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December 2014

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Ajoye, Molola Bosede Miss, "INFORMATION SYSTEMS USER SATISFACTION: A SURVEY OF THE POSTGRADUATE SCHOOL PORTAL, UNIVERSITY OF IBADAN, NIGERIA" (2014). *Library Philosophy and Practice (e-journal)*. 1192.
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INFORMATION SYSTEMS USER SATISFACTION: A SURVEY OF THE POSTGRADUATE SCHOOL PORTAL, UNIVERSITY OF IBADAN, NIGERIA

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The study was designed to investigate how information system IS measures (such as system quality, information quality, service quality, technological/infrastructural issues, users' IT self-efficacy) influence user satisfaction of the university of Ibadan postgraduate school portal using a conceptual model adapted from Delone and McLean (2003). A descriptive survey was employed as the research design in the study. The literature review covered information system IS, web portal and User satisfaction. Self-structured questionnaires based on the adapted model were administered as data collection instrument. A sample size of 385 students was drawn and same copies of questionnaire were distributed proportionally to postgraduate students across the 19 faculties of the postgraduate school. The data was analysed using descriptive and inferential statistics. The web portal initiative is a good step in the right direction and will subsequently yield greater dividend and better user satisfaction for it users if some of the impeding factors to user satisfaction were adequately addressed. The result shows that system quality (.000), information quality (.008), service quality (.000) and infrastructural issues (.031) were significant predictors of users satisfaction, however, none of the IS measures predicted favourable on users' IT self-efficacy. The study further concludes and recommended that the stakeholders in the

university should implements an effective IT policy that would instil the efficient management of the postgraduate school web portal in addition to large scale investment in internet infrastructure for maximum user satisfaction. Further studies could focus on using other information systems model to measure user satisfaction.

Key words: Information System (IS), Web Portal, User Satisfaction, User's Self-efficacy.

INTRODUCTION

The progress in information and communication technologies and the birth of the internet has changed the end user computing experience and environment. This advancement has changed the way of delivering information and services. Information systems can now be web-enabled, unlike the traditional stationary information systems. Web portals are a part of this advancement. A Web portal is a gateway to information and services from multiple sources in a unified way, using a single, unique user interface (Tatnall, 2005). A Web portal usually features specific functions, such as search mechanisms, access to databases, user registration and personalization options. The use of web portals offered universities and postgraduate education huge opportunities for expansion, introduction of new services and development of both qualitative and quantitative ways of delivering information and services. More also, the need to satisfy the information requirements of postgraduate students in the University of Ibadan has brought about the large scale investment in the Postgraduate School web portal. There is therefore need on the part of the stakeholders to justify the huge investment in this area by measuring the impact of the information system on end-user satisfaction. The end-user satisfaction is regarded as the individual's attitude toward computer uses, or related activities required to perform tasks in an organization (Rainer and Harrison, 1993).

Aim of the Study

The major aim of this study was to investigate how information system IS measures such as system quality, information quality, service quality, technological/infrastructural issues, users' IT self-efficacy influence user satisfaction of the university of Ibadan postgraduate school web portal.

METHODOLOGY

The primary data were collected through the administered questionnaires, responses were collected, and the results were analysed.

Research Design

The research design adopted for this study is survey. It involves the systematic collection of information from the postgraduate school portal users who are postgraduate students. Their opinions are expected to provide an understanding of the assessment of the user satisfaction level of the portal system.

Sample and sampling techniques

This study used proportional stratified sampling technique to select a sample size of 385 postgraduate students. This represents 5% of the population (7,688). This number is considered sufficient due to time and cost factors. Proportional stratified sampling strategy is chosen for this study since each faculty represent a stratum and proportionality is applied so that the same percentage of elements from each stratum is drawn. Simple random sampling was used to select the respondents from each stratum. This probabilistic approach ensures that every element in the population has equal chance of being included in the study.

ResearchInstrument

A self-structured questionnaire built from the constructs of DeLone and McLean (2003) model

was used to collect the primary data from the respondents of the study. The questionnaire was sectioned into five parts.

Section A: This section collects demographic information of the respondents.

Section B: This section contained questions on the user's perception of system quality of PG school web portal.

Section C: This section contained questions on the user's perception of information quality of PG school web portal.

Section D: This section contained questions on the user's perception of service quality of PG school web portal.

Section E: This section contained questions on the user's perception on technology and infrastructure issue affecting the PG school web portal.

Section F: This section contained questions on the user's I.T self-efficacy.

Section G: This section contained questions on the user's satisfaction affecting the PG school web portal.

