

Relevance of Efficient Management of Online Education Portal of Students Records In Tertiary Institutions In Nigeria.

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Abstract: *This paper discusses the relevance of efficient management of on-line education portal of student's records in Tertiary Institutions in Nigeria. The objective to develop a portal that would incorporate online registration, profile creation, student's clearance and payment among others. It highlighted the types of records created, method of distribution, storage retrieval, access and their problems. A descriptive research design was adopted in the study. Research questions were posed to guide the study. It is expected to reduce the paper works and automate the record generation process in the tertiary institutions in Nigeria. Data collected were analyzed using ANOVA. The result aims to provide solution to inefficiency and at the same time maintain information accuracy and ease of access to students, lecturers, parents, Bursary units and management on-line records in tertiary institutions*

Key Words: *Portal, Electronic Registration, Efficiency, Productivity*

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I. Introduction

It is largely accepted that we are witnessing a new phase in economic development which is characterised by continuous innovation and the spread of digital and communication technologies. Its impact on every sphere of human endeavours today is probably much more than it is actually known especially in the tertiary institutions for the management of students' records. Processing students' data effectively with efficient utilisation of available resources and transforming it quickly into meaningful information is essentially paramount to every institution of learning particularly tertiary institutions. This, according to Tejaswini, Deb, Michelle and Alvino (2015), can only be achieved nowadays using Computers and Application Software. Today, students' records are managed via Online Education Portal (E-Portal) by fewer people and a shorter duration. With this, all educational and administrative processes at school are automated. It is an end-to-end service initiative which handles the complete student lifecycle; starting from application to admission and ultimately to graduation. Archiving and managing students' records electronically provides high-quality speedy service and ensure data integrity. In 2010, the Organisation of Economic Co-operation Development (OECD) recommended that education systems continue to invest in technology with the belief that it assists in automating the existing manual systems of managing students' records as well as to maintain the records of students easily. This was supported by Cuban (2013). The roles that a portal supports include those of students, faculty, staff, managers, workers, provosts, academic departments, IT facilities, scholars, researchers, prospective students, alumni, visitors, friends and vendors (Katz, 2002). Lakos (2004) observes that portals are still currently viewed as an expense and not investment. It is posited in this study that analysis of their impacts and outcomes on efficient management of students' record will change this perception.

The creation and management of accurate, updated information regarding students' academic career is critically important in tertiary institutions. Student information system deals with all kinds of student details, academic-related reports, college details, course details, curriculum, batch details, placement details and other related details too. It is highly critical to track all the details of a student from day one to the end of the program which can be used for all reporting, tracking of attendance, payments, progress in the course, completed semesters, upcoming semester year, curriculum details, exam details, project or any other assignment details, final exam result and all these are available through a secure, online interface embedded in the portal.

Consequently, this study intends to examine whether investment in Online E-Portal has a significant impact on efficient Management of Students' Records among tertiary institutions in Nigeria.

To achieve this aim, the following hypotheses are stated and tested in the null form:

H₀1: There is no significant difference in the level of efficient Management of Students' Records (eMSR) between University and Non-University tertiary institutions in Nigeria.

H₀2: There is no significant relationship between the investment in Online E-Portal and efficient Management of Students' Records (eMSR) in the selected tertiary institutions in Nigeria.

H₀3: There is no significant relationship between Human Capital Investment (HCI) in bursary, admission and

other admin staff and the efficient Management of Students' Records (eMSR).

H₀4: There is no significant relationship between the number of registered students and the efficient Management of Students' Records (eMSR) in the selected tertiary institutions in Nigeria

In view of the fact that tertiary institutions are becoming more reliant and driven by Information Technology, the study will have immense benefit to, University's, Polytechnics/College Administrators, Regulators e.g. Nigerian University Commission, National Board for Technical Education, Researchers and other interested parties who will need this study to understand the impact of E-Portal on the efficient Management of Students' Records (eMSR) and to formulate policies for tertiary institutions. The study is limited to the following aspects of Online E-Portal; admission, bursary (payments), registration and academic record management. The study covers the tertiary institutions located in the four geopolitical zones of South-West, South-South, South-East and North-Central.

