BEHAVIOURAL INTENTION: MEDIATOR OF EFFORT EXPECTANCY AND ACTUAL SYSTEM USAGE.

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Abstract

The purpose of this study was to examine the mediating role of behavioural intention on the relationship between effort and actual system usage. There was a system usage ranging from 20 percent to 30 percent for students and 15 percent to 20 percent for staff, which could be attributed to behavioural intention as a mediator and effort expectancy. The study employed a cross-sectional research design to provide a snap shot of the relationship between effort expectancy, behavioural intention and actual usage of the system. Quantitative research approach with descriptive and analytical research strategies was used. The study considered a population of 13,922 EIS intended only at the MUBS main campus and the sample comprised of 390 intended EIS users based on the sample determination approach by Yamane (1973). Simple random sampling was used to grant an equal chance for inclusion of each intended EIS user in the sample. It was then analyzed using a Statistical Package for Social Sciences (SPSS). Pearson's correlation, regression analysis, Sobel test and Medgraph were used to establish relationship between study variables and to test mediation, respectively. Findings showed that there was a significant positive mediating effect of behavioural intention (BI) on the relationship between Effort Expectancy (EE) and Actual Usage (AU). The type of mediation was partial as EE predicts AU directly and indirectly through BI. There were also significant positive relationships between effort expectancy, behavioural intention to use and actual usage of the system. It was concluded that behavioural intention to use is a mediator of effort expectancy and actual system usage. It was recommended further that organizations pay attention to users' pre-disposition to use systems as they link their effort expectancy to actual system usage.

Key words: Effort expectancy, Behavioural Intention, Actual Usage.

Introduction

Actual usage of Information and Communication Technologies (ICTs) in light of Education Information Systems continues to arouse interest for research (King and He, 2006; Bandhyopadhay and Bandhyopadhay, 2003). In the developed world, universities are investing in Education Information System projects to perform both education and management functions more effectively while reducing costs in terms of time, material resources and money. The systems cater for individual learners by focusing on each of their needs, extend learning outside a

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classroom setting and improve association between teachers, students, parents and communities. Such systems also allow for student self-online-enrolment, accessing of the university calendar beyond the class schedule, generation of reports by both management and students and above all, ensure as well as enforce data security including privacy (Ingha and Collerette, 2003; Barber andMourshed, 2009; Kudrass, 2006). In regard to usage level of the Education Information Systems, literature suggests that there is a higher positive response in terms of actual usage of the Education Information Systems in the developed world than the developing world (Golding *et. al*., 2008).

In Uganda, use of Education Information Systems (EIS) is still in its infant stages but has been embraced to facilitate planning and management of the education sector in the country. At national level, the government developed an Education Management Information System (EMIS) to provide quality education statistics in a timely, cost-effective and sustainable manner (Bakibinga, 2011). Makerere University Business School (MUBS) also developed its Education Information System (EIS) in 2010 to manage its core business processes - automation of the application process, admission process, registration process, and automation of students' finances, results management process and automation of the human resource (Management Information Systems Unit report, 2012). However, actual usage of the EIS ranges from 20 percent to 30 percent for students and 15 percent to 20 percent for staff, which is low (Management Information Systems Unit quarterly report, 2013).

Considering that the EIS is a new technological system, there are bound to be several reasonable changes in operations influencing on actual usage of the EIS. Therefore, it means that actual usage of EIS depends an individual's effort expectancy, which shapes such individual's behavioural intention to use and ultimately, actual usage of the system (Venkatesh *et. al*., 2003; Dijk *et. al*., 2008; Byun and Finnie, 2011; Engotoit *et. al*., 2016; Moya *et. al*., 2016; Lukwago *et. al*., 2017). Therefore, there was need to examine the relationship between effort expectancy, behavioural intention to use and actual usage of the EIS. Although the EIS was developed to improve administrative and education functions in MUBS, which can only be attained successfully with actual usage of the EIS by all its intended users, its actual usage is still low, ranging from 20 percent to 30 percent for students and 15 percent to 20 percent for staff (Management Information Systems Unit quarterly report, 2013). This could be because of issues of the effort expectancy and behavioural intention to use the EIS.

Purpose of the study

This study sought to examine the mediating role of behavioural intention on the relationship between effort expectancy and actual system usage.

