

APPLICATION OF EDUCATION MANAGEMENT INFORMATION SYSTEM (EMIS) TO THE MANAGEMENT OF PUBLIC UNIVERSITIES IN RIVERS STATE OF NIGERIA

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ABSTRACT

This study examined application of education management information system (EMIS) to the Management of Public Universities in Rivers State, Nigeria. A descriptive survey research design was used. The sample size of 247 administrators and lecturers in the three public universities in Rivers State, representing 10%, was drawn using the stratified random sampling technique to identify the subset. The instrument titled “Education Management Information in the Management Universities Questionnaire” (EMIMUQ) was designed by the researchers. The reliability obtained was 0.89. The four research questions were analyzed using Mean Score (X) Standard Deviation (SD), Rank Order (RO) and Decision Rule, and z-test was used to test the null hypotheses at 0.05 level of significance, respectively. The findings revealed that the application of education management information system (EMIS) tools cannot only promote effective teaching and learning in the universities but also help to achieve the global objectives of establishment. Based on this, the following recommendations were made: the Rivers State government should prioritize the full integration of Education Management Information System (EMIS)-based scheme into teaching and learning as well for researchers; so as to give our universities competitive advantages over other universities and the National Universities Commission should make a comprehensive application for the use of Education Management Information System (EMIS) to the universities, in their day to day administrative functions in line with innovative global standard.

INTRODUCTION

The administration of university education has a broad complex and dynamic functions, because these functions emanated from the university-system's activities to generate a wide range of recording activities for both students and staff which as to be properly kept. It is for well processed and appropriately utilized resources, to facilitate the process of effective and efficient university administration which includes; accounting, auditing, budgeting, credit and collection, university students enrollment and results records, staff and record with statistics that grow out of the operational activities of the university system, including the forces that influence human behaviour in the university organization, Oloko (2012). In today's globalized university education system, quality is no longer measured only by a number of staff employed, availability of funds, facilities, equipment, research and instructional materials available or acquired but also by the height of technological exposure and technologies put in place to drive, facilitate and support quality education and the entire system, Briggs (2016). In more recent times, the performance of the university system has come under criticism because it is said that both staff and students do not perform their duties in line with the ethical global standard practices of innovation in service and technology. The growing complexities in the world today demand university administrators who can do with the aid of modernized management information system to handle their information management process properly in the university system to meet their information needs in the management of the university system. According to Akolawole (2014), Management Information System (MIS) program is designed for the students who wish to prepare themselves for professional careers in information processing or information system in business and government because of program development, implementation, maintenance and management of organizational informational systems. Another objective of the program is to provide students with both theoretical knowledge and hands-on experience. The program requires a practicum. Practical experience enables graduates to become productive in any setting, more quickly.

Adedudu (2015), also sees management information system as a design to assist university administrators in performing their work through an organized and most effective mode of information collection, processing, storage and retrieving model. Modern management information system is a network of computer-based processing procedures that are integrated with manual and other process to provide truly effective and efficient information to support managerial planning and control. The use of MIS in educational management has rapidly increased due to its efficiency, effectiveness and it important to university administrators who used to spend large amount of time in solving

complex allocation problems (eg. Staff allocation, resource allocation, timetable) and monitor the university operations, now having better options due to enhanced technology. MIS facilitates the decentralization of work tasks and their coordination in an interactive network of communication, in real time (Castells, 2016).