II. Review of Related Literature

Portal

Tejaswini, Deb, Michelle and Alvino (2015) defined Portal as an application (more likely web-based), that provides capabilities for multiple users with different permission levels to manage (all or a section of) content, data or information of a website project, or internet/application. They further explain that the web-based software helps Managers to plan and control the organizational operations and to respond to changing market conditions. It provides a regular flow of information for managerial decision-making and control. Looney and Lyman (2000) sees the portal as a platform for organizations – universities, colleges, companies to leverage on and for efficient communication and other in-house operations. Put more simply a portal collates — a variety of useful information into a single, one-stop` web-page, helping the user to avoid being overwhelmed. It will also have faculty details, batch execution details, students' details in all aspects, the various academic notifications to the staff and students updated by the university administration.

However, Lakos (2004) gives the key principles that should govern a portal rollout as (SDQPS), Simplicity – users want a simple and clear web environment; Dependability – the site and its contents should be available always and should be predictable; Quantifiable value – users should feel self-sufficient and realize added value from using the portal; Personalization – users should be able to change the site to their personal preferences; Systematic management – long-term success requires a systematic approach and long-term commitment.

Portal and Electronic Registration

In order to adequately address the issue of inefficiency in the manual registration of students of tertiary institution which is highly susceptible to errors and increased students' proficiency in technology (Floyd and Powell, 2004) there is the need to consider the ubiquitous effects of Web-Portal. Web Portal, according to Strauss (2000), creates an avenue for electronic registration or e-registration, or even online registration. It is a secure website that students can access from anywhere with an internet connection. It must be borne in mind that the Web, a resource of the Internet, and a tool to browse the Internet is the first ever innovation that allows anyone to publish to a vast number of users via the Internet. The portal in this context is more than a gateway; it is a hub from which users can locate all the Web content commonly needed (Nielsen, 1999). Our education system requires a tremendous amount of data and documentation, and this e-registration solution allows institutions to focus less on processing paperwork and more on what matters most — meeting the educational needs of their students by having a cost-efficient, secure registration process that allows for easy access to student files. Internets and portals are supposed to provide an infrastructure through which end-users can gain effective access to information sources needed to assist in daily tasks such as effective decision making, planning and research (Brakel, 2003).

Efficiency and Productivity

As a tool for efficiency and productivity for the 21st century tertiary institutions, Gleason (2000) argues that Portal technology is a tool to enhance institutional efficiency and productivity such that University portals integrate campus-specific information and activities which is stored in the campus electronic vaults such as databases, file systems and existing application systems, with unstructured data (text) from on and off campus. Corroboratively, Katz (2002) in describing the impacts of E-Portal posits that portal is seen as a system to get the institutions organized to better form lifelong impressions. It enables university information system users to communicate with the university information sub-systems securely. At the very basic level, Davis, (1989) submits that the benefits that can be gained through the use of the portal are: improved task performance, job efficiency, and overall usefulness. Inevitably, therefore, rapid development and the increasing convergence of ICT have stimulated significant debate about the roles that these technologies might play in accelerating education. This is particularly relevant for developing countries, where several of the broad challenges facing education systems are magnified by low skills base, significant resource constraints, and a range of non-

educational social problems (such as widespread poverty and disease). It, therefore, becomes important to consider carefully potential applications for ICT in supporting schooling. A primary opportunity lies in the creation of an effective online educational portal, building on lessons of portals being developed around the world. In examining the specific impacts of Online E-Portal,

Measuring the Efficiency of Web Portals

White (2003) argues that the existing measurement approaches to assess portal success in practice usually utilize monetary indicators, such as return on investment (ROI) or total cost of ownership (TCO) and other cost-benefit analysis methods. However, Heila (2003) posits that both the tangible and intangible effects of a portal to detect potential improvements are needed to arrive at a comprehensive measurement of portals' success so as to justify present and future investments in portal solutions. For example, Damsgaard and Scheepers (1999) submit that portals' success cannot be measured solely by its reach; one should not purely rely on —hit counts as a measure of success. Effective portals are used repeatedly by its users on a frequent basis for extended periods of use, and this cannot be achieved without users being satisfied with portals' quality and service that they become willing to use/continue using portals. Moraga, Calero, and Piattini (2004) defined these dimensions in their Model, known as the Portal Quality Model (PQM), that they built based on the SERVQUAL model that was proposed by Parasuraman et al. (as cited in Dima & Mutaz, 2012) and the GQM (Goal Question Metric) method that was proposed by Basili et al. (as cited in Dima & Mutaz, 2012). In this model, the different dimensions of the SERVQUAL model to the portal context were adapted and some of them were split up into sub-dimensions, in order to create a more specific model.