Research objectives

i. To examine the relationship between effort expectancy and behavioural intention to use the system;
ii. To examine the relationship between behavioural intention to use the system and actual system usage; and
iii. To determine the mediating effect of behavioural intention on the relationship between effort expectancy and actual system usage.

THEORETICAL FOUNDATION AND LITERATURE REVIEW

Variables in this study were adopted with modification from the UTAUT model (Venkatesh *et. al.*, 2012; 2003). The UTAUT model has been widely used in studying adoption and use of technology products in different study fields because it is regarded as an adequate model rather than any other technology adoption model due to its ability to explain 70 percent of variance (adjusted R^2=70%) in usage behavioural intentions compared to other models (Zeinab *et. al.,* 2014; Venkatesh *et. al.,* 2012, 2003). The UTAUT model is also comprised of a variety of explanatory variables derived from earlier theoretical models that were developed also to explain technology acceptance and use. This has made it to have a global and integrative approach in addressing technology acceptance issues in many industries (Attuquayefio *et. al.,* 2014). Two variables from the UTAUT model informed our study as explained in our conceptual framework in Figure 1. They include Effort Expectancy (EE) and Behavioural Intentions to Use (BIU) said to positively influence on Actual system Usage.

Effort expectancy and Behavioural Intention to Use

Venkatesh *et al*., 2012, p. 159) as well as Jelena and Hong (2016) explain effort expectancy as "the degree of simplicity associated with consumers' use of technology" among other UTAUT studies (Engotoit *et. al*., 2016, Lukwago *et. al*., 2017; Moya *et. al*., 2016; Kasse *et. al*., 2015; Malima *et. al.,* 2015; Kahenya *et. al.,* 2014; Ramli *et. al.*, 2013; Paul, 2013; Sedigheh *et. al*.,.2013; Mei *et. al*., 2012). Behavioural intention is the individual willingness to use and continue to use a technology, and the factor that determines the usage of a technology (Venkatesh *et al.,* 2012,).Jelena and Hong, 2016 define behavioural intention as "the individual willingness to use and continue to use a technology system, where the individuals are the users of technology." In support with other studies (for example, Engotoit *et. al*., 2016, Lukwago *et. al*., 2017; Moya *et. al*., 2016; Kasse *et. al*., 2015; Malima *et al.,* 2015; Kahenya *et. al.,* 2014; Ramli *et. al.*, 2013; Paul, 2013; Sedigheh *et*. *al*, 2013; Mei *et. al*., 2012).

In a recent study by Lukwago *et al,* (2017), it was revealed that there was a significant positive relationship between Customer Expectancy and behavioural intention to use systems thereby indicating that effort expectancy influenced individuals' behavioural intention towards actual system use. Engotoit *et al*, (2016) also found a positive significant relationship between Effort Expectancy and behavioural intention to use technological systems, a pattern, which meant that once users are able to employ a technology with minimal efforts, their disposition to use will be positive. Dijk *et al.,* (2008) state that information system users find challenges with use of such systems, an aspect further explained by Byun and Finnie (2011) who stated that a complex system that is difficult to work around can make users lose interest towards adopting it. More studies are in support of a positive relationship between effort expectancy and behavioural intention to use technological systems (for instance, Sedigheh *et. al*., 2013; Bandyopadhyay and Fraccastoro, 2007; Im *et. al*., 2011; Nassuora, 2012; Wang & Shih, 2009). However, in a study by Jelena and Hong (2016), it was found that EE does not positively influence on behavioural intention to use a technological system. In several studies, Effort Expectancy has been found to affect behavioural intention positively (Park *et. al*., 2007; Im *et. al*., 2011). The UTAUT model posits that the effort necessary to learn and use new technology will affect its acceptance and usage (Venkatesh *et. al*., 2003). We hypothesise that effort expectancy positively relates to behavioural intention to use (H_1).

