

Undergraduate Students' Satisfaction with the Use of Web Portals

Adeyinka Tella, Department of Library and Information Science, University of Ilorin, Nigeria

M. T. Bashorun, Department of Library and Information Science, University of Ilorin, Nigeria

ABSTRACT

This study examined undergraduate students' satisfaction with web portals and considers the benefits of using the portal and the problems associated with the use of portal. A pure quantitative method using descriptive survey approach is adopted. A questionnaire was used for data collection. Collected data was analysed using percentages and frequency count; multiple correlation and regression. The results reveal that students were generally satisfied with the e-portal system with, 89.3% indicating they were adequately satisfied, satisfied, and moderately satisfied. On the other hand, 11.1% had little satisfaction with the portal. Information/content quality, system quality, and ease of use were indicated to determine users' satisfaction. Furthermore, the entire user satisfaction dimensions positively and significantly correlate with and predict students' satisfaction with the web-portal. The study concluded by pointing out the implications and the recommendations based on the findings for the improvement of the students' web portal.

Keywords: Information System, Internet, Intranet, Nigeria, System Satisfaction, Undergraduate Students, University of Ilorin, Users' Satisfaction, Web Portal

INTRODUCTION

A portal is an application that primarily integrates the organisation's information and provides users with a single interface. A student portal is a web-based interface to access personalized information, resources, applications, and education/academic options with which students can reach a range of internal and external sources through a network connection in a password-protected setting. The use of portals by university students has been growing

steadily and – despite many restrictions such as information technology (IT) budgets – investments in portal solutions are still growing. As it has been observed, portal projects are usually complex, time and cost-consuming, and entail a high failure risk. Notwithstanding, the university of Ilorin Nigeria has embarked on the initiative of creating portal for all her students for the past five years and lots of resources have been invested on the project and students have been enjoying the benefits. However, since its creation; there has been no attempt to examine whether or not students are satisfied with the

DOI: 10.4018/jwp.2012040104

portal. If this is done, it is assumed the results will lead to better improvement and use of the portal.

The assessment of portal benefits is, however, often problematic, since common cost-benefit analysis methods do not take intangible impacts and intervening environmental variables into account. Similarly, measuring the success of information systems (IS) of which a portal is part and understanding the return on investments in IT is the focus of a large and growing body of research (Dehning & Richardson, 2002). Success of IS cannot be attributed to a single factor but rather to many including user satisfaction, user acceptance, system quality, service quality, etc.

Enormous benefits and advantages are associated with the implementation of a university portal. Karim and Masrek (2005) noted that portal implementations are helpful in helping enterprises achieve organizational effectiveness. According to Eisler (2003) other than providing a personalized and customizable user interface for accessing both internal and external information, a portal also provides the opportunity to create gateways to information and points of access for constituent groups. Bajec (2005) noted that today, almost all universities are either developing or purchasing portal solutions for their needs. Despite the growing interest in universities adopting portal technologies, studies addressing the issues of portal satisfaction are still very limited. Moreover, there are none or limited studies examining users' satisfaction with e-portal. Extant literature has revealed several studies investigating employees'/staffs' portal. However, evaluation and investigation of students' portal have been neglected. Since the University of Ilorin has invested huge resources on the provision of portals for all her students, it is important to find out whether or not these students especially the undergraduate ones who constitute the majority are satisfied with its use.

The bulk of the studies that were found in the literature were mainly concerned with reporting the experiences of developing a uni-

versity portal or setting plans and strategies for its development (see Jafari, 2003; Eisler, 2003; Thomas, 2003; Campbell & Aucoin, 2001; Frazee, Frazee, & Sharpe, 2003; Bishop, 2003). Hence, the purpose of this study is to examine the undergraduate students' satisfaction with their web portals. It is expected that the outcomes from the study will lead to improvement and management of web portal for more functionality and efficiency at the university. In terms of contribution, it is expected that to advance the theoretical development in the area e-portal/information system in general and present a basis for further research in this field.

LITERATURE REVIEW

The Concept of Web/E-Portal

The concept of an Internet Portal is a relatively recent phenomenon. It is seen as collection of information and services of an enterprise or as a community accessible to members through a single secure and customisable Web site. Relevant to internet portal is an enterprise portal. This is described as a user-centric enterprise-wide web-based system that incorporates a sophisticated integration of all types of information content and services (Harza, 2002). As a core organisational information system, it is often an internally developed and designed to suit the particular needs of organisational stakeholders (employees, clients, customers) (Kim, Chaudhury, & Rao, 2002). A campus portal otherwise refers to as students portal is an instance of an Enterprise Portal in a tertiary educational institution.