EMPIRICAL REVIEW

According to web evaluations conducted by The Commonwealth of Learning in 2002, it was demonstrated that there is a range of web portals currently available. The various categories into which these portals fit are Networking Portals, Organizational Portals, and Resource-based Portals. Networking Portals is a web portal that provides various individuals (educators, learners, managers, and administrators) with a central point from which to access various educational tools and facilities (online and offline). Organizational Portal is a portal constructed by a specific organization whose core business is to deliver educational material. Resource-based Portal is a portal which provides access to various educational resources online. Generally, these types of portals contain adequate search facilities, links to other relevant organizations or institutions as well as subscription services. In many instances, these services are merged in a single portal.

An online survey conducted by Secreto and Pamulaklakin (2015) for 147 continuing undergraduate and graduate students who were admitted prior to the implementation of the portal and thus had experienced both the manual and online processes shows that about 85 per cent of those who participated in the survey were either very satisfied or satisfied with their overall experience of the portal. Ninety per cent of the total participants found the portal cost-effective and informative.

A study by JISC RSC (Regional Support Centre) London on behalf of the Excellence Gateway published in 2008 on Richmond Adult Community College Using Technology to make a step in business efficiency and responsiveness, was to see how the college could use new technology on the business side; first, the priority was to use new technologies to reduce transaction costs between the college and the public. The outcomes of this project includes: Reliable electronic registration linking the student database to finance systems and modules for payroll and staff development - ensures accurate payments and strong financial control; Learners enjoy the convenience of online enrolment (course permitting) with 35% of enrolments now made on the Web; The simple web-based Quality Assurance System was an early action that greatly improved timeliness and efficiency of getting learner feedback from the previous paper-based process and; Co-development of many of these modules enabled them to obtain bespoke systems more cost-effectively as the software company were able to gain commercial advantage through the developments (JISC, 2008). An exploratory study by Cao and Brodnick (2002) investigated factors that affect college students' use of online registration service. Findings show that during the first year 31% of students who pre-registered their courses and results show that academic and demographic factors affected students' use of online registration service.

THEORETICAL FRAMEWORK

Sanghee, Terence, Suresh, and Nigel (2013) argue that the critical importance of theory in knowledge development would suggest a wellspring of scholarship on theory and its application in academic research. Similarly, numerous studies have examined theory structure, philosophical issues, types of theory, epistemology, and socio-political issues related to the role of theory in research (e.g Davison et al. 2012; Gregor 2006; Markus and Robey 1988; Ngwenyama and Lee 1997; Weber 1987). According to Dima and Mutaz (2012), web portals are considered as a type of knowledge management systems that provide access to integrated applications and databases, they act as a business intelligence tool that supports the decision making

process and sometimes fosters task innovation. Looking at portals as a type of information systems, it is not easy to define their success or efficiency, since there are several definitions and measures of efficiency provided in the literature. This is because there are different stakeholders who assess IS success in an organization (Grover et al., 1996). Many models were used to measure the success of information and knowledge management systems. Such as

a. DeLone and McLean IS Success Model

This model has proven some validity in assessing the success of knowledge management systems. DeLone and McLean (1992) reviewed the existing definitions of IS success and their corresponding measures, and classified them into six major variables: "System Quality", "Information Quality", "Use", "User Satisfaction", "Individual Impact", and "Organizational Impact". In order to provide a more general and comprehensive definition of IS success, one that covers these different perspectives, they then created a multidimensional measuring model with interdependencies between the different success variables, which became very popular. Several studies have been conducted in an attempt to extend or re-specify DeLone and McLean original model (1992). DeLone and McLean have responded and developed an updated model in (Delone and Mclean, 2003). The updated model consists of six interrelated dimensions of IS success: "Information Quality", "System Quality", "Service Quality", "Intention to Use", "Use", "User Satisfaction", and "Net Benefits". The six dimensions can put in context as follows: A system can be evaluated in terms of the information, system, and service quality; these characteristics affect subsequent use or intention to use, and user satisfaction. As a result of using the system, certain benefits will be achieved. If "Net Benefits" is positive from the perspective of the owner or sponsor of the system, then the system will be re-used continually, thus influencing and reinforcing subsequent Use and User satisfaction.

b. Five-Dimension Service Quality Instrument

Focusing on the user-perceived service quality of Web portals, Yang et al. (2005) developed and validated a five-dimension service quality instrument involving: "Usability", "Usefulness of Content", "Adequacy of information", "Accessibility", and "Interaction". This scale provides a useful instrument for researchers aiming to measure the service quality of Web portals and for portal managers who wish to improve their service performance.

c. Students' Perspective Approach

This was developed by Masrek (2007) based on an extract of the updated D&M IS Success Model (DeLone and McLean, 2003). It proposed another approach to assessing user satisfaction with campus portals, which is aimed at evaluating the efficiency or success of campus portal implementation from the perspective of students as users, and sought to investigate the influence of individual factors comprising attitudes towards the portal, personal innovativeness and Web self-efficacy on the efficiency of the portal.