Behavioural Intention to Use and Actual Usage

Actual system use refers to 'how often' and the volume of system use ('how much') by the user (Davis, 1989; Venkatesh *et. al*., 2003; Wu *et. al*., 2010). Davis asserts that one's behavioural intention influences actual system usage. This is due to internalization as well as identification and may influence behavioural intention directly via compliance. It is further argued that once end users of the system are not informed or educated about the need or relevance, this will greatly influence their behavioural intention to use and hence, there will be actual use. Behavioural intention to use influences on use of information systems such that a significant positive relationship exists between behavioural intention and actual use of systems (Engotoit *et. al*., 2016, Lukwago *et. al*., 2017; Moya *et. al.* 2016; Kasse *et. al*., 2015; Malima *et. al.,* 2015; Kahenya *et. al.,* 2014; Ramli *et. al.*, 2013; Paul, 2013; Sedigheh *et. al*., 2013; Mei *et, al*., 2012). In other studies, researchers found out that behavioural intention mediated effort expectancy in influencing system use (for example, Moya *et. al*., 2016; Paul, 2013).Therefore, i it's hypothesised that (H_2), "behavioural intention to use positively relates to actual system use" and (H_3), "Behavioural intention mediates the relationship between effort expectancy and system use."

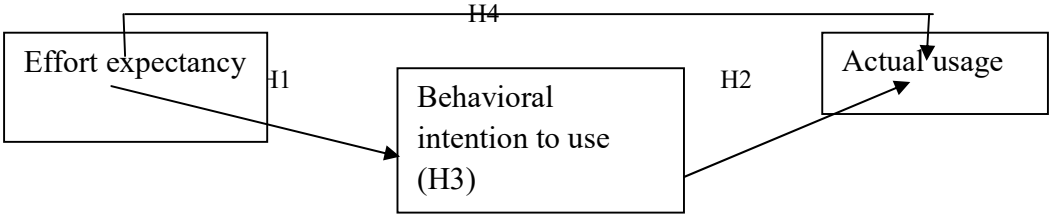
Effort expectancy and Actual Usage

In this study, we argue that effort expectancy is one of factors that determines behavioural intention and with well-established literature (for instance, Ahmad *et. al*., 2014, Alenezi *et. al*., 2015). It was discovered that effort expectancy can affect behaviour influences, which will, in turn, have a positive effect on actual use of technology (Turner *et. al*., 2010).

We hypothesise that (H_4), effort expectancy positively relates to system usage.

Conceptual framework

Figure 1 Technology Acceptance Framework for the Education Information System at MUBS



Source: Developed from the works of (Venkatesh *et al*, 2012; 2003).

The model shows the relationship between effort expectancy, behavioural intention to use and actual system usage (Figure 1). The independent variable is effort expectancy with the mediating variable as behavioural intention to use and actual system usage as the dependent variable (Figure 1). Effort expectancy directly influences behavioural intention to use the system and actual system usage, and an individual's behavioural intention to use the system influences their actual system usage (Figure 1).

METHODOLOGY

The methodology used included the research design, study population, sample size, sampling procedure, and data collection method, reliability as well as validity test, measurement of variables and data analysis**.**

Research design
This study employed a cross-sectional research design and quantitative research approach. According to Sarantakos (2005), cross-sectional analysis encompasses studies of the relationship between different variables at a point in time. A cross-sectional design was employed to provide a snap shot of the relationship between effort expectancy, behavioural intention and actual usage of the EIS.

Study Population
The study considered a total population of 13,029 EIS users comprising of 663 Master degree students, 10754 Bachelor's degree students, 1482 Diploma students and 130 Certificate students at MUBS main campus, Kampala. It has to be noted that students in the regional study campuses, Arua, Mbale Mbarara, Jinja and those in studying at Luzira Prison, were not considered due to time factor and cost of the field work.

TABLE 1: Study Population

Category	Population
Master degree students	663
Bachelor degree students	10754
Diploma students	1482
Certificate students	130
Total	**13,029**

Source: Makerere University Business School Human Resource Office (2013) and Makerere University Business School, Office of the School Registrar- Registered figures for semester one 2013/2014 Academic Year (2013).

Sample Size and Sampling Procedure
The sample comprised of 366 intended EIS users. The procedure for determining the sample size was based on the sample determination approach by Yamane (1973). The study used simple random sampling in the different strata to grant an equal chance for inclusion of each intended EIS user in the sample.