Validity of instrument

The questionnaire used for this study was designed based on the study's conceptual model by the researcher. Subsequently the questionnaire was critically reviewed to ensure its face and content validity.

Reliability of Instrument

The variables for each of the construct used in the study instrument were subjected to a reliability test using the Cronbach alpha scale, the resulting Cronbach alpha coefficient values were higher than the 0.6 threshold with the overall user satisfaction construct been the highest, this further ascertain the reliability of the measuring instrument.

Method of data collection

The questionnaires were distributed to the sample size of the postgraduate students in every faculty of the University of Ibadan. The researcher and two of her assistants helped in the administration of the questionnaires.

PRESENTATION OF RESULTS AND DISCUSSION

The ever increasing budget on information technology (IT) by organizations even in the face of potential economic downturns are well documented in literature Kanaracus, (2008), despite pressures to cut costs. This has necessitated the need for organizations to measure and examine the benefits and costs of technology. According to Petter et al., (2008), the impacts of IT are often indirect and influenced by human, organizational, and environmental factors; therefore, measurement of information systems (IS) success is both complex and illusive. There are IS that range from hedonic, developed for pleasure and enjoyment, to utilitarian, developed to improve individual and organizational performance Van der Heijden, (2004). Organizations focus on developing, using, and evaluating utilitarian IS.

There is an excess of utilitarian IS used in organizations, such as decision support systems, computer-mediated communications or web portal system, e-commerce, knowledge management systems, as well as many others. However, this study considered the web portal utilitarian

information system and how users (postgraduate students) perceive its functionality in satisfying their demands on the system. The results in the proceeding tables show the wholesome significance of the information system dimensions on user satisfaction and how IT self-efficacy mediates such relationships. The discussion is based on the outcomes of these relationships. From the findings, the roles of information system measures in depicting user satisfaction were shown with different level of issues prevailing on each of the constructs.

Table 1 Descriptive Result and Factor Loadings for IS Measures

Factors	Mean	Std. Deviation	F1	F2	F3	F4
System Quality						
U.I PG School web portal is easy to use	1.34	0.560	0.726			
I am satisfied with the speed of the web portal	1.76	0.627		-0.761		
I am satisfied with how quickly the web portal loads pages and images	1.73	0.662			-0.710	
The user interface of PG school web portal measures up to global standard	1.90	0.709				0.700
Information Quality						
The information on the PG school portal is always timely (timeliness)	1.75	0.705	-0.759			
The information on the PG school portal is always accurate (accuracy)	1.73	0.938		-0.704		
The information on the PG school portal is usually relevant (relevance)	1.26	0.570			0.704	
Service Quality						
The support staff of UI Pg School are technically competent (competence)	1.83	0.758	0.660			
The support staff of U.I. PG school are fast in attending to complaint (speed)	1.93	0.544		-0.804		
The support staff of U.I. PG school are very reliable (reliability)	1.95	0.707			0.838	
Technological and Infrastructural Issues						
Unstable power supply is a major challenge to user satisfaction	1.32	0.640	-0.672			
The PG school portal is very slow and need to be upgraded	1.40	0.685		-0.778		
Lack of sufficient internet facilities around the university limits user satisfaction	1.27	0.579			0.719	

I.T Self Efficacy						
I find it easy to use the PG school web portal because I am computer literate	1.20	0.516	0.694			
I can search for information on the internet	1.25	0.566		0.916		
I can create groups on yahoo	1.59	0.812			0.765	
User Satisfaction						
I am satisfied with the overall system quality of P.G. school web portal	1.78	0.666	-0.700			
I am satisfied with the overall information quality of U.I. school web portal	1.66	0.668		0.707		
I am satisfied with the overall service quality of U.I. school web portal	1.83	0.671			0.851	

Table 2 Regression result of Information System and Users' Satisfaction

Dependent Factor : User Satisfaction			Standardized Coefficient	T	Sig
Independent factors :	B	Std Error	Beta		
System Quality	0.507	0.075	0.380	6.781	0.000
Information Quality	0.199	0.074	0.153	2.669	0.008
Service Quality	0.260	0.063	0.223	4.106	0.000
Infrastructure and Tech Issues	-0.153	0.070	-0.111	-2.174	0.031
IT Self Efficacy	0.026	0.062	0.024	0.418	0.676