According to Scotts (2016) MIS is seen to have the potential to make a significant contribution to the teaching, learning and administration in university, as the MIS allow for greater flexibility and networking that emphasizes interdependence, interaction, and constant adaptation to an ever-changing environment. Weston (2016), describes management information system (MIS) as an organizational method of providing past, present and projected information related to internal operations and external intelligence. It supports the planning, control and operation functions of an organization by furnishing uniform information at the proper time frame to assist the decision makers. Management Information System is a system that uses the information required by an organization's management at every level of making operational, tactical and strategic decisions. Its main objective is to design and implement procedures, processes and routines that provide suitably detailed reports in an accurate, consistent and timely manner. As part of the effective administration process, a good educational administrator organizes, plans, projects, forecasts, and determines standards for, as well as controls the educational institutions or system for which to provide timely reports to: the controlling management boards and ministries. Functionally, the administration of university system today requires administrators that can carry out a structural set of operations in form of objectives definition, by policies, designs and development of functions, definition of appropriate operation with tasks to achieve those objectives through the functions, definition and forecasting; however, such structured tasks can only be effectively carried out if the management process is adequately supported by a system of organized information processing storage and retrieved information system, (Nwangwu, 2013). For emphasis, it is important to briefly draw a distinction between Education Management Information (EMI) and Education Information Management (EIM), while the former is any system that provides information for the management activities carried out in educational settings such as students admission, tuition payment, course registration, academic programmes, accommodation records, academic records and so on, the latter is how information attained within any given educational system is handled in pursuit of educational goals. The former basically deals with that (a system) which generates information electronically or digitally to help in making management or administrative decisions, the latter mainly focuses on handling information generated. The term "Education information management (EIM) is almost exclusively reserved for

computerized educational setting which consists of hardware and software that accept and store, process and retrieve information. Education Management Information (EMI) promotes quality assurance in universities in a number of ways, such as cost reduction, time and energy waste prevention, speed, easy interaction, convenience, flexibility and lot more, (Brigg, 2016).

In most cases, the main goals of university educational system are specifically to promote the country's (Nigeria) research capacity interest and produce majority of the skilled professionals that are required in the labour market. According to Federal Republic of Nigeria in National Policy.

- Contributes to national development through high level relevant manpower training.
- Provides accessible and affordable quality learning opportunities in formal and informal education responses to the needs and interests of all Nigerians.
- Provides high quality career counseling and life long learning programme that prepare students with knowledge and skills for self-reliance and the world of work.
- Reduces skill shortage through the production of skilled manpower relevant to the needs of the labour market.
- Promotes and encourages scholarship entrepreneurship and community service.
- Forges and cements national unity
- Promotes national and international interactions.

From the foregoing, it can be deduced that Nigeria strategies for the realization of national unity, development and transformation are tied to tertiary education; especially university education. Some of the education management information support tools that can be employed in university education they include and not limited to the internet, the intranet, the extranet, the worldwide web, bulletin board, computers, e-mail, model, phones, disk drives, printers, scanners, optical character readers, magnetic risk character readers, optical mark readers, swipe cards, smart cards, magnetic tapes and disks, optical disks, satellite, electronic conferencing, internet telephony, web-browsers, database, word processing spreadsheet etc. Given the globalized nature of university across the globe and the quest to dominate the 21st century knowledge economy, there is no gain saying that promoting education management information in all the Nigeria universities, particularly the universities in Rivers State, will entrench that quality required of them not only to survive and succeed, but also to excel nationally and internationally. This

paper will give an account of the studies that have examined the application of education management information system (EMIS) to the management of public universities in Rivers State.

STATEMENT OF THE PROBLEM

Across the globe, concerted effort is now being deployed by university management to position, as well effectively and efficiently manage their self-objectives for establishment. But in recent times, it has been observed that most public universities in Rivers State and beyond do not have the prerequisite to meet the global challenges on the innovation concerning education management information system's (EMIS) needs for university to function in line with global practice. Consequently, costly damages are done to the member of university community due to unwanted delays associated with paper-based administrative activities such as circulation of memos for authorization, directives, instructions, among others. specifically, the student are still being exposed to undue stress as they struggle to learn in overcrowded classroom, where lecturers have to shout on top of their voices instead of using EMI support tools such as electronic bulletin boards, or at least e-learning platforms, which will result in achieving the educational targets and outcome. The study tends to address the application of education management information system (EMIS) to the management of public universities in Rivers State, this stands as the truth of the study.