Portal applicable to tertiary institution of learning are usually referred to as 'campus portal'. Campus portals were pioneered by UCLA in 1999, followed by similar systems at the University of Washington and the University of Buffalo (Moskowitz, 2001). Roberts-Witt (1999) claimed that there are three types or portals. These are: *Data Portals* which is concerned

with managing such structured data as corporate databases with a single point of access. *Information Portals*, this is similar to the Data Portals. This type of portal is concerned with managing such unstructured data as e-mail, text, and other documents by using indexing and cataloguing systems with search and retrieval functionality. *Collaborative Portals* is the type that focus on group interactive functionality as well as the integration of the enterprise by bridging intranet, extranet, private source data, and public information. The users are also allowed to access all collaborative functions such as classified topics, conferencing, team discussion, news channel, calendaring, and the abilities to personalise the interface. Fuangvut and Hasan (2005) assert that campus portals have many specialised features. However, they are distinguished by their main user-base: the students. Although students are a critical component of the social life of the institution they are not employees. Nor can they necessarily be considered the organisation's customers as they are frequently not the ones paying the bills. Like most professional organisations, an educational institution has two types of employees, in their case academics and administrative staff. Consequently, the set of stakeholders involved in a campus portal is quite diverse and their needs complex. Many authors have identified one or two characteristics of web portal. These can be summarised as: presentation (NEC, 2004; Wojtkowski & Major, 2005), customisation (Jafari, 2003; NEC, 2004), easy to use (ICT_EMU, 2003; Frazee et al., 2003), categorisation (Plumtree, 2002), single point authentication access (Jafari, 2003; Wojtkowski & Major, 2005), powerful unified search engine (Wojtkowski & Major, 2005), Communication and collaboration tools (Plumtree, 2002; Firestone, 2003), security (Plumtree, 2002), etc. Many universities around the world considered the identified characteristics of web portal listed above. This eventually resulted in many of them creating web portals for their students. The University of Ilorin, Nigeria is not an exception.

Background on University of Ilorin

The University of Ilorin was established by a decree of the Federal Military Government of Nigeria in August, 1975 with mandate to implement one of the educational directives of the country's national development plans which aimed at providing more opportunities for Nigerians aspiring to acquire university education and to generate high level of manpower. In line with this goal, the University of Ilorin Library was established in May 1976 to support teaching and learning of the parent institution. In order to meet information needs of the University community, the library acquired numerous print and electronic materials that cut across all disciplines of studies in the University. The University library, through the support of the National University Commission (NUC), subscribed to a number of electronic information resources (Databases) that are expected to also enhance teaching, learning and research activities of the University community. These electronic resources can be accessed either from the Electronic library centre or from any computer connected to the internet with the aid of User name and password already provided to members of the University community.

E-Portal at the University of Ilorin

The University of Ilorin e-portal contract agreement was signed with the company named Simplex Automation System Ltd, Lagos, Nigeria on February, 2008. The e-portal was developed for the University of Ilorin students and staff Records Management. It is intended to document the processes, to manage students' admission, registration, academic records, courses administration, online results and transcript processing, online payments (payment via the portal using online electronic means), assignment of courses to lecturers. Among other functions are:

- View personal details;
- On-line registration;

- Change of course/ programme online as applicable;
- Hostel accommodation;
- Review courses;
- Check current charges;
- Download other registration forms;
- Manage password.

The use of the University of Ilorin student's portal starting at the beginning of the 2008/09 academic session, precisely, (11th November, 2008).

E-Portal Satisfaction

Several studies suggest that IS success is composed of a set of factors that apply to all systems, in addition to a set of factors specific to each type of system. Researchers identified several criteria of IS success: user satisfaction, system usage, and performance (Zviran & Ehrlich, 2003). User satisfaction is the most prevalent measure of IS success due to its applicability and ease of use (Mahmood, Burn, Gemoets, & Jacquez, 2000). Ives, et al. (1983) defined user satisfaction as the degree to which IS fulfils user needs. In general, if the users are satisfied with the IS, they use it, if otherwise, they do not. Many studies refers to user satisfaction as a measure of IS success, IS effectiveness, and IS acceptance (e.g. Rai, et al., 2002). A study by Geldman (1998) indicates that user satisfaction directly and significantly relates to IS performance. The portal is commonly operated in a web-based environment. However, the way the users interact with it is similar to how they interact with computer applications at the University of Ilorin environment. Once the users successfully access the portals, they can perform their work- related or personal tasks without needing to consult with computer analysts or programmers unless technical problems occur. In other words, they interact with the portal directly. In this study, the Doll and Torkzadeh (1988) definition of user satisfaction is adopted. Therefore, user satisfaction with portal is defined as an affective attitude

towards the portal by students who interact with the portal directly.