TABLE 2 Sample size contributions per user access level

Intended users	Population	Sample size contribution per level
Masters students	663	19
Bachelors students	10754	301
Diploma students	1482	42
Certificate students	130	4
Total	**13029**	**366**

Data collection method
Primary data provided by respondents constituted the main source of data. Data for this study were collected mainly through self-administered questionnaires. The questions were organized

into the following two groups: demographic questions about the respondent and also questions about the UTAUT model in its totality as already explained in this paper. The questionnaires were designed according to objectives of the study and respective study variables. However, respondents filled in the questionnaires at their convenience and responses to the questions were anchored on a five (5) point Likert scale.

Reliability and validity test

Reliability in the research instrument was assessed by using the Cronbach's alpha coefficient (Cronbach, 1951). An Alpha coefficient of 0.6 or higher for an individual test variable showed that the instrument was adequate (Nunnally, 1960). Validity test on the content was carried out by giving the research instrument to three experts in the area of Information Communication Technology usage and responses to the questions were anchored on a four (4) point scale ranging from Not Relevant, Somewhat Relevant, Quite Relevant and Relevant after which a Content Validity Index (CVI) was computed as a proportion of relevant questions for every expert.

Table 3 Cronbach's Alpha Values

Variable	Cronbach Alpha	No. of items
Effort expectancy	0.656	22
Behavioural Intention to use	0.862	15
Actual Usage	0.878	14

Source: Primary data

Table 4: Content Validity Indices

Variable	Content Validity Index
Expert I	0.982
Expert II	0.964
Expert III	0.967

Source: Primary data

Since Cronbach Alpha and Content Validity coefficients in Tables 3 and 4 were > 0.6 (Nunnally, 1960), then the scales used to measure the study variables were consistent and therefore, reliable as well as valid.

Measurement of variables

The questionnaire was developed based on similar previous studies (Luarn and Lin, 2005; Nysveen *et. al*., 2005; Pikkarainen *et. al*., 2004; Wang *et. al*., 2003; Davis, 1989; Shimp and Kavas, 1984). One of the advantages in using the UTAUT model was that it has a well-validated measurement inventory (Vakatesh, 2012, 2003). Effort expectancy was adapted from UTAUT (Venkatesh *et. al.*, 2012; 2003) and measurement depended on degree to which an individual believes that using a particular system is free from physical and mental effort as well as simplicity to acquire skills and understanding of the system. Behavioural intention to use a system was developed based on guidelines by Venkatesh and Davis (2000), Thompson et al., (2006), Chen *et al*. (2002), Suh and Han (2002), Ajzen and Fishbein (1991) as well as Venkatesh *et al*. (2012; 2003). In addition, it was determined by considering both the person's attitude towards the actual behaviour and the subjective norm associated with the behaviour in question.

Lastly, actual system usage was adapted from Venkatesh *et al*. (2003), Thompson et al.(2006), Davis (1989, 2000), (Lederer, *et al,* 2000; Mathieson *et al*, 2001) as well as Roberts and Henderson (2000) and measurement depended on frequency together with duration of actual system use. A five-point Likert-type scale, ranking from 1 (Strongly disagree) to 5 (Strongly agree), was used for all constructs.

Data analysis plan

Once data were collected with the aid of questionnaires to examine the relationship between effort expectancy, behavioural intention to use and EIS actual usage, they were sorted, edited, coded and entered into a computer. Then they were analyzed using a Statistical Package for Social Sciences (SPSS) in order to develop relationships among variables. The relationship among the study variables was analyzed using correlation coefficient and also the influence among the study variables including prediction of usage and behavioural intention was analyzed using hierarchical linear regression analysis. Sobel test and Medgraph were employed to test for mediation.

PRESENTATION OF FINDINGS

Background characteristics data of the sample

This section presents information about background characteristics of studied respondents. Analyzed respondents' characteristics included gender, age bracket, education level, and user access level, duration of interaction with computers and duration of interaction with the EIS.

Table 5: Gender

Variable (n=366)	Category	Frequency	%
Gender	Male	172	46.9
	Female	194	53.1
		366	

Source: Primary data

Table 5 reveals that 53.1 percent of respondents were females, while 46.9 percent were males. Female dominance did not affect the study because the study was not gender sensitive as shown in Tables 7 and 8 of hierarchical regressions.

Correlation and hierarchical linear regression analyses

Pearson's Correlation analysis was employed to establish if there existed a relationship between pairs of different variables of the study. Hierarchical regression was used to predict system use. The analyses facilitated in limelight of objectives of the study and consequently, they provided answers to questions of the study.

