Enhancing Social Networking Technologies Adoption through Perceived Usefulness: The setting of Ugandan Institutions of Higher Learning

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ABSTRACT — Social Networking Technologies (SNTs) play a major role in education by improving student academic performance through informal learning. The purpose of this study was to examine the influence of Perceived Usefulness 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 Perceived Usefulness construct of the Technology Acceptance Model. Results of correlation and regression analysis indicated that a positive and significant relationship exists between Perceived Usefulness and SNTs adoption. These findings have theoretical implications for models of SNTs adoption and practical interventions designed at increasing use of SNTs. The findings of this study suggests that managers of higher institutions of learning should advice users on the usefulness of SNTs adoption in learning so as to improve on their academic job performance, increase productivity and enhance effectiveness in teaching and learning in institutions of higher learning in Uganda.

Keywords — Social Networking Technologies, Perceived Usefulness, Technology Acceptance Model, User Generated Content, SNT Adoption

1. INTRODUCTION

The explosive increase of Internet users has led to intense shifts in the way of conducting business. From our daily lives to education activities, the Internet has profoundly impacted and changed the way business is done. Social Networking Technologies (SNTs) presents enormous opportunities for both learners and instructors in the world by providing an online presence throughout the day on the internet (Park, 2009). This comes with benefits like 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, 2010) with an aggregate effect of improved academic performance (Zanamwe et al., 2013).

According to recent figures, while 74% of all internet users use SNTs, in the education sector, more than 78% of the college students in the world are using SNTs (Pew Research Center, 2014) Further, extant literature shows that students...
who use SNTs improve in their communication, technology and research skills (Zanamwe et al., 2013), assist in helping student connection with application concept and increasing student engagement in course material (Greenhow and Gleason, 2012; Junco, Elavsky and Heiberger, 2012). This is an indication that social networking technologies contributes to a student’s life experience, knowledge and skills. This shows the importance of SNTs with in the education sector.

Despite the importance of SNTs adoption, 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 sociolization 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.

The technology adoption literature is rife with studies that demonstrate the importance of Perceived Usefulness 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 (Rouis, 2012; Sakarkar et al., 2014; Junco, 2012) 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 the e-commerce sector (Wang et al, 2012; Lee et al, 2000; 2000; Khayati, 2013; Gary, 2015; Chung et al, 2000; Kaasinen, 2005). While SNTs has proliferated with the growth of the Internet, there have been insufficient empirical research efforts concerning its adoption in Uganda’s institutions of higher learning with the only study being by (Munguatosha et al., 2011). This is ideally a knowledge gap that this study intends to fill.

Arising from the review of literature, we believe that there may be some valid factors to explain the SNT’s adoption in institutions of higher learning. In this study, we examine the effect of Perceived Usefulness which is derived from the theoretical foundations of prior research in the theory of the technology acceptance model. Reliance on Perceived Usefulness by organizational managers has been argued to predict technology adoption (Zanamwe et al., 2013; Kingsly et al., 2013; Munguatosha et al., 2011; Bagozzi, 2007; Davis, 1989; Venkatesh & Balla, 2000; Lee et al., 2000). We therefore demonstrate not only how the contextual construct make educators adopt or reject SNTs as a dependable teaching platform, but also how its different facets influence the educator’s adoption behaviour of the Social Networking Technologies.

The domains of Perceived Usefulness such as improved job performance, increased productivity, increased effectiveness and increased efficiency in teaching and learning using SNTs (Davis, 1989; Henderson and Divett, 2003) may therefore enable educators to view SNTs as useful that consequently aide in easy SNTs adoption.