There is little documented empirical research on **portal evaluation**. Mahmood et al. (2000) stated that most IS user satisfaction studies are based on one point in time, and suggest that there should be longitudinal studies. Some studies investigate single aspects of portal success, but none of the studies reviewed took a comprehensive, integrated approach. In order to measure user satisfaction with e-portals, Sugianto et al. (2007) and Tojib et al. (2008) proposed using the B2EPUS model, which goes back to the work of Doll and Torkzadeh (1988). Masrek (2007) proposed another approach to assessing user satisfaction with campus portals, this is based on an extract of the updated D&M IS Success Model.

While user satisfaction with general IS and certain types of IT applications has been extensively studied in IS research, far less attention has been paid to user satisfaction with portal technology, specifically the students' portal. In this paper, a conceptual model for portal user satisfaction is provided; this was derived from an extensive literature review of existing user satisfaction with the portal. Nine dimensions of the portal user satisfaction were identified including: Information Content, Ease of Use, Convenience of Access, Timeliness, Efficiency, Security, Confidentiality, Communication, and Layout. Most of these nine constructs are similar to what have been used in relevant IS study evaluation to either determined user satisfaction, system success, system acceptance or effectiveness (see Delone & Mclean, 1992, 2003; Masrek, 2007, Tella & Mutula, 2010) etc. To determine the user satisfaction with the Web-portal in the current study, the followings constructs were considered: System quality, Information content quality, service quality, process quality, and collaborative quality, ease of use, convenience of access, individual impact and management support. Though there are many constructs available for determining e-portal satisfaction. These nine are chosen for this study because of their generic nature and

because they directly relate to or similar to the characteristics of e-portal identified based on literature. The constructs are described below.

Web-Portal Related Studies

As said earlier, limited studies available on students' satisfaction with e-portal or students' use of e-portal; however, relevant e-portal studies found in the literature are reviewed as follows. Urbach, Smolnik and Riempp (2010) conducted a study to gain a better understanding of employee portal success and to investigate the industry differences with regard to the success factors. A theoretical model based on the DeLone and McLean IS Success Model was introduced, which considers the specific requirements of employee portals. The associations between the model's different success dimensions was tested by using more than 6,000 employees' responses that were collected in a survey of 22 companies across different industries participating in an international benchmarking study. Furthermore, the potential industry differences by means of a multi-group comparison were analysed. Structural equation modelling was applied for data analysis. The results indicate that, besides the factors contributing to the success of IS in general, other success dimensions like the quality of the collaboration and process support have to be considered when aiming for a successful employee portal. The results of the multi-group comparison further indicate that the impacts of the success factors differ in intensity and significance between the industries used as sample. The findings make it possible for practitioners to understand the industry specific levers with which to improve their employee portals and to prioritize their investments accordingly. By empirically validating a comprehensive success model for employee portals, the study's results advance the theoretical development in this area and present a basis for further research in this field.

In another similar study conducted to gain a better understanding of employee portal success and to identify the levers for its improvement. Urbach, Smolnik, and Riempp (2010)

introduced a theoretical model that is based on the DeLone and McLean IS Success Model, which considers the specific requirements of employee portals. The associations between the model's different success dimensions by using more than 4,400 employees' responses were tested. Responses were collected in a survey of twelve companies across different industries participating in an international benchmarking study. Structural equation modelling was applied to carry out the causal analysis. Furthermore, within a performance-based analysis, the success dimensions' improvement potentials from both a strategic and action-oriented perspective were investigated. The results of the causal analysis indicate that besides the factors contributing to the success of IS in general, other success dimensions such as the quality of the collaboration and process support has to be considered when aiming for a successful employee portal. The performance-based analysis emphasizes the significance of collaboration quality to improve an employee portal and identifies the respective fields of action. The study's findings make it possible for practitioners to understand the levers with which to improve their employee portals and to prioritize their investments accordingly.

Al-Busaidi (2010) illustrated that the deployment of a corporate portal at an academic institution is relatively successful. The results revealed that the strengths of the corporate portal are mainly related to information quality, system quality and recognized personal benefits; whereas the weaknesses are mainly related to system quality and few are related to information quality and support services quality. Furthermore, the examination provided some insights about success factors of corporate portal. The factors identified by this author are relevant to the ones identified to determine users' satisfaction with e-portal in this study. This further justified their inclusion.

Masrek (2007) evaluated the effectiveness or success of universities' portal implementation from the perspective of students as users. Adopting the model developed by DeLone and McLean, portal effectiveness is defined as be-

ing composed of information quality, systems quality and service quality. In addition, the paper also seeks to investigate the influence of individual factors comprising attitudes towards the portal, personal innovativeness and web self-efficacy on the effectiveness of the portal. The study adopted a survey research design with questionnaires administered to 600 students as respondents. The cross-sectional strategy for data collection resulted in 405 usable responses that were used for data analysis. The results show that IS effectiveness dimensions consisting of service quality and systems quality are significantly correlated with user satisfaction. In addition, the study also showed that of the three predictors investigated, only attitudes towards the portal were found to be significantly correlated with IS effectiveness dimensions. It was concluded that, the perceptual self-report measures used rather than objective measures adopted in this study contribute to bias, and a cross-sectional design for data collection only provides data at one point in time. The instrument developed in the study could assist the authorities concerned in evaluating the effectiveness of the portal.

