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Perceived Ease of Use as a Predictor of Social Networking Technologies Adoption in Institutions of Higher Learning in Uganda

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Abstract

Social Networking Technologies (SNTs) play a major role in education by improving student academic performance through a participatory culture. The purpose of this study was to examine the influence of Perceived Ease of Use (PEOU) on the adoption of Social Networking Technologies in institutions of higher learning in Uganda. A cross sectional survey methodology was employed to gather data from 146 institutions of higher learning on the variables captured by the modified PEOU construct. Results of correlation and regression analysis indicated that a positive and significant relationship exists between Perceived Ease of Use and SNTs adoption. These findings have theoretical implications for models of SNTs adoption by aligning Perceived Ease of Use as a Significant Predictor of SNT adoption. The findings also have practical interventions designed at increasing use of SNTs by pointing out that lecturers and students should conceptualize the aspects of technology-enhanced tools and realize the potential of the use of SNTs in the lecturing and learning contexts respectively.

Keywords

Social Networking Technologies, Perceived Ease of Use, Perceived Usefulness, Technology Acceptance Model, User Generated Content, SNT Adoption

Academic Discipline and Sub-Disciplines

Education, Distance Learning, Social Networking Technologies

SUBJECT CLASSIFICATION

Information and Communication Technology in Education

TYPE (METHOD/APPROACH)

The study used a cross sectional survey methodology to gather data from 146 institutions of higher learning on the variables captured by the modified perceived ease of use construct.

1.0 INTRODUCTION

In today's education sector, the role of SNTs adoption has gained considerable momentum (Munguatosha et al., 2011). Noticeably, institutions of higher learning are moving away from traditional teaching methods towards an online teaching focus for purposes of increasing students' retention levels of knowledge, improving on student engagement in teaching and learning, as well as improving on collaborative learning (Hoffman, 2009; Grover & Stewart, 2009) for purposes of ensuring efficiency and effectiveness in service delivery within the education sector. This is manifested by the sites such as Facebook, Twitter, LinkedIn, MySpace, Wikipedia, digg, del.icio.us, YouTube, and flickr online platforms for social connections commonly known as the Social Networking Technologies. In this context, SNTs is recognized as the creation, sharing and engagement of user generated content (UGC) (Reuben et al., 2012).

According to recent figures, while 66% of online US adults use SNTs, in the education sector, more than 90% of the college students in the US are using SNTs (Ellison et al., 2007; Wiley & Sisson, 2006). Further, a recent study in Zimbabwe indicates that majority of learners in her Higher Institutions of Learning mainly use Facebook and MySpace as Social Networking Technologies for academic purposes (Zanamwe et al., 2013). This point to the importance of SNTs within the education sector.

The use of Social Networking Technologies has certainly entered education landscape, carrying along with it the notion that users add value through their participation (Grover & Stewart, 2010). This has changed the web browsing culture from passive to participatory with easily-created user-generated content. This is evident when students actively participate in knowledge creation for themselves and their peers by employing the tools they use every day, they change the flow of information from "unidirectional to multidirectional" (Park, 2009). Lee and McLoughlin (2007) noted that this reality is one where educators surrender some control to embrace the informal learner-centred instructions empowering the learners. Accordingly, SNTs adoption has become one of the most important managerial challenges in institutions of higher learning.

Despite the importance of SNTs adoption (Hoffman, 2009), in Uganda’s context SNTs adoption is very low. A study by the freedom on the net report (2014) has demonstrated that only 15% of Ugandans use SNTs. The effect of this has been predominantly adverse, specifically low retention levels, low socialization levels, low student engagement levels and no sense of control and ownership of knowledge among students (Munguatosha, 2011). Therefore, knowing how to improve SNTs adoption remains a crucial and virgin research area (Kingsly et al., 2013).

