EXPLORING THE IMPACT OF INSTITUTIONAL SUPPORT ON STUDENTS' E-LEARNING INTENTIONS: MODERATING EFFECT OF AGE, GENDER AND INTERNET ACCESS

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Abstract

E-learning is regarded as one of the most effective modes of course content delivery at institutions of higher learning; however, its adoption by students depends on strong institutional support. Prior studies have revealed that institutions differ in their levels of institutional support towards e-learning. The purpose of this study is to explore the impact of institutional support on students' e-learning intentions and to examine the moderating effect of age, gender and internet access on this relationship. A quantitative approach was applied in the study where a sample of 169 Business Management students was selected using random sampling technique to participate in the study. A structured questionnaire was developed and administrated to collect empirical data. Descriptive statistical analysis was conducted using SPSS version 23 software. Structural Equation Modeling (SEM) was applied in data analysis using WarpPLS 6.0 version software. Findings revealed that institutional support has a significant, positive impact on students' e-learning intentions. The higher the level of e-learning support from institution, the higher the level of students' e-learning intentions. In addition, at a high level of institutional support, female students showed higher e-learning intentions than their male counterparts. Furthermore, at a high level of institutional support, students who have internet access at home showed higher e-learning intentions than students who do not have any internet access at home. Results also revealed that students' age has no significant moderating effect on the relationship between institutional support and students' e-learning intentions. The study concludes that institutional support is crucial to enhancing students' e-learning intentions and those institutions of higher learning should provide support to students taking courses online, such as reliable internet connectivity and computer laboratory facilities.

Keywords: E-Learning Intentions, Age, Gender, Institutional Support, Internet Access.

1. INTRODUCTION

The concept of e-learning refers to different forms of technology-supported learning (formal or informal) (Misut & Pribilova, 2015). It is simply the use of electronic media and information, and communication technologies (ICT), such as audio or video tape, satellite TV, CD-ROM and internet in education (Pavel, Fruth, & Neacsu, 2015). E-learning is highly effective in supporting and enhancing student-centred learning approaches among students globally, contributing to their global knowledge bases (Ionita, Visan, Niculescu, & Popa, 2015). Several terminologies have been used to describe this learning concept, such as computer-based learning (CBL) (Gladiola, Rotariu, Rotariu, & Costin, 2013; Schumacher & Ifenthaler, 2018; B. Wu, Xu, & Ge, 2012), e-learning (Clark, Pryor, & Halawani, 2016; Copeland, Gedeon, & Caldwell, 2014; Gaupp,

Drazic, Dinius, & Koerner, 2017; Luis, Cruz, Arcia, & Márquez, 2015), internet-based learning (IBL) (Blake & Gartshore, 2016; Dursun, Oskaybaş, & Gökmen, 2013; C. Wu & Chen, 2012), online-learning (OL) (Gilbert & Bowden, 2017; Orabona & Pál, 2017; Symeonides & Childs, 2015), resource-based learning (Sto & Pawlowski, 2018), and web-based learning (WBL) (Gökçearslan & Alper, 2015; Phillips, 2015; Rostaminezhad, Mozayani, Norozi, & Iziy, 2013; Tsay, Kofinas, & Luo, 2018). This study, however, uses the term e-learning to refer to the use of technology in teaching, learning and assessment.

Many students view e-learning as the most convenient way of learning because of its benefits, such as saving costs on travelling to campus, and the availability of learning content anytime and anywhere. Furthermore, students may complete and submit their assignments online at any time of the day (Pavel et al., 2015). Through e-learning teachers can upload online learning materials, mark online assessments, while students have the opportunity to interact with learning materials, and communicate with teachers and other students (Mayisela, 2017). Teachers, however, may experience difficulties in keeping their students engaged in an e-learning class because of the lack of face-to-face contact between students and teachers, thus making it difficult for teachers to read their students' nonverbal cues, boredom or frustration (Pavel et al., 2015).

In South African higher education institutions, there is no common approach to e-learning and there is on-going debate whether the full potential of e-learning in these institutions is adequately utilised. A study by Bagarukayo and Kalema (2015) reveals that e-learning usage and adoption levels vary in different institutions, according to technology availability and institutional support (Bagarukayo & Kalema, 2015). The study attempts to explore the impact of institutional support on students' intentions to adopt e-learning. The significance of the study is to assist institutions with strategies to enhance these intentions through effective institutional support. The following are the objectives of the study:

- To explore the impact of institutional support on students' e-learning intentions.

- To examine the moderating effect of age on the relationship between institutional support and students' e-learning intentions.