Torjib et al. (2006) proposed a conceptual model for portal user satisfaction, which was derived from an extensive literature review of existing user satisfaction instruments and the portal. Nine dimensions of the b2e portal user satisfaction were identified: Information Content, Ease of Use, Convenience of Access, Timeliness, Efficiency, Security, Confidentiality, Communication, and Layout. The paper presents a conceptual model that successfully formulates nine dimensions which belong to the domain of user satisfaction with the portal. The model forms the basis on which a new instrument to measure user satisfaction with such portal have been developed. It has thus laid the groundwork for expanding research on user satisfaction studies within web-based environment.

Dias (2001) reviewed literature on corporate portals, whose main purpose is to provide easy access to enterprise digital information. Corporate portals use metadata and eXtensible

Markup Language to integrate unstructured data to structured data from enterprise operational databases, supplying access to corporate information through a personalized interface, available over the internal hypertext network on the Intranet. A corporate portal functions as a single gateway to all information and knowledge resources in an enterprise. At the beginning, the author describes the improvements in information management, going through different stages from physical control of information containers to corporate portals. This paper presents definitions, concepts, main components of corporate portal architecture, and different kinds of corporate portals found in specialized literature. The author also points out the potential benefits of this technology to enterprise business.

From the above synopsis of related studies, it is clear that limited studies have examined e-portal satisfaction. There is no study conducted particularly in the university context whether in Nigeria or elsewhere in Africa. Particularly, a study of such has never been conducted at the University of Ilorin Nigeria and other universities Nigeria as a whole. Therefore, this study will constitute one of the pioneer studies on e-portal evaluation research both in Nigeria and Africa thereby constitutes additional literature in the area.

OBJECTIVES OF THE STUDY

Based on the gaps that have been identified above, the major objective of this study was to examine users' satisfaction with e-portal at the University of Ilorin, Nigeria. The specific objectives of the study were to:

1. Determine the level of students' satisfaction with e-portal;
2. Identify the e-portal users' dimension/characteristics that determine users' satisfaction with e-portal;
3. Find out the dimension of e-portal users' characteristics that best predict e-portal satisfaction;

4. Find out the challenges of using e-portal at the University of Ilorin.

RESEARCH QUESTIONS

To achieve the above objectives, the following research questions were raised and answered in the study:

1. What is the level of students' satisfaction with e-portal at the University?
2. What construct or characteristic determine users' satisfaction with e-portal at the University of Ilorin?
3. Which of the users' characteristics best predict e-portal satisfaction?
4. What are the challenges of using e-portal at the University of Ilorin?

METHODOLOGY

A pure quantitative method using survey approach was adopted for the study. This approach was chosen to allow the researcher drawn on large sample which is representative of the total population (Babie, 2004). Moreover, survey approach was chosen because it is the most prominent approach used in previous related studies e.g. (Amoroso & Hunsinger, 2009).

POPULATION AND SAMPLE

The target population for this study comprised the undergraduate students at the University of Ilorin, Nigeria. Currently, the total population of undergraduate students in this university is 16,800 (University of Ilorin, 2011). Israel (2003) model was used to select the sample for the study. The model states that: Given a sample size for $\pm 3\%$, $\pm 5\%$, $\pm 7\%$ and $\pm 10\%$ precision levels where confidence level is 95%; the 'P' should be $\approx .5$. In the light of this, $\pm 3\%$ was taken for precision, while the population is 16,800 at 95% confidence. Therefore, the sample from 16,800 is 1,034. In the light of this, eight faculties based at the main campus of the

university were sampled. This is to avoid the difficulty of travelling to the remaining three faculties located some distance away from the main campus. Within each of the faculty, 200 students were selected. This eventually gave a total of 1600 exceeding the number indicated by Israel (2003).

INSTRUMENT

A self-designed questionnaire with items adapted from various scale used in previous related studies was used. The various constructs in the questionnaire were measured to examine the factors contributing to e-portal satisfaction among students. Previous related studies were used to derive the constructs for the study. Five-point Likert format ranging from strongly agree to strongly disagree was adopted for the instrument. The instrument (the questionnaire) consisted of ten sections to measure the constructs of user satisfaction and to capture demographic data.