Using the original DeLone and McLean IS Success Model (Delone and Mclean, 1992), Urbach, Smolnik and Riempp (2010) introduced a theoretical model to gain a better understanding of employee portal success. They tested the associations between different models' success dimensions and found that besides the factors contributing to IS success 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. Based on related literature and mainly on the studies presented in this section, a theoretical framework is proposed for assessing the efficiency of Web portals from the perspective of student-users and management of students' records. Therefore, the updated DeLone and McLean Model is found most appropriate for this study based on its broad dimensions for measuring portals' success in promoting efficient management of students' records.

III. Methodology

This study is empirical and being cross-sectional in nature, it examined the relevance of e-portal in the management of student records in tertiary institutions in Nigeria. The data collected from the Bursary, Admission Office, ICT Directorate and Students of the selected tertiary institutions were used to test the hypotheses using independent t-test and OLS regression.

IV. Model Specification

The quantitative analysis is supplemented with a cross-sectional analysis of tertiary institutions using the OLS method. The OLS model allows establishing the association of variables through the use of an equation, by predicting what the value of one will be, given other variables. Hence, we are able to explain how much of a dependent variable is explained given the independent variables. The multiple regression equation allows many independent variables and is generally expressed as

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \dots + \beta_n X_n + \epsilon \dots \dots \dots (1)$$

β is the coefficients and ϵ is called random error term because all points do not fall on a straight line when

plotted on a straight line. Three independent variables were based on the data gathered from Bursary, Admission Office and ICT Directorate. It was hypothesized that independent variables such as cost of Online E-Portal and Human Capacity cost on Staff administering or working with the E-Portal in Admission Office and Bursary affect the dependent variable.

$$eMSR = \beta_0 + \beta_1 iEP + \beta_2 hCI + \beta_3 nRS + \varepsilon \dots\dots\dots (2)$$

eMSR = Efficient Management of Students' Records measured by the formula $eMSR = (\text{Successful Total} \times 100) \div (5 \times \text{Essential Total})$.

iEP = is the explanatory variable taking the value one when the average cost of investment in Online E-Portal (Web Portal, Cyberspace, Hardware Infrastructure and Maintenance) is ₦200M and above, two for ₦100M to ₦199M, three for ₦50M to ₦99M and 4 for below ₦50M.

hCI = is the explanatory variable embodying the value one when the average cost of investment in human capacity development of Staff operating the Online E-Portal (bursary, admission and other admin staff) is ₦200M and above, two for ₦100M to ₦199M, three for ₦50M to ₦99M and 4 for below ₦50M.

nRS = is the explanatory variable assuming the value one for 20,000 and above registered students on the Online E-Portal and zero for below 20,000 registered students since migration to E-Portal.

β_1-3 = Coefficients to be estimated or the Coefficients of slope parameters. The expected signs of the coefficients (a priori expectations) are such that $\beta_1-3 > 0$.

Variable Definition and Measurement

For the purpose of conducting the analysis, Efficient Management of Students' Records (eMSR) was used as dependent variable while Investment in Online E-Portal (iEP), Human Capacity Investment (hCI) and Number of Registered Students' (nRS) were used as independent variables.

DATA ANALYSIS AND HYPOTHESES TESTING

The independent samples T-Test was conducted using the SPSS Version 22.0 to determine if there is a significant difference in the mean scores of eMSR in University and Polytechnic/College of Education. The group statistics would inform us of the extent of comprehensiveness of the eMSR between selected tertiary institutions. In addition, the OLS regression was also used.

DATA ANALYSIS

The result of the scoring assessments by the students and personnel (bursary, admission and other admin staff) shows that majority (88%) of the selected institutions recorded efficiency score that is more than 70 while the remaining 12% recorded efficiency score that is below 70%. (See Appendix)

V. Discussion Of The Result

Hypothesis 1:

There is no significant difference in the level of efficient Management of Students' Records (eMSR) between University and Non-University tertiary institutions in Nigeria.

Decision Rule: Accept H_0 if p-value > significance level, Reject H_0 if p-value < significance level.