- To investigate the moderating effect of gender on the relationship between institutional support and students' e-learning intentions.

- To determine the moderating effect of internet access on the relationship between institutional support and students' e-learning intentions.

The major limitation of the study has been identified. The study was conducted only on Business Management students. Future studies could be extended to students in other faculties, which might give different results.

2. LITERATURE REVIE

2.1 Institutional Support

Within South Africa, because of the historical position of advantaged and disadvantaged institutions of higher learning inherited from the apartheid era, this position has produced varying perspectives on how technology in these institutions could be utilised (Ng'ambi, Brown, Bozalek, Gachago, & Wood, 2016). Scholars further argue that higher education institutions in South African have implemented technologies in a number of ways to address the challenges they are faced with, such as the escalating cost of education, declining state subsidies, pressures to enhance efficiency and throughput, as well as to increase student access to higher education.

Although the use of e-learning technologies started in early the 2000s in South Africa, institutions of higher learning differ in the levels of institutional support (Bagarukayo & Kalema, 2015). Mayisela (2017) asserts that institutional and faculty support are among the most significant factors leading to e-learning success (Mayisela, 2017). Mcgill, Klobas and Renzi (2014) argue that ongoing institutional support, such as financial support for technology and development is needed to enhance the success of e-learning (Mcgill et al., 2014). They also add that at institutional level, technology needs to be up to date to support e-learning. FitzPatrick (2012) suggests five critical factors for successful online learning in institutions. These include technology (availability, connectivity, and reliability); human: pedagogy (attitude, and communication); design (content, interface, and framework); support (feedback, resources, and training); and evaluation (assessment, usability, and quality) (Asiry, 2017).

Alhabeeb and Rowley (2018) conducted a study to explore e-learning success factors from students' and

teachers' perspectives at King Saud University, Saudi Arabia. They concluded that technology infrastructure (ease of browsing and ease of internet access, adequate availability of computer labs and computers' reliability); teachers' characteristics (enthusiasm and competence of teachers regarding the e-learning technology); and student characteristics (interaction with the system); are the three most critical factors for e-learning success (Alhabeeb & Rowley, 2018). Bharuthram and Kies (2013) also aver that institutions should create a supportive environment where academics can be empowered to use e-learning in teaching and learning, as well as its advantages and disadvantages (Bharuthram & Kies, 2013).

2.2 E-learning Intentions

According to Fishbein and Ajzen, intentions can be regarded as the measurement of the "likelihood that express if a person will get involved in a given behaviour, provide the behavioural intention, involving those motivational factors that influence a behaviour" (Luis et al., 2015). The Theory of Reasoned Action (TRA) posits that an individual's behavioural intention is determined by two factors: the person's attitude (person's judgment that performing the behaviour is good or bad) towards the behaviour, and subjective norms. In addition, Technology Acceptance Model (TAM) advances the TRA by positing that perceived usefulness (PU) and perceived ease of use (PEOU) are the key drivers leading to actual system usage (Aparicio, Bacao, & Oliveira, 2017; Ramadiani, Azainil, Haryaka, Agus, & Kridalaksana, 2017).

Hussein (2017) conducted a study to explore the relationship between students' e-learning intention and factors of attitude, perceived usefulness (PU) and perceived ease of use (PEOU) among 151 students. Results revealed that students' attitude is a significant factor leading to students' e-learning intention (Hussein, 2017). Khasawneh (2015) examined the possible factors related to the usage of technology among academics by applying the Decomposed Theory of Planned Behaviour (DTPB). The results showed that self-efficacy (SE), and facilitating condition (FC) have a positive influence on academics' intention to use technology in the higher educational system (Khasawneh, 2015). Bagarukayo and Kalema (2015) argue that as technology adoption is influenced by attitudes, perceived ease-of-use (PEOU), perceived usefulness (PU) and behavioural intentions, it is vital that institutions to ensure that these factors are positively enhanced for the students' successful uptake of e-learning (Bagarukayo & Kalema, 2015).

Consistent with Theory of Reasoned Action, Theory of Planned Behaviour and Technology Acceptance Model, motivation plays a significant role for students to adopt e-learning technologies. This study suggests that institutional support as a motivating factor is likely to lead to students' e-learning intentions and finally adoption. It is hypothesised that:

H1: Institutional support has a significant impact on students' e-learning intentions.