RELIABILITY AND VALIDITY

To determine the validity of the instrument (questionnaire), it was given to two experts in IS research in order to assist in ensuring the face and content validity of the instrument. Strong support for construct validity was found by examining the factor analysis data. The results assisted in the modification of the items in the instrument. To ensure the reliability of the questionnaire used in the study, it was administered on 20 students selected from the non participating faculties. Data collected were subjected to Cronbach Alpha. By examining the Cronbach Alpha reliability coefficients, strong support was reported for construct reliability, while the overall reliability co-efficient returned an $r = 0.87$. All the sub-sections of the instrument showed relatively high Cronbach Alpha co-efficients at $\alpha > 0.80$. Principal component analysis was conducted with a nine-factor solution, with eigen values greater than 1.0, explaining 82.5% of the variance in the data set. Tables

for Cronbach Alpha coefficients, factor analysis, and eigen values are not included to avoid the page limit but are available upon request.

PROCEDURE FOR DATA COLLECTION

The questionnaire was administered personally by the researcher to the respondents. All the respondents were administered the questionnaire in their respective faculty during a core course (core course is a course which the entire students of the faculty must offer and pass before graduation). The administration exercise took eight days, i.e., one day for each faculty. To be able to capture the target sample of 1600, a total of 2000 copies of questionnaire were administered out of which, the researcher was able to collect 1650 back given 82.5% return rate. Eventually, 1600 were properly filled and this eventually constituted the sample for the study.

DATA ANALYSIS AND RESULTS

Pearson Correlations Method was used to examine the relationships between the dependent variable (users' satisfaction) with the independent variables (i.e. satisfaction constructs) while regression analysis was used to find out the determinants of users' satisfaction among the constructs. The results of the analyses are presented (Table 1).

Table 1 reveals the demographic information of the respondents. The results show that most respondents were males (55.6%) while the female respondents were (44.4%). The results on the age of the respondents show that 38.5% were aged between 17-20 years, (29.6%) 21-24 years and (15.6%) were aged between 25-28 years. Additionally, (9.4%) were aged between 29-32 years while (6.9%) were aged between 33-37 years. The years and levels of respondents reveal that (33.3%) were chosen

from year 3, (25%) from year 2, (20%) from year 1, (15.6%) from year 4 and (6.1%) from year 5. Furthermore, the demographics revealed that (12.5%) respondents were from each of the faculty that took part in the study (Table 1).

Research Question 1: What is the Level of Students' Satisfaction with E-Portal?

To answer this research question, students (respondents) were asked to show their level of satisfaction with e-portal on a five point ratings. Table 2 presents the results which reveal that students were generally satisfied with the e-portal system at the University of Ilorin, Nigeria. Overall, more than half the population of the respondents (89.3%) were adequately satisfied, satisfied and moderately (the highest level of satisfaction), while on the other hand, only just over (10.7%) of the respondents were less satisfied and dissatisfied.

Research Question 2: What Dimension Determines Users' Satisfaction with E-Portal?

Responses to all the dimensions provided were obtained to answer this question. The results confirm all the dimensions to be good indicators of e-portal satisfaction. The results, shown in Table 3, revealed that the entire nine dimensions included in Table 3 are actually good determinant of users' satisfaction. Results showed that all the dimensions have significant mean value indicating that they all have the potentials and capacity to determine users' satisfaction with e-portal. From the results, it can be deduced that students are generally satisfied with the overall quality of information/content of the system. The results thus answer the research question by revealing information/content quality as the dimension that determine satisfaction with e-portal followed by system quality, collaboration quality, and ease of use.

Table 1. Respondents' bio-data information (n = 1600)

| Demographics | Sample | Percentage |
|------------------------------|--------|------------|
| Gender: | | |
| Male | 890 | 55.6 |
| Female | 710 | 44.4 |
| | 1600 | 100.0 |
| Age: | | |
| 1 17-20 years | 616 | 38.5 |
| 21-24 years | 473 | 29.6 |
| 25-28 years | 250 | 15.6 |
| 29-32 years | 151 | 9.4 |
| 33-37 year | 110 | 6.9 |
| | 1600 | 100.0 |
| Year/Levels of Study: | | |
| Year 1 | 320 | 20.0 |
| Year 2 | 400 | 25.0 |
| Year 3 | 532 | 33.3 |
| Year 4 | 250 | 15.6 |
| Year 5 | 98 | 6.1 |
| | 1600 | 100.0 |
| Faculties: | | |
| Art | 200 | 12.5 |
| Agric. Science | 200 | 12.5 |
| Business and Social Sc. | 200 | 12.5 |
| Comm. & Info. Sciences | 200 | 12.5 |
| Education | 200 | 12.5 |
| Engineering Tech. | 200 | 12.5 |
| Law | 200 | 12.5 |
| Science | 200 | 12.5 |
| | 1600 | 100 |