Table 2 Group Statistics

	Type of Tertiary Institution	N	Mean	Std. Deviation	Std. Error Mean
Efficient Management of Students' Records	University	21	85.05	4.117	.898
	Polytechnic/College of Education	21	74.76	8.191	1.787

Table 3 Independent Samples Test

	Levene's Test for Equality of Variances		t-test for Equality of Means							
	F	Sig.	T	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference		
								Lower	Upper	
Efficient Management of Students' Records (eMSR)	7.867	.008	5.142	40	.000	10.286	2.000	6.243	14.329	
			5.142	29.498	.000	10.286	2.000	6.197	14.374	

An examination of the group statistics shown in table 2 reveals that the University has a greater mean statistic at 85.05 and a smaller standard deviation of 4.117. This to a large extent reveals that eMSR in the University is obviously higher than polytechnic/College of Education. The Levene's test for equality of variances in Table 3 satisfies the T-test independent sample assumption of equal variances with the Sig.value (p-value) of .008 from the Levene test which is less than significant level (0.05). This means that there is a significant difference in the variances of the University and Polytechnic/College of Education. The column Sig (2tailed) shows us the value .000 which is also below the required cut off of .05. Hence, this study concludes that there is a significant difference between the University and Polytechnic/College of Education in the mean score of eMSR.

Hypothesis 2:

There is no significant relationship between the investment in Online E-Portal and efficient Management of Students' Records (eMSR) in the selected tertiary institutions in Nigeria.

Decision Rule: Accept H_0 if p-value > significance level, Reject H_0 if p-value < significance level.

Table 3 Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.636 ^a	0.405	0.358	6.6123	0.405	8.616	3	38	0

a. Predictors: (Constant), iEP, hCI, nRS

The result for the goodness of fit test as presented in table 3 shows $r = .636$ and a coefficient of determination (i.e. R-squared) of .405. This result implies that the independent variables can predict the value of the dependent variable to the extent of 63.6% and that 40.5% of the variation noticed in eMSR (dependent variable) can be explained by iEP, hCI, and nRS (i.e. the independent variables). More so, the adjusted R2 results which complement the coefficient of determination result indicates clearly that the value of the dependent variable can be explained or predicted by about 35.8% of the independent variables. This value can be considered sufficient because eMSR is influenced by other factors besides iEP, hCI, and nRS. Findings here indicate a significant positive relationship between Efficient Management of Students' Records and the investment in Online E-Portal (Web Portal, Cyberspace, Hardware Infrastructure and Maintenance) with F-statistic = 8.616 and p-value < 0.001 which falls on the rejection region. Therefore, guided by these empirical findings, the alternative hypothesis two, which states that there is a significant relationship between the investment in Online E-Portal and efficient Management of Students' Records (eMSR) in the selected tertiary institutions in Nigeria, is accepted at the expense of the null hypothesis. This is in line with the view expressed by OECD (2010) and supported by Cuban (2013) that as education systems continue to invest in technology they will eventually benefit from its use and also corroborated by Gleason (2000) who argues that Portal technology is a tool to enhance institutional efficiency and productivity. This result shows that Online E-Portal is essential for efficient management of students' records.

Hypothesis 3:

There is no significant relationship between Human Capital Investment (HCI) in bursary, admission and other admin staff and the efficient Management of Students' Records (eMSR).

Decision Rule: Accept H_0 if p-value > significance level, Reject H_0 if p-value < significance level.

Table 4 ANOVA^a

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	1130.164	3	376.721	8.616	.000 ^b
	Residual	1661.455	38	43.722		
	Total	2791.619	41			

a. Dependent Variable: eMRS; b. Predictors: (Constant), iEP, hCI, sTI.

The F-test results (8.616) as depicted in table 4 indicates clearly the fairness and non-biasness of the model specified. It shows simultaneously that the independent variables altogether are significantly associated with the dependent variable. And consistent with our a priori expectation, the p-value of 0.000 falls on the rejection region, hence, null hypothesis three was rejected since the results indicate that a significant positive relationship does exist between the Efficient Management of Students' Records and the investment in human

capacity development of Staff operating the Online E-Portal (bursary, admission and other admin staff). It can be concluded that as tertiary institutions continue to rely on Online E-Portal, investment in the human capacity development of the personnel is essential to ensure continuous efficiency in the management of students' records as this will bring about improved task performance, job efficiency, and overall usefulness being the benefits can be gained through the use of the portal in agreement with view of (Davis, 1989).