Table 3 Regression result of Information System and IT Self-Efficacy

Dependent Factor : I.T Self-Efficacy			Standardized Coefficient	t	Sig
Independent factors :	B	Std Error	Beta		
System Quality	0.078	0.061	0.053	0.779	0.437
Information Quality	0.059	0.078	0.053	0.759	0.449
Service Quality	0.035	0.066	0.035	0.526	0.600
Infrastructure and Tech Issues	0.138	0.073	0.118	1.903	0.058

Tables 2 and 3 presents the results of the study based on the adopted research model. From table

1 the beta values show the strength of information system measures (system quality 0.38, information quality 0.153, service quality 0.223) showing good level of significance at 0.00

levels. While technological and infrastructural issues (-0.111) and I.T self-efficacy (0.024) influence on user satisfaction does not show a good level of significance. The result shows that system quality has the highest impact on user satisfaction of the web portal, while technological and infrastructural issues is the least factor in the perception of postgraduate users. On the other hand, all the information system predictors on I.T self-efficacy showed a weak relationship in predicting user's level of satisfaction of the web portal as shown by the values in table 3.

Research findings

Based on the data gathered from the respondents, the following were the findings:

1. The influence of system quality on user satisfaction was very strong. Thus the system needs a critical analysis and proper adjustment to further enhance users experience and satisfaction.
2. The influence of information quality on user satisfaction was also strong, with most respondents positively affirming that most or all their information needs were adequately taken care of. Nevertheless the management of the web portal system should not rest on their oars but keep the information quality of the system always up to date and adequate.
3. Service quality has a mixed effect on user satisfaction from the findings. This is due partly to its multi-dimensional characteristics as earlier discussed.
4. The infrastructural issues bogging user satisfaction experience of the web portal system is typical of the Nigerian environment. And it is high time we find a permanent and sustainable solution to poor power supply and internet connectivity.
5. The user IT self-efficacy also generates a mixed result in examining its influence on user satisfaction of the web portal system, nonetheless every postgraduate student should be

computer literate and possess some level of It knowledge and confidence to be able to maximize the benefits of information system such as the web portal examined in this study.

DISCUSSION OF THE FINDINGS

System Quality and User satisfaction

Perceived ease of use is the most common measure of system quality due to the popularity of TAM in research (Davies, 1989). The findings of this study further reaffirm the importance and significance of this construct in a contemporary information system in the Nigerian academe. The culture that precedes people's expectation of an information system demands that systems should be flexible and easy to use even to a novice. In addition, highly rated information system are expected to be reliable, user friendly, fast response, while also offering every functionality that places it above or at least at par with competing systems elsewhere. Ease of use could also be a relative term especially where one set are more technology savvy than the other.

Nevertheless, this study confirms the universality of the system quality attribute in predicting IS performance, although the influence of system quality of the web portal on user satisfaction is poor. Similarly, many studies have observed the importance of system quality on user satisfaction on different types of information systems. Gelderman, (2002) found system quality to be significantly related to user satisfaction of a management information system. Likewise, in a knowledge management system, system quality was also found to be strongly related to user satisfaction (Kulkarni et al., 2006; Wu & Wang, 2006; Halawi et al., 2007). In a study by Palmer (2002) on web sites; system quality, measured as reliability and download time, was significantly related to user satisfaction.

Information Quality and User satisfaction

The study observed that information quality on user satisfaction of the PG school web portal, measured in terms of understand-ability, completeness, timeliness, currency, accuracy, and relevance of the information it contains is significant. These attributes underlie the perception of users and form criteria for judging system efficiency. Findings from this study show that the information quality on the web portal has a good influence on user satisfaction. Most of the users information needs were adequately attended to. The relationship between information quality and user satisfaction are also strongly supported in literature (Iivari, 2005; Wu & Wang, 2006). Studies have found a consistent relationship between information quality and user satisfaction at the individual unit of analysis (Rai et al., 2002; McGill et al., 2003; Wixom & Todd, 2005; Kulkarni et.al., 2006; Chiu et.al., 2007; Halawi et.al., 2007). Studies specifically examining the information quality aspects of Web sites, such as content and layout, have found significant relationships between these constructs and user satisfaction (Palmer, 2002). The findings of this study on PG school web portal system is consistent with studies already observed in literature and confirms the importance of information quality in the Nigerian information system environment.

Service Quality and User satisfaction

This study found service quality to be a significant attribute in measuring user satisfaction of U.I PG school web portal information system, and its resulting effect on user satisfaction is average. Service quality is measured in terms of performance of service personnel in response to complaint and issues arising from system abnormalities. The responsiveness of support staff goes a long way in addressing problems encountered by users. In addition to this is the technical

competence of the support personnel, which is equally vital in addressing complexities associated with system attributes.