PURPOSE OF THE STUDY

The main purpose of this study is to investigate ways Education Management Information System (EMIS) can be applied in the management of Public Universities in Rivers State, Nigeria. More specifically, the objectives are as followed:

- Find out how the application of Education Management Information System (EMIS) support tools can promote teaching and learning in public universities in Rivers State of Nigeria
- Ascertain how Education Management Information System (EMIS) can be applied to prevent time wastage in the management of public universities in Rivers State, Nigeria
- Investigate ways Education Management Information System (EMIS) can be applied to reduce cost in the management of public universities in Rivers State, Nigeria.

- Examine the challenges that can be encountered by the management in the application of Education Management Information System (EMIS) in public universities in Rivers State, Nigeria.

RESEARCH QUESTIONS

In order to achieve the objectives of the study, the following research questions were raised

- RQ₁:** In what ways do the application of Education Management Information System (EMIS) tools promote teaching and learning in public universities in Rivers State, Nigeria?
- RQ₂:** In what way does Education Management Information System (EMIS) tools be applied to prevent time wastage in management of public universities in Rivers State, Nigeria?
- RQ₃:** In what ways can Education Management Information System (EMIS) tools be applied to reduce cost in management public universities in Rivers State, Nigeria?
- RQ₄:** What are the challenges that can inhibited by the management in the application of Education Management Information System (EMIS) tools in public universities in Rivers State of Nigeria?

HYPOTHESES

The following null hypotheses tested at 0.05 level of significance guided the conduct of this study:

- HO₁:** There is no significant difference between the mean rating of public universities' administrators and lecturers on ways application of Education Management Information System (EMIS) tools can promote teaching and learning in the public universities in Rivers State, Nigeria.
- HO₂:** There is no significant difference between the mean ratings of public universities' administrators and lecturers on how Education Management Information System (EMIS) tools can be applied to prevent time wastage in public universities in Rivers State, Nigeria.
- HO₃:** There is no significant difference between the mean ratings of public universities' administrators and lecturers on how Education Management Information System

(EMIS) tools can be applied to reduce cost in management of public universities in Rivers State, Nigeria.

HO₄: There is no significant difference between the mean rating of public administrators and lecturers on the challenges encountered by the management in the application of Education Management Information System (EMIS) tools in public universities in Rivers State, Nigeria.

METHODOLOGY

A descriptive survey design was adopted for the study on application of education management information system (EMIS) to the management of public universities in Rivers State, Nigeria. The population elements of the study consist of administrators and lecturers in the three public universities in Rivers State which includes University of Port Harcourt, Choba, Rivers State; Rivers State University of Science and Technology, Port Harcourt, Rivers State Ignatius Ajuru University of Education, Port Harcourt, Rivers State; See table I below for further clarifications.

Table 1: Showing the population and sample size (10%) of the respondents of the three public universities in Rivers State.

No	Names of Universities	No of Department	No of Administrators	No of Lecturers	Total population	Total population size (10%)
1	UNIPORT	68	82	1241	1323	132
2	RSUST	34	58	524	582	58
3	IAUE	30	36	531	567	57
4	Total	132	176	2296	2472	247

Source: Registrar units; establishment of the three public universities in Rivers State.

Stratified random sampling techniques were adopted for the study, and balloting method was used to identify the sub sample without replacement. The instrument used for data collection for the study was a questionnaire titled “Education Management Information in the Management Universities Questionnaire” (EMIMUQ), which consists of two sections. Section A: provides answers to the demography variables and section B provides answers to the sectionalization in conformity with the four (4) research questions; which were addressed with the modified 4-points Likert scale of Strongly Agree SA = 4 points; Agree (A) = 3 points; Disagree (D) = 2 points and Strongly Disagree (SD) = 1 point; having a total items of 60. The face and content validity was established by the researcher and the internal consistency was determined using the Pearson's Product Moment Coefficient (r) = 0.89, using the pilot survey of 50 respondents which

were not part of the sample size that was used for the study. The researcher personally administered 247 questionnaires to the respondents and 230 were successfully filled and returned representing 93% of high respond rate. The four (4) research questions were analyzed using the Mean Score (X) Standard Deviation (SD), Rank Order (RO), and Decision Rule respectively while z-test was used to test the null hypotheses at 0.05 level of significance.