Hypothesis 4:

There is no significant relationship between the size of the tertiary institutions and the efficient Management of Students' Records (eMSR) in the selected tertiary institutions in Nigeria.

Decision Rule: Accept H_0 if p-value > significance level, Reject H_0 if p-value < significance level.

Table 5 Coefficients^a

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	
	B	Std. Error	Beta			
1						
	(Constant)	107.751	6.188		17.414	.000
	Investment in Online E-Portal	-5.820	1.749	-.488	-3.326	.002
	Human Capital Investment	-3.355	1.228	-.400	-2.733	.009
	Number of Registered Students	-9.089	3.451	-.390	-2.634	.012

a. Dependent Variable: Efficient Management of Students' Records

The coefficient estimates result presented in table 5 shows a t-statistics value of -2.634 for the Number of Registered Students (nRS) with a p-value of 0.012. This result, therefore, indicates that a significant relationship exists between the number of registered students and the efficient management of students' records (eMSR). The result consequently supports the alternative hypothesis at the expense of the null hypothesis because p-value (0.012) is less than the level of significance (0.05). Based on this result, we can, therefore, accept the alternative hypothesis and state statistically that the size of the students registered on the Online E-Portal has a statistically significant relationship with the efficient manner in which the students' records are managed. This result shows that institutions with a higher number of students tends to be more efficient being that with the use of Online E-Portals more students' records are attended to within a shorter period.

VI. Conclusion And Recommendations

SUMMARY OF FINDINGS

The study examined the impact of investment in Online Education Portal on the efficient management of students' records (in terms of admission, registration and payments) among the tertiary institutions in Nigeria. Consequently, this section provides a summary of empirical findings. The findings are stated as follows;

1. There is a statistically significant difference between the University and Polytechnic/College of Education in the management of students' records since mean statistic of eMSR for the University (85.05) is greater than that of Polytechnic/College of Education (74.76) while their standard deviations are 4.117 and 8.191 respectively.
2. A significant positive relationship exists between Efficient Management of Students' Records (eMSR) and the investment in Online E-Portal (Web Portal, Cyberspace, Hardware Infrastructure and Maintenance) in the selected tertiary institutions in Nigeria because investment in Online E-Portal could predict the Efficient Management of Students' Records to the extent of 63.6%. This value can be considered sufficient because eMSR is influenced by other factors. This shows that Online E-Portal is essential for efficient management of students' records.
3. There is a significant positive relationship does exist between the Efficient Management of Students' Records and the investment in human capacity development of Staff operating the Online E-Portal (bursary, admission and other admin staff). The F-test results of 8.616 show that the independent variables altogether are significantly associated with the dependent variable.
4. The size of the students registered on the Online E-Portal has a statistically significant relationship with the efficient manner in which the students' records are managed.

CONCLUSION

This study has made a contribution to knowledge since a model has been developed to be used in measuring the efficiency of Education Portals in the management of students' records. The study has made its contributions by targeting the tertiary institutions in Nigeria. The paper used quantitative data to conduct the research and four hypotheses were tested. The study established that there is a significant difference between the University and Polytechnic/College of Education with respect to efficient management of students' records using the Online E-Portals. The results indicate that investment in Online E-Portal does have a statistically significant impact on the Efficient Management of Students' Records (eMSR). Furthermore, the study indicates that the Efficient Management of Students' Records (eMSR) is statistically influenced by investment in human capacity development of Staff operating the Online E-Portal (bursary, admission and other admin staff). Therefore, all the four hypotheses of the study have been confirmed. Therefore, it can be concluded that iEP, hCI and nRS significantly affect the efficient management of students' records among the tertiary institutions in Nigeria.

RECOMMENDATIONS

From the findings of this study, the following recommendations are made which may be useful to the relevant stakeholders involved in tertiary education as stated in chapter one of this study:

- i. The study found that University institutions are more efficient in the use of Online E-Portals for the management of students' records, Polytechnic and College of Education should more pragmatic their use of portals through adequate and regular training for the staff operating the portals as well as make the portals user-friendly to students.
- ii. Tertiary institutions should invest more in Online E-Portal and as they invest in technology they will eventually benefit from its use particularly with the speed and accuracy of processing students' payments and other records.
- iii. The success of every technology implementation is largely proportional to the skill level and competency level of the users. Therefore, based on the findings from this study, it is recommended that investment in human capacity development by the tertiary institutions should be proportional to the investment in technological platforms like Online E-Portals. Improved task performance, job efficiency, and overall usefulness of Online E-Portals can largely be guaranteed by adequate investment in the human capacity of the operators.
- iv. Since it is observed that the size of the students registered on the Online E-Portal has statistically significant relationship with the efficient manner in which the students' records are managed, tertiary institutions should rely more on the use of Online E-Portals to facilitate processing of students' records because the E-Portals have capabilities to process a large number of records within a limited time compared to manual processes.