The technology adoption literature is rife with studies that demonstrate the importance of PEOU in improving technology adoptions (Davies, 1989; Yang & Yoo, 2004; Venkatesh and Balla, 2008; Shroff et al., 2011). However, the majority of these studies have dwelt on friendship initiation (Sakarkar et al., 2014; Laura & Tucker, 2014) and others zero on the manufacturing sector (Ndekwa, 2014; Masoodul et al., 2014; Ayman, 2013; Azam & Mohammed, 2009; Huo et al., 2011) while others have focused on business and communications sector (Wang et al., 2012; Lee et al., 2000; Khayati, 2013; Gary, 2015; chung et al., 2000; Kaasinen, 2005). Surprisingly, little research about SNTs adoption has considered the education sector (Hoffman, 2009; Grover & Stewart, 2013; Kingsly et al., 2013) in general and more specifically institutions of higher learning. The only study in Uganda is by (Munguatosha et al., 2011). This is ideally a knowledge gap that this study intends to fill.

Arising from the review of literature, this study points to the importance of PEOU in improving SNTs adoption. Reliance on PEOU by organizational managers has been argued to predict SNTs adoption (Zanamwe et al., 2013; Kingsly et al., 2013; Munguatosha et al., 2011; Bagozzi, 2007) in order for educators to surrender some control to embrace the informal learner-centred instructions empowering the learners, increase student engagement, collaboration and knowledge retention levels with a cumulative effect being better academic performance.

The domains of PEOU such as physical effort, mental effort and perceptions of how easy SNTs are to learn to use (Davis, 1989; Henderson and Divett, 2003) may therefore enable students use these technologies with ease that consequently aide in easy SNTs adoption.

The PEOU domains such as physical effort, mental effort and perception of how easy SNTs are to learn to use are illustrated in figure one below by the arrow that emanates from PEOU construct to SNTs adoption. It is apparent from this preliminary work and the conceptual model presented that the study of PEOU will have implications for both academia and practioners. Figure one below illustrates a framework to guide this study;