Table 6: Correlation analysis

Variable	(1)	(2)	(3)
Effort expectancy (1)	1.000		
Behavioural intentions to use (2)	.517**	1.000	
Actual system usage (3)	.447**	.630**	1.000

Source: Primary data

Objective 1: To examine the relationship between effort expectancy (EE)and behavioural intention (BI) to use the EIS in MUBS.

The first objective of the study was to examine the relationship between effort expectancy and behavioural intention to use the EIS in MUBS.

The results in the correlation matrix Table 6 and hierarchical regression summarized in Table 8 indicated that there was a significant positive relationship between effort expectancy of use and behavioural intention to use the EIS ($r = .517$, $p<.01$; Beta= .523, $p<0.01$). EE contributed 26.1 percent of the BI to use the system. This implies that the level of effort expectancy of the EIS corresponds directly and positively with their intention to use the EIS in face of challenges associated with the system.

Objective 2: To examine the relationship between behavioural intention (BI) to use the EIS and EIS actual usage (AU) in MUBS.

The second objective of the study was to examine the relationship between behavioural intention to use and actual usage of the EIS in MUBS. Findings summarized in the correlation matrix table 6 and hierarchical regression works summarized in Table 7 revealed further that there was a significant positive relationship between behavioural intention to use and actual usage of the EIS ($r = .630$, $p<.01$; Beta=.528, $p<0.01$). Behavioural intention contributed 37.2 percent to actual usage of the system. This implies that the level of actual usage of EIS by users was directly associated with their intention to use EIS in face of challenges associated with the system.

Objective 3: To examine the relationship between effort expectancy (EE) and EIS actual usage (AU) in MUBS.

The third objective of the study was to examine the relationship between effort expectancy and actual usage of the EIS in MUBS. Findings summarized in the correlation matrix Table 6 and hierarchical regression summarized in Table 7 revealed further that there was a significant positive relationship between effort expectancy and actual usage of the EIS ($r = .447$, $p<0.01$; Beta=.171, $p<0.01$). EE contributed 2 percent to actual usage of the system. This implies that the level of actual usage of EIS by users was directly associated with their effort expectancy of the EIS in face of challenges associated with the system.

TABLE 7: Hierarchical Regression analyses of EE, BI and AU

	MODEL 1		MODEL 2		MODEL 3	
Variable	Beta	T	Beta	T	Beta	T
Constant		14.531**		6.610**		5.519**
Gender	-.051	-1.068	-.049	-1.287	-.041	-1.103
Age	-.076	-1.471	-.029	-.702	-.036	-.896
Education	-.006	-.121	-.003	-.668	.003	.080
Duration using computers	.077	1.374	.011	.242	.011	.256
User Access Level	-.024	-.481	.001	.016	-.008	-.198
Duration	-.002	-.035	-.017	-.417	-.048	-1.151

using EIS						
Behavioural intention			.615**	16.715**	.528**	12.494**
Effort expectancy					.171**	3.983**
R^2	.012		.384		.404	
AdjR^2	.001		.374		.394	
R^2 change	.012		.372		.020	
SigF change	.473		.000		.000	
F	.930		41.191		39.182	
Sig	.473		.000		.000	

Source: Primary data

TABLE 8: Hierarchical Regression Analysis of EE and BI

	MODEL 1		MODEL 2	
Variable	Beta	T	Beta	T
Constant		13.610		7.156
Gender	-.004	-.083	.020	.494
Age	-.076	-1.491	-.079	-1.790
Education	-.006	-.110	.014	.319
Duration using computers	.107	1.926	.080	1.677
User Access Level	-.041	-.806	-.056	-1.288
Duration using EIS	.025	.480	-.075	-1.646
Effort expectancy			.523**	12.955**
R^2	.018		.279	
AdjR^2	.005		.268	
R^2 change	.018		.261	
SigF change	.210		.000	
F	1.408		25.615	
Sig	.210		.000	

Source: Primary data

Mediating role of behavioural intention on the relationship between effort expectancy and actual usage