References

- [1]. Abdulkareem, A., Adeyinka, A. and Dike, U. (2013). Design and Development of a University Portal for the Management of Final Year Undergraduate Projects. *International Journal of Engineering and Computer Science*, 2(10), 2911-2920.
- [2]. Bauer, J., Berne, M., and Maitland, C. (2002). Internet access in the European Union and in the United States. *Telematics and Informatics*, 19, 117-137.
- [3]. Brakel, P. (2003). Information portals: a strategy for importing external content. *The Electronic Library*, 21(6), 591-600, <https://doi.org/10.1108/02640470310509153>
- [4]. Cao, X., & Brodnick, R. (2002). *What social factors affect students' use of on-line registration: An exploratory study*. In Proceedings of the Association for Institutional Research 42nd Annual Forum, Toronto, ON, Canada.
- [5]. Cuban, L. (2013). Why so many structural changes in schools and so little reform in teaching practice? *Journal of Educational Administration*, 51(2), 109-125.
- [6]. Damsgaard, J. and Scheepers, R. (1999). Power, influence and intranet implementation: A safari of South African organizations. *Information Technology & People*, 12 (4), 333-358. <https://doi.org/10.1108/09593849910301630>
- [7]. Davison, R., Martinsons, M. & Ou, C. (2012). The roles of theory in canonical action research. *MIS Quarterly*, 36(3), 763-786.
- [8]. Dima, J. & Mutaz, M. (2012). *Portals and Task Innovation: A Theoretical Framework Founded on Business Intelligence Thinking*. Paper presented at the Eleventh Annual International Conference on Business Intelligence and Knowledge Economy. Retrieved from <https://arxiv.org/abs/1208.0892>.
- [9]. Floyd, D.L. and Casey-Powell, D. (2004). New Roles for Student Support Services in Distance Learning. *New Directions for Community Colleges*, 128, 55-64. Retrieved December 14, 2018, from <https://www.learntechlib.org/p/100773/>.
- [10]. Gleason, B. (2000). Boston College university-wide information portal: concepts and recommended course of action. In Abdulkareem, A., Adeyinka, A. and Dike, U. (2013). Design and Development of a University Portal for the Management of Final Year Undergraduate Projects. *International Journal of Engineering and Computer Science*, 2(10), 2911-2920.
- [11]. Gregor, S. (2006). The nature of theory in information systems. *MIS Quarterly*, 30(3), 611-642.
- [12]. Heila, P. (2003). Design and Development of an Academic Portal. *Academic Information Service, University of Pretoria, South Africa*, 53, 118-129.
- [13]. Katz, R. (2002) Web portals and higher education; technologies to make it personal. In Abdulkareem, A., Adeyinka, A. and Dike, U. (2013). Design and Development of a University Portal for the Management of Final Year Undergraduate Projects. *International Journal of Engineering and Computer Science*, 2(10), 2911-2920