The Perceived Usefulness domains such as improved job performance, increased productivity, increased effectiveness and increased efficiency in teaching and learning are illustrated in figure one below by the arrow that emanates from Perceived Usefulness construct to SNTs adoption. It is apparent from this preliminary work and the conceptual model presented that the study of Perceived Usefulness will have implications for both academia and practioners. Figure one below illustrates a framework to guide this study;
2. LITERATURE REVIEW

Davis et al., (1989) defined Perceived Usefulness as “the extent to which using a particular system will help them to perform well”. Yang and Yoo (2004) also found that Perceived Usefulness is related to the user’s belief on the system’s ability to improve performance. This therefore implies that the use of SNTs is based on the perception that it offers a collection of tools that learners can mix and match to best suit their individual learning styles and increase their academic success. In a workplace for instance, top management constantly adopt new systems that will only increase employee’s productivity and performance. Venkatesh & Davis (2000) provide evidence of this that the most important determinant of an employee’s attitude towards the adoption of a new technology is one’s perception of usefulness about the technology (Perceived Usefulness), typically explaining 30% to 35% of the variance observed in behavioral intent. Perceived Usefulness has a significant effect on attitude towards usage. Shroff et al (2011) explains that when students perceive the e-portfolio system as one that will improve their academic performance, they may have a favorable attitude towards the usefulness of the system and therefore intention to use the system increases. Further, Shen et al., (2006) posits that educators may influence students’ Perceived Usefulness of the system by delivering useful content to students on the system which might help them to solve technical problems and improve on their academic performance.

Rose & Fogarty (2006) assert that for managers of organizations to acquire knowledge and experience of a particular technology, they have to change their perceptions of the usefulness of such technologies and therefore communicating the benefits of using SNTs will enhance the senior managers’ confidence and thus their attitude and acceptance of SNTs in teaching and learning in institutions of higher learning in Uganda. Further, knowledge about how technologies operate can reduce seniors’ fear of performance and financial risk (Rose & Fogarty, 2006) hence this would increase adoption of SNTs.

Wang et al (2012) posits that in a mobile education environment, SNTs would provide users with timely, convenient and personalized information, SNTs meets users’ multi-level needs for information, and helps users improve work efficiency or complete tasks that would be improbable when using the traditional teaching methods. Further, Perceived Usefulness induced by the typical traits (mobility, personalization and location) of an eLearning system is advantageous to intensifying users’ perception of the value of SNTs in institutions of higher learning (Ko et al., 2009). Based on this, it is hypothesized that:

H1: Perceived Usefulness is positively related to SNT Adoption in institutions of higher learning in Uganda.
3. 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. A total sample of 166 institutions of higher learning was generated using the formula suggested by Yamane (1967):

\[ n = \frac{N}{1 + N(e)^2} \]

Where:
- \( n \) = the Sample Size
- \( N \) = Total Population;
- \( e \) = the Sampling Error

This is because the Yamane formula assumes a normal distribution of the population (Yamane, 1967). The Yamane formula was therefore considered suitable for determining an appropriate sample size.

From the Ugandan Institutions of Higher Learning, a stratified sampling technique was used to select institutions from the institutional categories by the Uganda National Council for Higher Education. Thereafter, I used simple random sampling to ensure that each participating institution had an equal chance of being chosen. 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). An aggregated sum of one hundred and forty-six questionnaires was retrieved from the field indicating a response rate of 88%. The unit of inquiry was the senior managers of institutions of higher learning and the unit of analysis was the individual institution of higher learning.

3.3 Measurement of Variables

Whereas the Technology Acceptance Model (TAM) by Davis (1989) has two subscales of perceived ease of use and Perceived Usefulness, this study relied on the Perceived Usefulness subscale to measure the construct of Perceived Usefulness but this subscale was modified to suit this specific study. An example of items adopted from this subscale include: "increased job performance" and this was modified into "In this institution, using SNTs will improve my Academic Job Performance".

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) and Reuben et al (2012), the domains of SNT adoption are create, engage and share user generated content. 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; content validity index 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>
<thead>
<tr>
<th>S/N</th>
<th>Variable</th>
<th>CVI</th>
<th>No of Items</th>
</tr>
</thead>
<tbody>
<tr>
<td>01</td>
<td>Perceived Usefulness</td>
<td>.79</td>
<td>6</td>
</tr>
<tr>
<td>02</td>
<td>SNT Adoption</td>
<td>.83</td>
<td>8</td>
</tr>
</tbody>
</table>

Source: Primary Data
4. 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 Usefulness on SNT adoption and the results are displayed in table 4 and table 5 respectively:

Table 4: Correlation Analysis

<table>
<thead>
<tr>
<th>S/N</th>
<th>Variable</th>
<th>1</th>
<th>2</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>SNTA</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>PUSF</td>
<td>.734**</td>
<td>1</td>
</tr>
</tbody>
</table>

Data Source: Primary Data

Key: SNTA=Social Network Technology Adoption, PUSF= Perceived Usefulness

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

<table>
<thead>
<tr>
<th>Variable</th>
<th>β</th>
<th>T</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td></td>
<td>5.988</td>
<td>0.01**</td>
</tr>
<tr>
<td>PUSF</td>
<td>.734</td>
<td>12.978</td>
<td>0.01**</td>
</tr>
<tr>
<td>R = .734</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>R² = .539</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Adjusted R²= .536</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>F = 168.431</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: Primary Data

Key: PUSF = Perceived Usefulness

From table 4 above, at a preliminary level, correlation results indicated that Perceived Usefulness is positively and significantly related to SNTs adoption (r = .734; p <0.01). This is an indication that a positive change in Perceived Usefulness 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 54 per cent of the total variance in SNT Adoption is explained by Perceived Usefulness (R² = .539; p < .01). The regression coefficient of Perceived Usefulness was significant (β = .734, t = 12.978; p < .01). On account of this, it can be adduced that Perceived Usefulness is positively related to adoption of SNTs in institutions of higher learning in Uganda.

5. DISCUSSION

Perceived Usefulness was found to have a significant direct effect on the adoption of SNTs in higher institutions of learning in Uganda. According to the original Technology Acceptance Model, Perceived Usefulness is hypothesized to affect intention to use a particular technology and it relates to what users perceive as the job performance benefits of using such a technology.
This study found out that managers in higher institutions of learning in Uganda believe that SNTs adoption would be more useful in their job performance if successfully adopted for academic use. This might be because these managers want to adopt SNTs for they think SNTs experience will be beneficial for future job preparation and accomplishing, improved job performance from their workers and extended working hours for their workers and clients. Or, they feel it would give them competitive edge over other institutions engaged in e-learning in terms of academic delivery.

These findings are consistent with literature (Agarwal & Prasad, 1999; Davis, 1989; Venkatesh & Davis, 2012; Venkatesh et al., 2003; Venkatesh & Davis, 2000; Gulbahar & Guven, 2008; Park, 2009). This stream of literature provides evidence of the significant effect of Perceived Usefulness on intention to use a technology. The Perceived Usefulness-intention relationship is strongly based on the idea that, people form intention toward behaviors they believe will increase their system use, over and above whatever positive or negative feeling may be evoked toward the behavior.

These revelations further confirm studies by Nicolaou & McKnight (2006) which supports the view that stressing Perceived Usefulness leads to intention to use improvements. The managerial implication of these findings seem clear, the changes of intentions of customers can be enhanced through the adoption of particular systems that customers are willing to use for the transactions. Another study by Buabeng (2012) found that Perceived Usefulness is an important factor in determining the adaptation of innovations. As observed by (Davis, Bagozzi & Warshaw, 1989), a person’s willingness to transact with a particular system is already considered as Perceived Usefulness. It shows that user’s intention to adopt a technology is determined by perceptions of usefulness of the technology.

Based on these results, improvement in SNT adoption requires that management of institutions of higher learning make use of SNTs to accomplish academic tasks more quickly and advice users on the usefulness of SNTs adoption in learning so as to improve on their academic job performance, increase productivity and enhance effectiveness in teaching and learning in higher institutions of learning in Uganda.

6. CONCLUSION AND RECOMMENDATIONS

From this study, it emerged that perception of SNTs usefulness is crucial in its adoption in institutions of higher learning in Uganda. This is because a user’s perception of the usefulness of a technology eases management’s ability to accomplish academic tasks more quickly. This is useful in easing academic job performance which is important in increasing productivity, service quality and enhance job effectiveness.

Managers of higher institutions of learning should therefore advice users on the usefulness of SNTs adoption in learning so as to improve on their academic job performance, increase productivity and enhance effectiveness in teaching and learning in institutions of higher learning in Uganda.

7. REFERENCES


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