2.3 Age, Gender and Internet Access

Several studies have concluded that e-learning's main purpose is to provide learning through technology (Al-Hunaiyyan, Alhajri, & Al-Sharhan, 2018; Aldiab, Chowdhury, Kootsookos, & Alam, 2017; Bradac & Walek, 2017; Taha et al., 2018). Urh, Vukovic, Jereb, and Pintar (2015) opine that institutions should organise e-learning such that students are satisfied with it. They further argue that for the sound organisation of e-learning, it is vital for institutions to be aware of students' characteristics, such as age, gender, culture and skills, among other things (Urh, Vukovic, Jereb, & Pintar, 2015). A study by Asiry (2017) reveals that factors such as gender and age, among others things, can influence student learning preferences (Asiry, 2017). Moreover, access to the internet also plays a vital role in students' e-learning adoption (Ashman et al., 2014; Khamis, Rodriguez, & Salichs, 2002; Stotz & Lee, 2018).

This study therefore suggests that the relationship between institutional support and students' e-learning intentions is influenced by their age, gender and internet access. It is hypothesised that:

H1a: Students' age has a significant moderating effect on the relationship between institutional support and students' e-learning intentions.

H1b: Students' gender has a significant moderating effect on the relationship between institutional support and students' e-learning intentions.

H1c: Students' internet access has a significant moderating effect on the relationship between institutional support and students' e-learning intentions.

3. RESEARCH MODEL

Based on the review of the literature, the research model for the study (Figure 1) is proposed. This model is drawn from Motivation Model (MM) proposed by Davis, Bagozzi and Warshaw, which posits that the

behaviour of an individual is driven by extrinsic and intrinsic motivations (Samaradiwakara & Gunawardena, 2014). The Motivation Model has been applied in various studies to determine technology adoption and usage (Dulloo, Mokashi, & Puri, 2014). This study suggests that institutional support could be the extrinsic motivation for students' e-learning intentions.
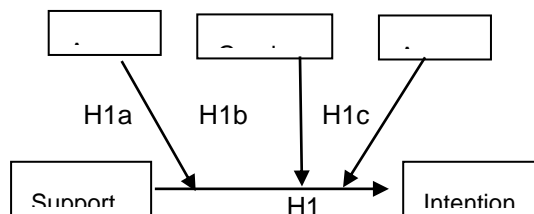

Figure 1: Proposed research model

The proposed model was developed to test the following hypotheses:

H1: Institutional support has a significant impact on students' e-learning intentions.

H1a: Students' age has a significant moderating effect on the relationship between institutional support and students' e-learning intentions.

H1b: Students' gender has a significant moderating effect on the relationship between institutional support and students' e-learning intentions.

H1c: Students' internet access has a significant moderating effect on the relationship between institutional support and students' e-learning intentions.

4. MATERIALS AND METHODS

This section presents the research method applied in the study. Research design, sampling technique, data collection and analysis are briefly discussed.

4.1 Research Design and Sampling

A quantitative approach was used in the study because it can be used to present generalisable findings and it often reduces and restructures a complex problem to a limited number of variables. Furthermore, this approach can be used to test theories or hypotheses. Quantitative research is used in this study because it is very useful for quantifying opinions, attitudes and behaviours. A random sampling technique was adopted where 169 Business Management university students participated in the study.

4.2 Data Collection

A structured questionnaire was used to collect empirical data using a four point Likert scale (1 = Strongly disagree, 2 = Disagree, 3 = Agree, 4 =Strongly agree). The questionnaire consisted of three sections. In Section A demographic data such as gender, age and internet access at home were sought. Section B consisted of five items which probed participants' perceptions of institutional support towards e-learning. Lastly, section C consisted of four items that were aimed at probing participants' e-learning intentions.

4.3 Analysis of Data

Descriptive statistics were used in analysing the demographic profiles of participants, as well as the internal consistency of the research instrument using SPSS version 23 software. Pearson's correlation analysis was conducted to determine if there was any statistically significant relationship between the level of institutional support and students' e-learning intentions. Structural Equation Modelling using WarpPLS 6.0 software was employed in the analysis of data.

5. RESULTS AND DISCUSSION

5.1 Model fit

Average path coefficient (APC), Average R-squared (ARS), Average adjusted R-squared (AARS), Average block VIF (AVIF), Average full collinearity VIF (AFVIF) and Tenenhaus GoF (GoF) were determined to validate the quality of the model and these model fit indices are displayed in Table 1.

Table 1: Model fit indices

Average path coefficient (APC)	0.201
Average R-squared (ARS)	0.500
Average adjusted R-squared (AARS)	0.478
Average block VIF (AVIF)	1.188
Average full collinearity VIF (AFVIF)	1.418
TenenhausGoF (GoF)	0.529

The Average path coefficient (APC) (0.201) was found to be significant at p=0.002. The Average R-squared (ARS) (0.500) and the Average adjusted R-squared (AARS) (0.478) were also found to be significant at p<0.001. The Average block VIF (AVIF) and the Average full collinearity (AFVIF) were also consistent with recommendations that they be less than the threshold of 5 for the model quality to be adequate (Kock, 2018). The Tenenhaus GoF (GoF) index for the model was found to be above the recommended threshold of 0.36 (Kock, 2018). The research model was therefore considered adequate.