Table 2. Overall level of e-portal satisfaction (N = 1600)

| Level of satisfaction | Number of Responses | Percentage |
|-----------------------|---------------------|------------|
| Adequately Satisfied | 527 | 32.9 |
| Satisfied | 501 | 31.3 |
| Moderately Satisfied | 402 | 25.1 |
| Less Satisfied | 105 | 6.6 |
| Dissatisfied | 65 | 4.1 |
| | 1600 | 100.0 |

Table 3. Dimension of user satisfaction with e-portal (N = 1600)

| Dimensions | Number of respondent | Mean |
|-----------------------------|----------------------|------|
| System quality | 1600 | 6.89 |
| Information/content quality | 1600 | 7.11 |
| Service quality | 1600 | 5.22 |
| Process quality | 1600 | 4.97 |
| Collaboration quality | 1600 | 6.81 |
| Convenience of access | 1600 | 5.99 |
| Ease of Use | 1600 | 6.05 |
| Individual impact | 1600 | 5.83 |
| Management support | 1600 | 4.87 |

Research Question 3: What Users' Dimension Best Predict/Determine Users' Satisfaction with E-Portal?

To answer this research question, a multiple correlations of responses to the e-portal users' satisfaction questionnaire were run. This is followed by determining the extent to which the entire dimensions when put together adequately determine/predict e-portal system satisfaction. Table 4 through Table 7 provide the results.

The inter-correlation between the independent variables (Dimensions of e-portal satisfaction) showed that information/content quality of the e-portal system had the highest and positive correlation with e-portal satisfaction (.744) followed by System quality (.563), perceived ease of use (.556), Individual impact (.536), Process quality (.511), Collaborative quality (.476), Service quality (.454), Management support (.447) while convenience of access showed the least positive correlation with e-

Table 4. Multiple correlation of the dimensions of satisfaction with e-portal system (N = 1600)

| Dimensions | Mean | Std Dev | EPS | SQ | ICQ | SQ | PCQ | PQ | CQ | EOU | II | MS |
|----------------|------|---------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| E-portal Sat. | 8.85 | 4.13 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| System Qual. | 6.89 | 1.07 | .563 | .409 | .640 | .780 | .602 | .119 | .213 | .243 | .321 | - |
| Info/Co. Qual. | 7.11 | 1.21 | .744 | .567 | .449 | .556 | .445 | .217 | .119 | .115 | - | - |
| Service Qual. | 5.22 | 1.03 | .454 | .596 | .435 | .565 | .341 | .321 | .123 | - | - | - |
| Process Qual. | 4.97 | 1.79 | .511 | .586 | .412 | .443 | .332 | .280 | - | - | - | - |
| Colla. Qual. | 6.81 | 1.15 | .476 | .123 | .378 | .356 | .221 | - | - | - | - | - |
| Conv. Of Acc | 5.99 | 1.11 | .378 | .145 | .224 | .259 | - | - | - | - | - | - |
| Ease of use | 6.05 | 1.09 | .556 | .213 | .222 | - | - | - | - | - | - | - |
| Ind. Impact | 5.83 | 1.05 | .536 | .111 | - | - | - | - | - | - | - | - |
| Mgt. Support | 4.87 | 1.00 | .447 | - | - | - | - | - | - | - | - | - |

Table 5. Multiple regression on dimension of e-learning satisfaction and users' satisfaction with e-learning system (N = 1600)

| Multiple R .4222 R. Square .8558 Adjusted R. Square .3668 Standard Error .1106 Analysis of Variance | | | | | |
|--|------|----------------|-------------|----------|-------|
| | Df | Sums of Square | Mean Square | F-Ration | Sign. |
| Regression | 9 | 75616.469 | 680.548 | 3.45*** | 0.05 |
| Residual | 1591 | 123.978 | 197.249 | | |
| Total | 1600 | 75,740.447 | | | |

F. Observed = 3.45***

Table 6. Co-efficient of the prediction (n =1600)

| Dimensions/Variables | B | SE.B | Beta | T. | Sig. T |
|--------------------------|----------|---------|--------|-------|--------|
| System quality | .12995 | .05224 | .14877 | 4.185 | S** |
| Info/content quality | .02217 | .05009 | .14741 | 4.211 | S** |
| Service quality | .04972 | .05808 | .14986 | 3.007 | S** |
| Process quality | .04889 | .06117 | .17278 | 2.113 | S** |
| Collaboration qual. | .01369 | .06353 | .15628 | 2.235 | S** |
| Convenience of Acc. | .00818 | .04444 | .14561 | 2.201 | S** |
| Easy of use | .01412 | .04123 | .05541 | 4.022 | S** |
| Individual Impact | .00111 | .00666 | .08721 | 2.012 | S** |
| Management Sppt Constant | .00321 | .00442 | .12542 | 1.900 | S** |
| (E-portal S | 31.20589 | 3.18019 | .00342 | 5.342 | 000 |