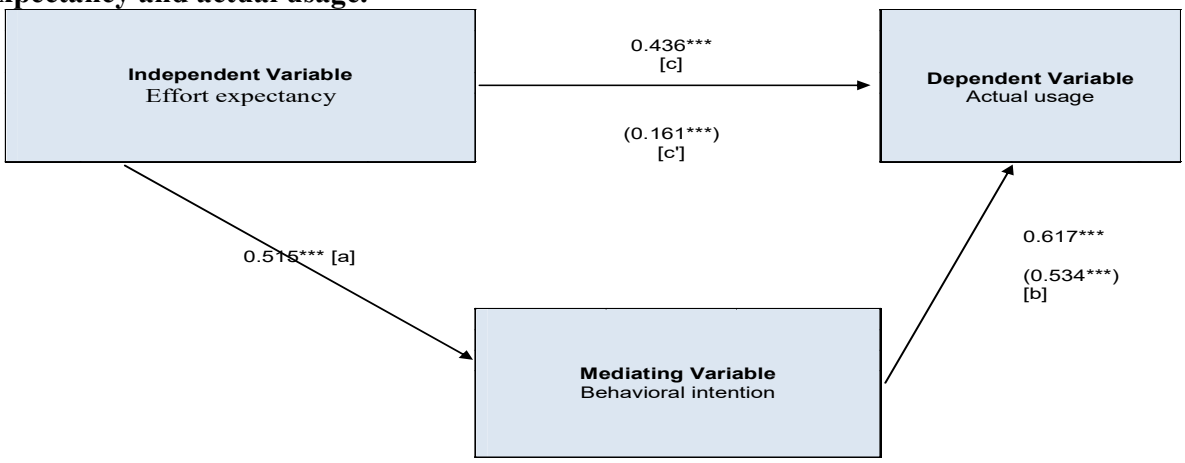
There was a significant positive mediating effect of behavioural intention on the relationship between EE and AU (Sobel z-value=9.157887, $p<0.001$) as shown in Table 9 and Figure 2. The type of mediation is partial as EE predicts AU directly and indirectly through BI.

Table 9 Sobel Test

Type of mediation		Significance
Sobel z-value	9.157887	p =<0.000001
95% Symmetrical Confidence interval		
Lower	**0.24335**	

Higher	**0.37588**	
Unstandardized indirect effect		
a*b	**0.30962**	
Se	**0.03381**	
Effective Size measures		
Standardized Coefficients		R^2 Measures (Variance)
Total:	**0.436**	**0.190**
Direct:	**0.161**	**0.019**
Indirect:	**0.275**	**0.171**
Indirect to Total ratio	**0.63**	**0.899**

Figure 2: Mediating role of behavioural intention on the relationship between effort expectancy and actual usage.



DICUSSION OF FINDINGS

Relationship between effort expectancy and behavioural intention to use the EIS in MUBS

There was a significant positive relationship between effort expectancy and behavioural intention to use the EIS. This implies that the level of effort expectancy of EIS corresponds directly with their intention to use the EIS in face of challenges associated with the system. This means that if the EIS is perceived by users to be easy to use free from mental effort, then their behavioural disposition towards using the system will increase. This finding is in agreement with studies such as Engotoit *et al.,* (2016) in a study on a mobile-based communication adoption model for agricultural marketing using the SEM coefficient found a positive relationship between EE and BI. Moreover, Moya *et al*., (2016) in a study of adoption of e-tax services in Uganda Revenue Authority found the P value below 0.05, indicating a significant positive relationship between EE and BI. Furthermore, Lukwago *et al,* 2017 in a study of adoption of mobile money transfer services in Uganda found a significant positive relationship between customer expectancy and BI. Vekatesh *et al*. (2003, 2012) studies also reported EE as an important predictor on the decision not only to adopt a technology but also to continue to use that technology.

Relationship between behavioural intention to use the EIS and EIS actual usage in MUBS
There was a significant positive relationship between behavioural intention to use and actual usage of the EIS. This implies that the level of actual usage of the EIS by users was directly associated with their intention to use the EIS in face of challenges associated with the system.
This finding supports recent research by Engotoit *et al*., (2016) who in a study on a mobile-based communication adoption model for agricultural marketing using the SEM coefficient found a positive relationship between BI and AU. Moreover, Moya *et al.,* (2016) in a study of adoption of e-tax services in Uganda Revenue Authority found the P value below 0.05, indicating a significant positive relation between BI and AU. Lukwago *et al*., (2017) in a study of adoption of mobile money transfer services in Uganda found a significant positive relationship between BI and AU. Vekatesh *et al*. (2003) also indicated behavioural intention as a determinant of actual system usage.

