusion

The study concludes that the students would find mobile learning application useful for their studies, and that they would find using M-learning application enabling them to accomplish learning tasks and activities more quickly. Also, the study concludes that the students would find M-learning application easy and flexible to use and that it would be easy for them to become skillful at using a mobile learning application. Further, the study concludes that the students would use M-learning application if their lectures have been helpful in the use of M-learning and that they would like to use mobile learning application if their lecturers encourage the use of it.

The study also concludes that the studied factor self-management of learning has no positive impact on students' behavioral intention to adopt and use M-learning in Africa Nazarene University.

5.2 Recommendations

The University should integrate mobile learning (SaaS model) into the university strategic plan in order to improve mobility and flexibility in the learning activity, improve the institutional leadership as well as school and institutional wide strategies for mobile learning (SaaS model). This should be led by the top management that includes the Vice Chancellor and the Deputy Vice Chancellor (Academic Affairs). Integration of M-learning in the university strategic plan will ensure focus on M-learning implementation.

The section in charge of M-learning at the higher learning institution, should organize a sensitization workshop for top management. This will enable the top management to improve management support for M-learning through training of staff, provision of incentives, time off to develop modules, help desk support and ICT support. This will ensure improved management support for mobile Learning and therefore adoption.

The ICT infrastructure should be improved and especially access to the internet for efficient and reliable connections, improvement of M-learning application user friendliness and providing a dedicated and mirrored server for M-learning system (or application). The top management should allocate adequate budget for ICT infrastructure. The ICT department should invest more in fast and reliable internet access to improve access and reduce down time. The university may consider installing a more user friendly mobile learning system. Upgrading of the infrastructure will therefore lead to enhanced utilization of the system and therefore increased mobile Learning adoption.

5.3 Areas of further research

- There is need for further study on other factors affecting M-learning (SaaS model) adoption by students in higher learning institutions. Other factors such as: Quality of service, facilitating conditions, attainment value, ubiquity, personal Innovation and many others.
- In addition, further other researches could including moderators such as gender, age, academic level, and experience of using mobile device.
- A similar study should be conducted at the lower institutions of learning to facilitate easy penetration of the technology use in learning environment.
- The study further recommends that a comparative study be done to compare the factors affecting the use of mobile learning (SaaS model) in public and private higher learning institutions.

5.6 Limitations of the Study

The readers of this research paper should be aware that the population was drawn from a selected number of university students in only one higher learning institution. Therefore, the results cannot be generalized to the entire population of Kenya. We hope this study serves as a first step in interest of inquiries towards the adoption of M-learning (SaaS model) among university learners.

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