5.2 Composite Reliability Analysis Results

To validate internal consistency for all independent and dependent variables, composite reliability (CR) analysis was conducted using WarpPLS 6.0, and the results of the analysis are presented in Table 2 below.

Table 2: Composite Reliability Analysis results

	Support	Intentions
IS1	0.704	
IS2	0.724	
IS3	0.772	
IS4	0.781	
IS5	0.846	
EI1		0.849
EI2		0.825
EI3		0.846
EI4		0.824

Composite reliability (CR) for all the independent and dependent variables exceeded the recommended threshold of 0.70 (Holtzman, 2014; Kline, 2013), indicating the acceptable reliability of the research instrument. The results of the study were therefore accepted.

5.3 Demographic Profiles of Participants

Participants' age, gender and internet accessibility profiles are presented in Tables 3, 4 and 5 respectively.

Table 3: Age profile of participants

		Frequency	%	Valid %	Cum %
Valid	20 and less	6	3.6	3.6	3.6
	21-25	106	62.7	62.7	66.3
	26-30	47	27.8	27.8	94.1
	31-35	5	3.0	3.0	97.0
	36-40	3	1.8	1.8	98.8
	41 and above	2	1.2	1.2	100.0
	Total	169	100.0	100.0	

Table 4: Gender profile of participants

		Frequency	%	Valid %	Cum %
Valid	Male	93	55.0	55.0	55.0
	Female	76	45.0	45.0	100.0
	Total	169	100.0	100.0	

Fifty-five percent (55%) of participants were males while forty-five percent (45%) were females.

Table 5: Internet accessibility of participants

		Frequency	%	Valid %	Cum %
Valid	No access	49	29.0	29.0	29.0
	Access	120	71.0	71.0	100.0
	Total	169	100.0	100.0	

The majority of participants (71%) indicated that they have internet access in their homes. This makes it easier for this group to have access to learning content in the comfort of their homes. They do not need to travel to campus to access e-learning technologies.

5.4 Descriptive Statistics of latent Variables

Descriptive statistical analysis results of the latent variables are depicted in Table 6 below.

Table 6: Descriptive statistics of latent variables

	Mean	Std. Dev	Chronbach's Alpha	Items
Support	3.00	.549	.804	5
Intentions	3.19	.475	.800	4

Results revealed that participants agree that there is adequate support for e-learning (M=3.00, Stdev=0.549) from the institution. Participants also indicated that they have a high level of e-learning intentions (M=3.19, Stdev=0.475). Cronbach's alpha for both latent variables were above the recommended threshold of 0.7 (Peng & Kim, 2014; Speece, 2015), and it can therefore be concluded that the research instrument was reliable.

5.5 SEM Results

The results of Structural Equation Modeling Analysis are depicted in Figure 2.
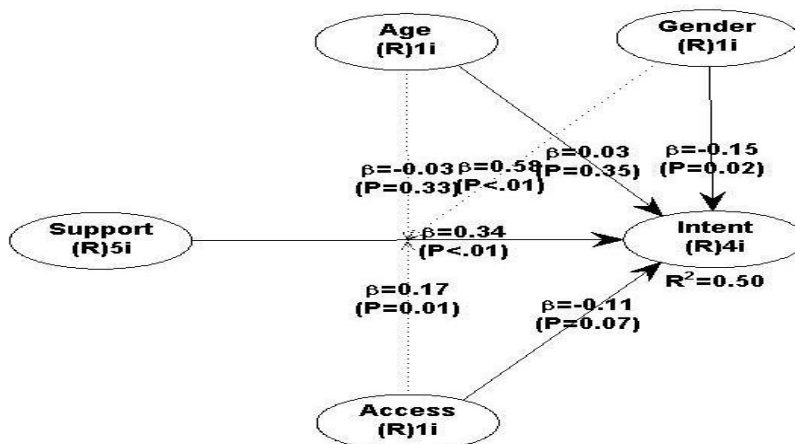
Figure 2: SEM Analysis Results

5.5.1 Relationship between Institutional Support and Students' E-Learning Intentions

Results showed that there is a significant positive relationship between institutional support and students' e-learning intentions (β=0.34, p<0.01). These results are consistent with the findings by many researchers that the level of institutional support enhances students' e-learning adoption intentions (Mcgill et al., 2014). For the successful adoption of e-learning by students, institutions should provide support, such as financial support for technology and development. The higher the support by the institutions of higher learning, the more students are likely to develop positive intentions towards e-learning.