RESULTS

The following tables below are the results of the analysis from the research questions and tested null hypotheses of 0.05 level of significance

Research Question 1

In what ways do the application of Education Management Information System (EMIS) tools promote teaching and learning in public universities in Rivers State of Nigeria?

Table 2: Mean score \bar{x} , standard deviation (SD), rank order and decision rules of ways Education Management Information System (EMIS) tools promote teaching and learning in public universities in Rivers State, Nigeria

S/N	Items	Administrators		Lecturers		$\Sigma \frac{\bar{x}-\bar{x}_c}{n}$	Rank Order	Decision Rules
		\bar{x}	SD	\bar{x}	SD			
1	Electronic bulletin board can support teaching	3.19	1.79	3.15	1.77	3.17	8 th	Agreed
2	Electronic blackboard learning system can complement course content	3.18	1.78	3.32	1.82	3.25	6 th	Agreed
3	Assignment posted to students on -line can promote teaching and learning	2.97	1.72	3.23	1.79	3.10	10 th	Agreed
4	Posting student's grades on -line for them to view can promote their interest in learning	3.75	1.94	3.45	1.88	3.60	4 th	Agreed
5	Search engine can encourage interaction and collaboration	2.51	1.58	2.57	1.60	2.54	15 th	Agreed
6	Search engine can facilitate researches that allow interactions	2.53	1.59	2.63	1.62	2.58	14 th	Agreed
7	Search engine can help to enhance teaching and learning	2.63	1.62	2.73	1.65	2.68	12 th	Agreed
8	Blog postings can facilitate learning in universities	2.83	1.68	2.81	1.68	2.81	11 th	Agreed
9	Teachers and students can use blog postings to solve problems and arouse thinking skill	3.09	1.76	3.13	1.77	3.11	9 th	Agreed
10	E-learning application can provide forum where teachers and students meet to interact on-line	3.18	1.78	3.22	1.79	3.20	7 th	Agreed
11	Power point can be a useful tool that quickly supports digital presentation for effective teaching	3.84	1.96	3.88	1.97	3.86	3 rd	Agreed
12	E-mail platform can enable teachers to reach their students anytime	2.68	1.64	2.66	1.63	2.67	13 th	Agreed
13	Microsoft access/database soft -ware can be useful tools to promote configurations	3.28	1.81	3.34	1.83	3.31	5 th	Agreed
14	Computers and the internet can highly be necessary in the university teaching and learning process	3.88	1.97	3.92	1.98	3.90	1 st	Agreed
15	On-line library facilities can facilitate students' researchers	3.86	1.96	3.88	1.97	3.87	2 nd	Agreed
Aggregate Mean Score		3.16		3.19		3.17		
Average Aggregate Mean Score			3.17					

3.17

The results in table 2 revealed that all the items in 1 – 15 were agreed and the average mean score, 3.17, was greater than the criterion mean score of 2.50. This implies, that both the administrators and lecturers agreed that application of Education Management Information System (EMIS) tools promote teaching and learning in public universities in Rivers State, Nigeria.

Research Question 2

In what way does Education Management Information System (EMIS) tools can be applied to prevent time wastage in the management of public universities in Rivers State, Nigeria?