The value of empathy and speed of response are vital parts of service expected by the users. The latter emphasizes that the response time to complaint be short while empathy encourages the value of respect and humility in attitude of the support personnel. Moreover, several studies have examined the relationship between service quality and user satisfaction; however, the findings of these studies suggest mixed support for this relationship. The inconsistent findings may be due to the multiple methods adopted by researchers in measuring this construct. Some researchers have looked at service quality by examining the characteristics of the support personnel; however, examining the relationship between personnel characteristics and user satisfaction has produced mixed results.

A study by (Leonard-Barton & Sinha, 1993) found that the technical performance of the developers (based on their responsiveness to problems) was positively related to user satisfaction. Yoon et al. (1995) had a similar result in that developer skill had a significant effect on user satisfaction of expert systems. Examining service quality more broadly, rather than just in terms of personnel and training, there is still mixed support for its effect on user satisfaction. Another study of university support services found a relationship between service quality and user satisfaction and identified software upgrades, staff response time, and documentation of training materials as the service quality factors having the most influence on user satisfaction (Shaw et. al., 2002).

Technological and Infrastructural Issues and User satisfaction

This study revealed the significant effect of technological and infrastructural issues on users' satisfaction of U.I PG school web portal which was negative. The significance of this construct

in measuring user satisfaction in the Nigerian environment is greatly emphasized, partly as a result of lack of standardized and world class infrastructural deployment and on the other hand, due to the weak maintenance culture peculiar with the Nigerian system.

This unique characteristics of the Nigerian situation however is never pleasant with information system users, since the seemingly culture cannot replace for efficiency in service quality expectation of the system user. The importance of stable power supply is sublime for information system efficiency just as infrastructural provision; especially internet facilities which usually would enhance positively the experience of users.

Infrastructural and technological issues are key determinants of satisfaction in the perception of users of information system as revealed in this study. This finding is consistent with (Cahill et al., 1990; Saunders & Jones 1992; Grover, 1993; King & Teo, 1994; Whyte & Bytheway, 1996) on the significance of technological dimensions on IS success. Infrastructural facilities were found to be positively related with IS success and adoption (Grover, 1993). In an empirical study by Grover 1993, IS infrastructure was found to be one of the top predictors of IS success among several factors investigated. In a related study, Wixom & Watson (2001) found that the technology used for development was associated with technical implementation success. These discussions gives credence to our finding that technological and infrastructural issues are positively correlated, hence, good predictor of information system user's satisfaction.

Information Systems Measures and User's I.T self-Efficacy

The relationships between of IS measures and IT self-efficacy of postgraduate students was found to be weak and insignificant. Self-efficacy, according to Kinzie et.al (1994) reflects an individual's confidence in his/her ability to perform the behaviour required to produce specific

outcome and it's thought to directly impact the choice to engage in a task, as well as the effort that will be expended and the persistence that will be exhibited," While computer self-efficacy is a specific type of self-efficacy. Specific self-efficacy is defined as belief in one's ability to "mobilize the motivation, cognitive resources, and courses of action needed to meet given situational demands" (Wood & Bandura, 1989).

There is however, scarcity of literature that examined the influence of IT self-efficacy on IS measures. This is probably due to the weakness of IT self-efficacy in predicting IS performance as observed in this study. The relative weakness of IT self-efficacy could be due to students' reluctance to reveal frankly their IT self-efficacy for this study, being reluctant to show their own weakness in order to stay on par with other students. In other cases, several studies have demonstrated the effect of computer self-efficacy on computer related behaviours. More also, computer self-efficacy has been shown to be positively related to performance during computer training (Webster & Martocchio, 1992). Although these researchers have suggested that students' IT self-efficacy is a strong predictor of performance and not user satisfaction as this present study shows that students' IT self-efficacy is a relatively weak factor due to reasons already mentioned above.

Conclusion

The benefits of the investment in the U.I. PG school information system web portal was weighed against users' assessment of the portal's attributes; namely system quality, information quality, service quality and technological and infrastructural issues. The study found all the information system attributes to significantly predict user satisfaction, however, the same measures did not predict significantly on users satisfaction on account of users' IT self-efficacy. Furthermore it

observed that infrastructural issues contributed negatively to users' satisfaction of the web portal. The findings of this study are a signal on the need for the university authority to take proactive measures through timely maintenance and upgrade of the system, and addressing the technological and infrastructural impediments observed in the study. Based on the findings from this study the following recommendations are made:

1. Since system, service and information qualities were significant to users' satisfaction; the University authority should implement and enforce an IT policy that will ensure the efficient management, timely maintenance and upgrade of the information system to maximize users' satisfaction.
2. And since the study observed that technological and infrastructural issues were impediments to user satisfaction; the University authority should consider the provisioning of autonomous power plant, in addition to large scale investment in internet infrastructure to a world class standard as well as the wholesome availability of internet services to all students in the university community.
3. In order to maximize user satisfaction, stakeholders in the university should implement an effective IT policy that would ensure training of technical and support staff so as to ensure the effective management of U.I. web portal.