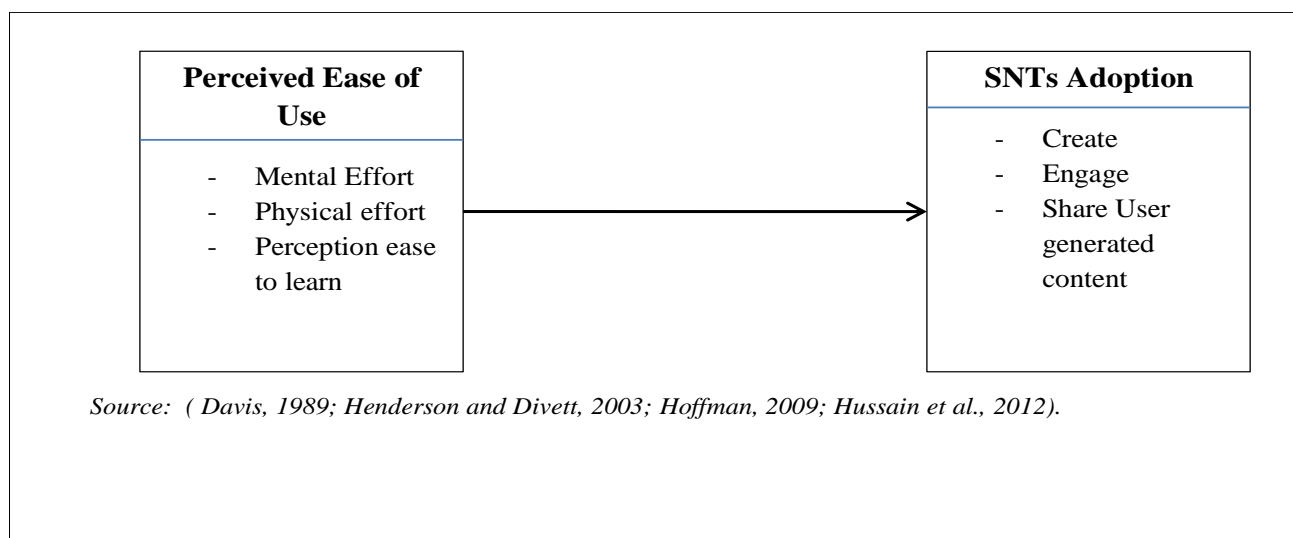


Figure 1: Conceptual Framework

2.0 LITERATURE REVIEW

2.1 Perceived Ease of Use (PEOU) and Adoption of Social Networking Technologies

Venkatesh and Balla (2008) defined perceived ease of use as the degree to which a person believes that using an IT will be free of effort. Yang & Yoo (2004) found that perceived ease of use is the degree of difficulty or ease to learn on how to use and then incorporate a new technology into daily routines. Based on this study, it might be significant for Higher Institutions of Learning to tailor their pedagogical activities with SNT’s to provide easy access for students and staff. When carrying out teaching activities, it is necessary to use a medium that the students and lecturers are able to relate to and is easy to gain access to in order to compliment online studying.

Perceived ease of use (PEOU) has a significant effect on attitude towards usage (ATU). Shroff et al (2011) explains that when students perceive the e-portfolio system as one that is easy to use and nearly free of mental effort, they may have a favourable attitude towards the usefulness of the system and therefore intention to use the system increases.

Further, Chih et al (2012) argues that students are always willing to use an online system to assist their course works if they find it easy to use and that it is extremely important to make an online learning platform easy to interact with, such

as through clear and simple navigation buttons of all the pages and personalized information search service, since such measures enhance student perceptions of the ease of use of a technology. Masrom (2007) posits that students find e-learning systems easy to use when an e-learning platform is clear and understandable, as well as providing easier access to information. In this context, the use of SNTs would be regarded as easy to use if it provides easy access to information and when the platform is clear and understandable.

Perceived ease of use highly determines the intention to adopt a technology. In his study, Cowen (2009) found that the easier a technology is to use, the more useful an individual perceives it to be and therefore his intention to use the technology will increase, therefore, perceived ease of use is a primary determinant of user acceptance and in the context of SNTs, the developer of such platforms should focus their primary resources on system ease of use.

The perceived knowledge one has regarding how to use a technology appropriately highly determines the adoption of those technologies (Rogers, 1995). This is further affirmed by (NTIA, 2002) whose study practically shows that less educated individuals report insufficient knowledge as one of the main reasons that they choose not to use the internet, this perhaps shows that Social Networking Technologies are most likely to be used by the educationists in higher institutions of learning whose knowledge level of the how to use is said to be high (NTIA, 2002). Moreover, theoretical studies show that there is a significant positive relationship between education level and perceived ease of use (Agarwal and Prasad, 1999).

Learning to use an internet technology like SNTs is easy because using such technologies is clear and understandable and it is easy to become skilful at using SNTs (Porter and Donthu, 2006). Furthermore, empirical studies have shown that system features stand up to have the greatest total effect on adoption of a technology (Said, 1997). This therefore suggests that users are driven to accept information technology primarily on the basis of system features and functionality and secondarily by ease of use and friendliness (Said, 1997). The strong positive effect of system features on perceived ease of use perhaps suggests that as SNTs possess rich features, especially a friendly interface and good academic content, the more they are perceived to be easy to use by users. Based on this, it is hypothesized that;

H₁: Perceived ease of use is positively related to SNT Adoption in institutions of higher learning in Uganda.

3.0 METHODOLOGY

3.1 Research Design

For this study, a quantitative cross-sectional survey approach was conducted. This was because of the type of information that was required to test the model, the wide dispersion of respondents across Uganda, confidentiality and privacy issues and therefore, a mail self-administered questionnaire was considered most appropriate.