Table 7. Challenges of e-portal system (N =1600)

| Challenges of E-Learning System | | Most Often | Often | Rarely | Total |
|---------------------------------|---|--------------|-------------|--------------|-------|
| 1. | Loss/Forgotten Password | 350 (21.8) | 200 (12.5%) | 1050 (65.6%) | 1600 |
| 2. | Slow Network/ Server | 1200 (75%) | 379 (23.6%) | 21 (1.3%) | 1600 |
| 3. | Access Problem | 367 (22.9%) | 339 (21.1%) | 894 (55.8%) | 1600 |
| 4. | Incessant power failure | 1456 (91%) | 144 (9%) | 0 (0%) | 1600 |
| 5. | Swift and un-announce removal of important information and announcement | 1367 (85.4%) | 230 (14.4%) | 3 (0.2%) | 1600 |

portal system with (.378). The results generally suggest that the entire e-portal users' satisfaction dimension significantly correlated with e-portal satisfaction. The results also revealed the mean and standard deviation for each of the independent variables.

Information/content quality again had the highest (Mean = 7.11, SD = 1.21), followed by System quality (Mean 6.89, SD = 1.07). Others followed in this order: Collaboration quality (Mean 6.81, SD = 1.15); ease of use (Mean 6.05, SD=1.09), Convenience of access

(5.99, SD = 1.11), Individual impact (Mean 5.83, SD = 1.05), Service quality (Mean 5.22, SD = 1.07), Process quality (Mean 4.97, SD = 1.79) and Management support (Mean 4.87, SD = 1.00). The gravity of the mean value and standard deviation of information/content quality revealed it to be the dimension that exerted the most positive significant correlation with users' satisfaction with e-portal. This thereby provided the answer to research question 3.

A stepwise multiple regression analysis on the data obtained on independent variables (dimension of e-learning satisfaction) and dependent variables (e-portal satisfaction) were run in Table 5 and Table 6. Table 6 show that the entire satisfaction dimensions made 85% prediction of users' satisfaction with e-portal. From the analysis of variance performed on multiple regression, it is seen that the observed F value = 3.45, $P < .05$ when the nine dimensions were regressed with the users' satisfaction. This indicated that the entire dimensions had no difference with the users' satisfaction with e-portal system. These results further strengthened the prediction in the Table 6 which provides the co-efficient on the extent of the determinant/prediction. The essence of this is to know which of the dimensions produced the most significant effect on users' satisfaction with e-portal system. The results showed that information/ content quality had the greater effect (Beta = .14741, $t = 4.211$, $P < .05$). System quality followed with (Beta = .14877, $t = 4.185$, $P < .05$). Other dimensions followed in this order: Ease of use (Beta = .05541, $t = 4.022$, $P < .05$), Service quality (Beta = .14986, $t = 3.007$, $P < .05$), Collaboration quality (Beta = .15628, $t = 2.235$), Convenience of access (Beta = .14561, $t = 2.201$), Process quality (Beta = .17278, $t = 2.111$), Individual impact (Beta = .08721, $t = 2.012$ and Management support (Beta = .12542, $t = 1.900$, $P < .05$) respectively. The results generally showed that the entire satisfaction dimension have the capability to determine satisfaction with e-learning system except that the gravity of and the extent of the effects differed.

Research Question 4: What are the Challenges Facing Users when using E-Portal at the University of Ilorin?

To answer this research question, respondents were asked to indicate how often they faced some identifiable challenges of e-portal when using the system at the University of Ilorin. Table 7 presents the result and reveals that respondents faced all the entire problems identified in Table 7 when using the e-learning system except loss/ forgotten password which the majority (65.6%) indicate they rarely faced. However, it was evidenced that 98.6% respondents indicating experience slow network or server problem most often and often. An overwhelming majority 100% indicate incessant power failure most often and often, 94% indicating network/server failure most often and often. Access problem was indicated by 45% while an overwhelming majority (99.8%) again indicated swift and un-announce removal of important information. This indicate that all the challenges listed in Table 7 are faced by the users of e-portal at the University of Ilorin, therefore provided the basis for answering research question 4.

DISCUSSION OF FINDINGS

The study has explored user satisfaction with e-portal at the University of Ilorin, Nigeria. The results revealed that students were generally satisfied with the e-portal system at the University. Overall, 89.3% were adequately satisfied, satisfied, and moderately satisfied; while on the other hand, 11.1% were less satisfied or not satisfied. Information/content quality, system quality, ease of use and other dimensions were indicated to have the capacity to determine users' satisfaction with e-portal system. Furthermore, the results demonstrated that the entire user satisfaction dimension positively and significantly correlate with and adequately predicted satisfaction with e-portal. The results are in accordance with the findings reported by

other researchers (Urbach, Smolnik, & Riempp, 2010; Al-Nusaidi, 2010; Masrek, 2007). The challenges identified as facing the use of e-portal system were slow network/server, access problem, incessant power failure and swift and un-announce removal of important information and announcement from the students e-portal.