- [14]. Lakos, A. (2004). Portals in Libraries Assessment and Outcomes. *Bulletin of the American Society for Information Science and Technology*, 31(1), 19-21. Retrieved November 30, 2018 from <https://doi.org/10.1002/bult.1720310111>
- [15]. Looney, M. and Lyman, P. (2000). Portals in higher education. *Educause Review*35(4).
- [16]. Markus, M. and Robey, D. (1988). Information technology and organizational change:Causal structure in theory andresearch. *Management Science*, 34(5), 583 – 598.
- [17]. Matovu, M. (2009). *Availability, Accessibility and Use of ICT in Management of Students' Academic Affairs in Makerere University*, Makerere University. <http://hdl.handle.net/123456789/909>
- [18]. Moraga, A., Calero, C., & Piattini, M. (2004). *A First Proposal of Portal Quality Model*. IADIS International Conference e-Society.
- [19]. Ngwenyama, O. and Lee, A. (1997). Communication richness in electronic mail: Critical social theory and the contextuality of meaning. *MIS Quarterly*, 1997, 21(2), 145 – 167.
- [20]. Organisation for Economic Co-operation and Development (OECD) (2010). *Inspired by Technology, Driven by Pedagogy: A Systemic Approach to Technology-Based School Innovations*. Paris: OECD Publishing.
- [21]. Pena-Lopez, I. (2007). The Personal Research Portal: Web 2.0 Driven Individual commitment with open access development. *Knowledge Management for Development Journal*, 3(1) 35-48.
- [22]. Pena-Lopez, I. (2007). The Personal Research Portal: Web 2.0 Driven Individual commitment with open access development, *Knowledge Management for Development Journal*, 3 (1), 35-48.
- [23]. Sanghee, L., Terence, J., Suresh, M. and Nigel, P. (2013). Theories Used in Information Systems Research: Insights from Complex Network Analysis. *Journal of Information Technology Theory and Application*, 14(2), 5 – 46.
- [24]. Secreto, P. and Pamulaklak, R. (2015). Learners' Satisfaction Level with Online Student Portal asaA Support System in an Open and Distance E-learning Environment (Odel). *Journal of Distance Education*, 16(3), 1302-6488.
- [25]. Strauss, Howard (2000) CREN TechTalk Questions and Brief Answers on Portals. CNI Spring Task Force Meeting, March 27-28. Retrieved December 10, 2018, from <https://www.cni.org/wp-content/uploads/2013/06/Strauss-WP2000Stf.pdf>
- [26]. Tejaswini, C., Deb, D., Michelle, G. and Alvino, V. (2015). Online College Portal. *International Journal of Current Engineering and Technology*, 5(1), 976-980. Retrieved from <http://inpressco.com/category/ijcet>
- [27]. The Commonwealth of Learning (2002). *Best Practice in Education Portals*. Vancouver, BC: The Commonwealth of Learning.
- [28]. Urbach, N., Smolnik, S., & Riempp, G. (2010). An empirical investigation of employee portal success. *Journal of Strategic Information Systems*, 19, 184–206.
- [29]. Venkata K., Dinesh, D. and Suresh, C. (2016). Development of a Student Database Management System for a University. *International Journal of Engineering Research and Application*, 6(8), pp.16-24.
- [30]. Weber, R. (1987). Toward a theory of artefacts: A paradigmatic base for information systems research. *Journal of Information Systems*, 1(2), 3 – 19.
- [31]. White, C. (2003). Determining Enterprise Portal ROI, in: DM Review. Retrieved from http://www.providersedge.com/docs/km_articles/Determining Enterprise Portal ROI.pdf.

APPENDIX

Table 1: Summary of Collected Data

	B3	C1	C2	D1
UNILAG	85	1	1	1
FUNAAB	81	1	1	1
UI	87	1	1	1
OAU	88	1	1	1
FUTA	82	1	1	1
UNIBEN	89	1	0	1
UNIPORT	89	1	0	1
UNIZIK	83	1	0	1
UNN	91	1	0	1
UNILORIN	80	1	1	1
FUTO	89	1	1	1
LASU	87	1	1	1
TASUED	80	1	0	1
OOU	83	0	0	1
LAUTECH	86	0	1	1
AAU, EKPOMA	83	0	1	1
DELSU	81	0	1	1
RSUST	86	1	1	1
EKSU	76	0	1	1
AAU, AKUNGBA	91	0	0	1
KWASU	89	0	0	1
Yaba Tech.	67	1	1	1
Fed., Poly, Ilaro	68	1	0	1
Fed., Poly, Ede	79	0	1	1

Fed., Poly, Ado	64	1	1	1
Fed., Poly., Auchu	74	1	0	1
Fed., Poly., Oko	79	1	0	1
Fed., Poly., Offa	54	0	1	1
Fed., Poly., Nekede	74	0	1	1
Lagos State Poly.	67	1	0	1
Moshood Abiola Poly., Abeokuta	74	1	1	1
Ibadan Poly. Eruwa	70	1	1	1
Rufus Giwa Poly., Owo	85	1	1	0
Ire Poly. Osun Sta.	72	1	0	0
Kwara State Poly.	74	0	0	1
FCE(Tech), Akoka	84	0	1	1
FCE, Osiele	81	0	0	1
Adeniran Ogunsanya Col. Of Edu.	83	1	1	1
Tai Solarin Col. of Edu., Omu	85	0	1	0
Col. of Edu., Ekiadolor	70	0	0	0
Adeyemi Col. of Edu., Ondo	84	0	0	0
Osun State Col.of Edu, Ilesa	83	0	0	0

B3 = eMSR, C1 = iEP, C2 = hCI, D1 = nRS

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