3.2 Study Population, Sample Size & Sampling Procedure

The total population for this study was 284 institutions of higher learning. This figure was attained from the Uganda National Council for Higher Education records as of 25th August 2015. The institutions of higher learning are categorized into 12 major types namely Public Universities (6), Private Universities (32), public university colleges (9), private university colleges (4), public tertiary institutions (52), private tertiary institutions (102), commercial and cooperative institutions (26), health institutions (23), National teachers colleges (5), other degree awarding institutions (11), Technical colleges (10) and military training institutions (4). This information is shown in the table below;

Table 1: Study Population

S/N	Type	No
1	Public Universities	6
2	Private Universities	32
3	Public University Colleges	9
4	Private University Colleges	4
5	Public Tertiary Institutions	52
6	Private Tertiary Institutions	102
7	Commercial & cooperative colleges	26
8	Health Institutions	23
9	National Teachers Colleges	5
10	Other Degree Awarding Institutions	11
11	Technical Colleges & Survey Institutions	10
12	Military Training Institutions	4
	<i>Total Population</i>	<i>284</i>

Source: Uganda National Council for Higher Education (2015)

The sample size of the population was 166 and it was determined using formula of sample size determination

suggested by Yamane (1967):
$$n = \frac{N}{1 + N(e)^2} \text{ Where:}$$

n = the Sample Size

N = Total Population;

(e) = the Sampling Error

The Yamane formula assumes a normal distribution of the population. The managers of higher institutions of learning are assumed to be normally distributed in terms of the parameters for interpretation of their perceptions of the skills required and applied in practice. The Yamane formula was therefore considered suitable for determining an appropriate sample size.

From the Ugandan Institutions of Higher Learning, the researcher used the stratified sampling technique. This is where a sample is selected for the study from the population, and each member of the population has an equal chance of being chosen at any point during the sampling process. This is because institutions of higher learning are seen as homogeneous with similar management practices.

The response rate was 88%. As presented in table two below.

Table 2: Sample Distribution

Stratum	Sample	Response rate (Freq)
Public Universities	3	3
Private Universities	18	18
Public University Colleges	5	5
Private University Colleges	2	2
Public Tertiary Institutions	30	26
Private Tertiary Institutions	60	52
Commercial & cooperative colleges	15	13
Health Institutions	13	12
National Teachers Colleges	3	3
Other Degree Awarding Institutions	7	5
Technical Colleges & Survey Institutions	7	5
Military Training Institutions	2	2
<i>Total</i>	<i>166</i>	<i>146</i>

Thereafter, simple random sampling was used to select the sample from each stratum. This is because the population of interest was relatively homogeneous and yet simple random sampling technique provides estimates that are unbiased and have high precision in such conditions (Meng, 2013).

3.3 Measurement of Variables

Whereas the TAM model by Davis (1989) has two subscales of perceived ease of use and perceived usefulness, this study relied on the perceived ease of use subscale to measure the construct of perceived ease of use but this subscale was modified to suit this specific study. An example of items adopted from this subscale include; "effort to be skillful" and this was modified into "It will be easy for me to become skillful at using SNTs in education". For SNT adoption, this study used a self-generated scale resulting from extant review of literature. According to Hussain et al (2012), Kingsly et al (2013), Reuben et al (2012), the domains of SNT adoption are create, engage and share user generated content (UGC). An example of items generated for the SNT adoption scale is: "I engage in online discussions on SNTs". All items were later anchored on a five-point Likert scale – strongly disagree to strongly agree.

3.4 Content Validity Index and Reliability Test

Following the administration of the survey, content validity index was used to establish the construct validity of the scales, CVI was found to be greater than 0.70 which is the minimum as suggested by Amin (2007). Internal consistency of the questionnaire was determined by calculating the Cronbach alpha coefficient, reliability estimates were all greater than .70 which is the minimum as suggested by Nunnally (1978). The validity and reliability of the variables is indicated in table 3 and table 4 respectively;

Table 3: Content Validity Index

S/N	Variable	CVI	No of Items
01	Perceived Ease of Use	.78	6
02	SNT Adoption	.83	8

Source: Primary Data

Table 4: Reliability Test

S/N	Variable	Cronbach Alpha(α)	No of Items
01	Perceived Ease of Use	.833	6
02	SNT Adoption	.827	8

Source: Primary Data

4.0 RESULTS

In order to test the formulated hypothesis, we use the Pearson(r) correlation analysis and regression analysis to ascertain the predictive effect of perceived ease of use on SNT adoption and the results are displayed in table 4 and table 5 respectively;