Conflict of Interests

The authors have not declared any conflict of interests.

REFERENCES

Cahill, A.G., Stevens, J.M., and LaPlante, J.M. (1990). The utilization of information systems technology and its impact on organizational decision-making. *Decision Sciences* 12 (1), 53-79.

Davis, F. D. (1989). Perceived usefulness, perceived ease of use, and user acceptance of information technology. *MIS Quarterly*, 13(3), 319-340.

DeLone, W. H and McLean, E.R (2003) ."The DeLone and McLean Model of Information Systems Success: A Ten-Year Update", *Journal of Management Information Systems* 19 (4), pp. 9- 30.

Gelderman, M. (2002). Task difficulty, task variability and satisfaction with management support systems. *Information & Management* 39(7), 593–604.

Grover, V. (1993). An empirically derived model for the adoption of customer-based inter organizational systems. *Decision Sciences*, 24(3), 603-639.

Halawi , L.A., McCarthy, R.V. and Aronson J.E. (2007) An empirical investigation of knowledge-management systems' success. *The Journal of Computer Information Systems* 48(2), 121–135.

Kanaracus, C. (2008). Gartner: global IT spending growth stable. *InfoWorld* April 3, 2008.

King, W.R., Teo, T.S.H., (1994). Facilitators and inhibitors for the strategic use of Information Technology. *Information & Management*, 27, 71-87.

Kinzie, M. B., Delcourt, M. A. B., and Powers, S. M. (1994). Computer technologies: Attitudes and self-efficacy across undergraduate disciplines. *Research in Higher Education*, 35, 745-768.

Kulkarni, U.R., Ravindran, S. and Freeze, R. (2006) A knowledge management success model: theoretical development and empirical validation.. *Journal of Management Information Systems*. 23(3), 309–347.

Leonard-Barton, D. and Sinha, D.K. (1993) developer–user interaction and user satisfaction in internal technology transfer. *academy of management journal* 36(5), 1125–1139.

Petter, S., DeLone, W. and McLean, E. (2008). Measuring Information Systems Success models, dimensions, measures and interrelationships. *European Journal of Information System* 17, 236-263.

Palmer, J. (2002). Website usability, design and performance metrics. *Information Systems Research*, 13: 2.

Rainer, R. Kelly., and Harrison, Allison W. (1993). Toward Development of the End User Computing Construct in a University Setting. *Decision Science*, 24(1), 1187-1202. *International Journal of Business and Management* January, 2010.

Saunders, C.S. and Jones, J.W. (1992). Measuring Performance of the Information Systems Function. *Journal of Management Information Systems*, 8(4), 63-73.

Shaw, N.C, DeLone W.H. and Niederman, F. (2002) Sources of dissatisfaction in end-user support: an empirical study. *The DATA BASE for Advances in Information Systems* 33(2), 41–56.

Tatnall, A. (2005). *Web portals - The new gateways to Internet information and services*. Hershey, PA:Idea Group Publishing.

Van Der Heijden, H. (2004). User acceptance of hedonic information systems. *MIS Quarterly* 28(4), 695–704.

Whyte, G. and Bytheway, A. (1996). Factors affecting information systems' success. *International Journal of Service Industry Management*, 7(1), 74-93.

Wixom, B. and Watson, H. (2001). An Empirical Investigation Of the Factors Affecting Data Warehousing Success. *MIS Quarterly*, 25(1), 17-32.

Wu, J.H. and Wang, Y.M. (2006) Measuring KMS success: a respecification of the DeLone and McLean model. *Information & Management* 43(6), 728–739.

Wood, R., and Bandura, A. (1989). Impact of conceptions of ability on self-regulatory mechanism and complex decision making. *Journal of Personality and Social Psychology*, 56 (3), 407-415.

Yoon Y, Guimaraes, T. and O'neai Q. (1995). Exploring the factors associated with expert system success. *MIS Quarterly* 19(1), 83–106.