The first research question on this study indicates generally that students were satisfied with e-portal. This was not by chance considering the fact that previous studies had demonstrated correlation between e-portal and users' satisfaction. For instance, Rao (2006) reported that e-portal not only decreases overall operational costs, but also increases the service levels to students and increases overall student satisfaction.

Findings also revealed that Information/content quality, system quality, ease of use and other dimensions were indicated having significant capacity to determine satisfaction with e-portal. This corresponds with the earlier finding by Urbach et al. (2010) who indicated that, besides the factors contributing to the success of IS in general, other success dimensions – like the quality of the collaboration and process support are important for a successful portal. The study also corroborates the finding by Torjib et al. (2006) who identified nine dimensions of the b2e portal user satisfaction including Information Content, Ease of Use, Convenience of Access, Timeliness, Efficiency, Security, Confidentiality, Communication, and Layout. Similarly, the report by Masrek (2007) where IS effectiveness dimensions consisting of service quality and systems quality significantly correlated with user satisfaction also lend a good credence to the present finding on this study.

The challenges of e-portal reported in this study are not unexpected. There have never been information systems without some associated problems or weaknesses. However, the problems identified in this study are peculiar to developing countries. The issues of slow network/server and access have been overcome in

the developed world. It is hope that developing countries including Nigeria will also get there.

CONCLUSION

This research has emphasized most common dimensions or factors which are a basis for user satisfaction in e-portal system. According to selected dimensions we conduct a research, which primary aim was to examine undergraduates' satisfaction with the e-portal at the University of Ilorin, Nigeria. Most dimensions identified importantly influence undergraduate satisfaction with the e-portal system. With the paper we make a contribution to understanding the role and importance of users' satisfaction dimensions with e-portal system. We limited our research only to undergraduate students in our university. In the long run, a longitudinal study could be made in which we can examine the impact of different participants' characteristics and its impact on a users' satisfaction with the e-portal.

RECOMMENDATIONS

The study has identified a number of challenges faced by the students when using e-portal. These are Loss/Forgotten Password, Slow Network/Server Access Problem, Incessant power failure and Swift and un-announce removal of important information and announcement. In the light of these, the university authority is called upon to see to it that slow network and server problem is ratified to enable portal users enjoy its services. Not this alone, the students themselves should take care of their pass word which some usually forget. They are advice to write the password on their cell phone or diary to protect it from being lost. Other recommendations are that:

The portal should be designed well enough to be intuitive. University authority should make adequate provision for power generating plant that will serve the generality of the students to

forestall incessant power outage. University authority should employ more ICT staff for adequate monitoring and portal administration to ensure quality services delivery. Deadline for removal of posted information on the portal should be displayed along with the information. This will create awareness for the portal users.

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Adeyinka Tella is a Senior Lecturer in the Department of Library and Information Science, Faculty of Communication and Information Sciences, University of Ilorin, Nigeria. Tella was a Commonwealth Scholar who finished his PhD in September 2009 from the Department of Library and Information Studies, University of Botswana where he was awarded small grant for thesis writing for the PhD student's category in 2007 by the Council of Development in Social Science Research in Africa (CODESRIA). He has written and published articles mostly in International reputable refereed journals together with chapters in books. He is one of the contributors to an (Information Science Reference) Cases on Successful E-learning Practices in the Developed and Developing World: Methods for the Global Information Economy and Editor of another (Information Science Reference) text Library and Information Science in Developing Countries: Contemporary Issues Currently, he is the Associate Editor of the International Journal of Library and Information Science, and Editor-in-Chief of International Journal of Information Processing and Communication. He is also editorial board member for Library Philosophy and Practice. Tella is an external examiner for Library and Information Science PhD candidates at the Annamalai University, Alagapa University and Bharathidasan University, Trichy, in India. Tella has just been awarded a Post-Doctoral Research Scholarship by the University of Kwazulu-Nata in South Africa in April 2012. His re-search areas include e-learning, information literacy, information communication technology and management, information system evaluation and psychology of information.

M. T. Bashorun is a Lecturer, Department of Library and Information Science, University of Ilorin, Nigeria. He holds BSc in Biology/Education from Obafemi Awolowo University, Master of Library and Information Studies, University of Ibadan. He previously worked as Education Officer II with the Civil Service Commission, Oyo State Government and Business Development Manager with the Nigerian Bottling Company, Nigeria. He is currently a PhD candidate at the Department of Library and Information Studies, University of Botswana in Botswana.