H1 is supported.

5.5.2 Moderating Effect of Age on The Relationship between Institutional Support and E-Learning Intentions

SEM results showed that students' age has no significant moderation effect on the relationship between

institutional support and students' e-learning intentions (β=-0.03, p=0.33). This could be attributed to the fact that the majority of students (94.1%) who participated in the study were below the age of 30, and as digital natives, they possess the necessary skills that are required for e-learning.

H1a is not supported.

5.5.3 Moderating Effect of Gender on The Relationship between Institutional Support and Students' E-Learning Intentions

Findings of the SEM analysis revealed that gender has a significant moderating effect on the relationship between institutional support and students' e-learning intentions (β=0.58, p<0.01).
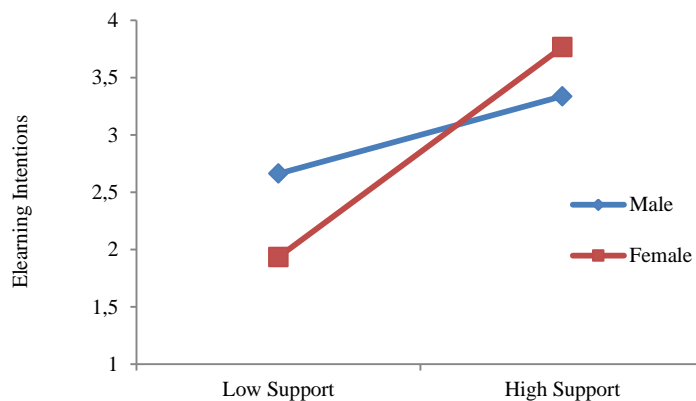

Figure 3: Moderating effect of gender on the relationship between institutional support and students' e-learning intentions

At a low level of institutional support, both males and females show low levels of e-learning intentions, with males showing slightly higher intentions than females. However, at a higher level of institutional support, the levels of e-learning intentions among females increase more significantly than with the males. This trend could be because female students have more computer self-efficacy that the males. In addition, these females could have a positive attitude towards e-learning, and that could help to enhance their e-learning intentions.

H1b is supported.

5.5.4 Moderating Effect of Internet Access on The Relationship between Institutional Support and Students' E-Learning Intentions

Results also indicated that students' internet access has a significant moderation effect on the relationship between institutional support and their e-learning intentions (β=0.17, p<0.01).
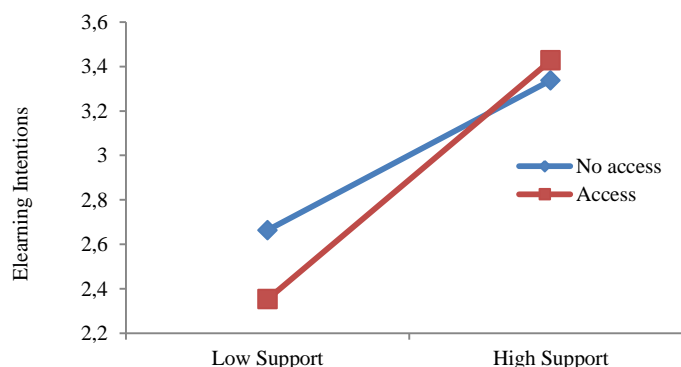

Figure 4: Moderating effect of internet access on the relationship between institutional support and e-learning intentions

At lower levels of institutional support, students showed lower levels of e-learning intentions. However, at higher levels of institutional support, the levels of e-leaning intentions among students who have internet access in their homes increases significantly. These results indicate the importance of internet access to

enhance students' e-learning intentions. The non-availability of internet access, especially at homes, could be a barrier to students e-learning intentions. Parents should provide, where possible, wifi connectivity for their children at home to assist them in enhancing their e-learning adoption intentions.

H1c is also supported.

6. CONCLUSION

The objectives of the study were to examine the impact of institutional support on students' e-learning intentions, and to explore the moderation effects of age, gender and internet access on this relationship. All hypotheses, except the moderation effect of age, were supported. Results revealed the significance of institutional support for the successful adoption of e-learning by students. The more support provided by institutions, the more students are likely to adopt e-learning. Such support could be the provision of computer labs equipped with up to date e-learning technologies, reliable internet access and the development of academics to utilise these technologies effectively to enhance student learning. Future studies could focus on e-learning adoption by academics.

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