To examine the relationship between effort expectancy EIS and EIS actual usage.
There was a significant positive relationship between effort expectancy and actual usage of the EIS. This implies that the level of actual usage of the EIS by users was directly associated with their effort expectancy of the EIS in face of challenges associated with the system. This means that if the EIS is perceived by users to be easy to use free from mental effort, then their actual usage of the system will increase. Engotoit *et al*. (2016) in the study on a mobile-based communication adoption model for agricultural marketing using the SEM coefficient found a positive relationship between EE and system usage. In addition, Moya *et al,* (2016) in the study of adoption of e-tax services in Uganda Revenue Authority found a significant positive relationship between EE and system usage. Moreover, Lukwago *et al,* (2017) in the study of adoption of mobile money transfer services in Uganda found a significant positive relationship between customer expectancy and system usage.

Mediating role of behavioural intention to use on the relationship between effort expectancy and actual system usage
There was a significant positive mediating effect of behavioural intention on the relationship between EE and AU (Sobel z-value=9.157887, $p<0.001$) as shown in Figure 1. The type of mediation is partial as EE predicts AU directly and indirectly through BI. This is in line with results from a study by Moya *et al*, (2016) on adoption of e-tax services in Uganda Revenue Authority whereby it was found out that the Sobel's Z value pointed to significant type of mediation in view of the fact that the supreme effect of effort expectancy on Behavioural Intention reduced to a considerable significant level from B equivalent to 0.214*** to B at -0.38.

CONCLUSIONS

The study focused on behavioural intention to use as the mediator of effort expectancy and actual system usage. It should be noted that significant positive relationships were established between the study variables. Effort expectancy of the system improved or enhanced the users' behavioural intention to use the system. Therefore, the more the system becomes free from mental effort, the more users will tune their positive behaviour towards using the system. Behavioural intention to use the system enhanced actual system usage. Therefore, the higher the users' pre-disposition to respond favourably to the system, the higher their actual system usage. Effort expectancy influenced actual system usage. Therefore, the higher the system becomes easy to use, the more users will actually employ it. Behavioural intention to use a system mediates effort expectancy and actual system usage. Therefore, when users feel that the system is free from mental effort in

terms of use, their pre-disposition to respond favourably increases thereby they actually use the system.

Theoretical implications
Findings from this study also added to the existing body of knowledge by generating literature on behavioural intention to use as the mediator of effort expectancy and actual system usage by students at an institution of higher learning in a developing country. Theoretically, this study identified a direct link of effort expectancy in predicting usage, which is an improvement to Vekatesh *et al*. (2012; 2003) models that had no direct relationships between effort expectancy and usage.

Methodological implications
The study employed medgraph with sobel test Jose N P (2013) for mediation, which is robust in testing mediation.

Practical implications
The outcomes from the study will be of great importance to the MUBS students community and management because they will be able to appreciate the mediating role of behavioural intention on users' effort expectancy and their actual system usage. This study provides information to advance need for system usage and research to guide managerial interventions. Usage of education system needs thorough understanding by students in order to ensure highly relevant and effective learning. This can be done by investing in research and development activities so as to establish further demand side information as a strategy towards customer centricity.

Policy implications
Policy makers need to design system usage policies and adopt strategies geared through effort expectancy and behavioural intention. Additionally, designing programs that stimulate individual students for their effectiveness is crucial in advancing system usage.

It is important to ensure awareness of behavioural challenges that propel voluntary use of systems when proposing initiatives towards promoting a highly inclusive ICT system. Policy frameworks need to support establishment of robust systems in higher institutions of learning to enhance service delivery. Moreover, there is a need to provide a planning policy framework that recognizes individuals' effort expectancy and behavioural concerns.

Recommendations
The following recommendations are made to usage of technological systems to improve business processes in terms of effectiveness and efficiency:

Organizations should ensure that systems they introduce are simple, user-friendly, easy to learn and require less mental effort and training in order to influence users' positive pre-disposition towards using the systems.

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