Table 4: Correlation Analysis

S/N	Variable	1	2
1	SNTA	1	
2	PEOU	.784*	1

*N=146 **P < 0.01 Level (1 – tailed)*

Source: Primary Data

Key: SNTA=Social Network Technology Adoption, PEOU= Perceived Ease of Use

Table 5: Results of Simultaneous Regression Analysis of PEOU on SNT Adoption

Variable	β	T	P
Constant		-.238	0.812
PEOU	.784	15.167	0.01**

R = .784

R² = .615

Adjusted R² = .612

F = 230.031

N = 146; **p < .01

Source: Primary Data

Key: PEOU = Perceived Ease of Use

From table 4 above, at a preliminary level, correlation results indicated that perceived ease of use is positively and significantly related to SNTs adoption ($r = .784$; $p < 0.01$). This is an indication that a positive change in perceived ease of use is associated with a positive change in SNT adoption. Further evidence is adduced by the results of regression analysis as displayed in table 5. Results show that approximately 62 per cent of the total variance in SNT Adoption is explained by perceived ease of use ($R^2 = .615$; $p < .01$). The regression coefficient of perceived ease of use was significant ($\beta = .784$, $t = 15.167$; $p < .01$). On account of this, it can be adduced that Perceived Ease of Use is positively related to adoption of SNTs in institutions of higher learning in Uganda.

5.0 DISCUSSION

The results of this study have provided some theoretical contributions and practical interventions designed at increasing use of SNTs in institutions of higher learning for academic purposes. Regarding the theoretical contributions, previous studies have dwelt on friendship initiation and others have been in the manufacturing sector, marketing and communications. This research provides an insight into the influence of perceived ease of use on SNT adoption in institutions of higher learning for academic purposes an area that has been less considered. Further, this research is one of the first studies to align perceived ease of use as a significant predictor of SNT adoption for academic use in institutions of higher learning in Uganda.

Findings of this study also provide some implications for practitioners. Firstly, findings of this study have found out that a positive change in Perceived ease of use is associated with a positive change in SNT adoption. This means that managers in higher institutions of learning in Uganda agree that their adoption of social networking technologies as a teaching platform highly depends on how they perceive ease of use of such technologies by their users and themselves. These findings are similar to those from (Davis, 1989; Tawee, 2012; Jeff et al., 2013; Munguatocha et al., 2011) who all found that for successful adoption of a technology, the acceptor must perceive the technology as free of effort to learn and use.

Secondly, findings of this study suggest that institutions of higher learning should develop more user-friendly and user-oriented e-learning content on these SNTs for successful adoption, and nowadays, learning to use a technology is normally considered easy and the benefits from learning through internet are already well known to universities. Moreover, (Park, 2009) found that perceived ease of use has a significant positive effect on the intention to use eLearning in a university setting.

Thirdly, based on these results, improvement in SNT adoption in institutions of higher learning will require that management devise and nurtures a conducive learning environment characterized by training users about how easy it is to operate SNTs, make SNTs easily and freely accessible so as for the users to have a clear understanding of how easy it is to adopt SNTs in institutions of higher learning in Uganda.

6.0 CONCLUSIONS AND RECOMMENDATIONS

From this study, it emerged that both on- and off-line support such as guiding the users on how to upload notes on social networking sites is useful for SNT adoption in higher institutions of learning in Uganda. On- and off-line support appears essential components in as far as adoption of SNTs is concerned. This is because it increases operational skills specifically in teaching and learning situations.

The findings from this study help lecturers and students to conceptualize the aspects of technology-enhanced tools and realization of the potential of the use of social networking technologies in the lecturing and learning contexts. Therefore, Institutions of higher learning should undertake a deliberate policy to develop and adopt technological innovations that are considered to be free of effort to learn and use, clear and understandable so as to provide flexibility in actual system usage.

This study was limited to managers of institutions of higher learning in Uganda. Further research is recommended to investigate students and the teaching staff about social networking technologies adoption because they are the actual users who implement the use of social networking technologies in higher institutions of learning in Uganda.

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