Table 3: Mean score \bar{x} , standard deviation (SD), rank order and decision rules of ways Education Management Information System (EMIS) tools be applied to prevent time wastage in the management of public universities in Rivers State, Nigeria

S/N	Items	Administrators		Lecturers		$\Sigma \frac{\bar{x}-2.5}{n}$	Rank Order	Decision Rules
		\bar{x}	SD	\bar{x}	SD			
16	University portals can be veritable tools for quick sharing of information about the institution	3.19	1.79	3.23	1.79	3.21	10 th	Agreed
17	University portals as learning platform can prevent time wastage	3.27	1.81	3.29	1.81	3.28	9 th	Agreed
18	Examination portals can be used to monitor and	3.83	1.96	3.87	1.97	3.85	2 nd	Agreed
19	Electronic storage devices can be used to recall, lecturers examination records	3.83	1.96	3.79	1.95	3.86	1 st	Agreed
20	EMI support tools can prevent time wastage in teaching and learning process	2.97	1.72	2.83	1.68	2.90	13 th	Agreed
21	EMI support tools can encourage flexibility thereby saving time	2.75	1.68	2.91	1.71	2.83	15 th	Agreed
22	EMI support tools have the capacity of increasing productivity level in university education thereby foreclosing time wastage.	2.95	1.72	3.15	1.77	3.05	12 th	Agreed
23	EMI support tools can promote transparency.	3.94	1.98	3.74	1.93	3.84	3 rd	Agreed
24	EMI support tools can promote speed through saving time	3.55	1.88	3.35	1.83	3.45	6 th	Agreed
25	EMI support tools can reach a larger audience quickly which in turn save time.	3.26	1.81	3.32	1.82	3.29	8 th	Agreed
26	Payments of fees can be made quicker and easier through POS machines than through any other processes.	3.41	1.85	3.47	1.86	3.44	7 th	Agreed
27	Electronic mail can be a tool where all documents relating to a meeting are sent on-line ahead of time	3.57	1.89	3.53	1.88	3.55	5 th	Agreed
28	Electronic notice boards can be used to send messages quickly across a wider audience	3.63	1.91	3.53	1.88	3.58	4 th	Agreed
29	Electronic conferencing can help lecturers collaborate and work as a team	3.17	1.78	3.23	1.79	3.20	11 th	Agreed
	Aggregate Mean Score	3.38		3.37		3.38		
	Average Aggregate Mean Score		3.38					

Result

The results in table 3 revealed that all the items in 16-29 were agreed and the average mean score, 3.38, was greater than the criterion mean score of 2.50. This implies, that both the administrators and lecturers agreed that Education Management Information System (EMIS) helps to prevent time wastage in the management of public universities of Rivers State, Nigeria.

Research Question 3

In what ways can Education Management Information System (EMIS) tools be applied to reduce cost in management of public universities in Rivers State, Nigeria?

Table 4: Mean score \bar{x} , standard deviation (SD), rank order and decision rules of ways Education Management Information System (EMIS) tools be applied to reduce cost in public universities in Rivers State of Nigeria

S/N	Items	Administrators		lecturers		$\Sigma \frac{f(x_i)}{n}$	Rank Order	Decision Rules
		\bar{x}	SD	\bar{x}	SD			
30	Computer accounting application can be used for cost reduction in payroll operation	3.20	1.79	3.32	1.82	3.26	14 th	Agreed
31	Computer can be used on e-line to sell university academic programme forms	3.97	1.99	3.83	1.96	3.90	5 th	Agreed
32	Advertisement for job vacancies, tender, auction sales, etc can be possible through the application of the internet.	3.88	1.97	3.94	1.98	3.91	4 th	Agreed
33	The internet can be cheap for staff and students record keeping and tracking	3.67	1.92	3.73	1.93	3.70	10 th	Agreed
34	Admission/registration documentation process through the use of the internet can be cheap and useful.	3.58	1.89	3.72	1.93	3.65	11 th	Agreed
35	The financial information gathering process can reduce cost through the use of internet	3.44	1.85	3.52	1.88	3.48	13 th	Agreed
36	Database management of university's population through the use of the internal can reduce cost.	3.61	1.9	3.67	1.92	3.64	12 th	Agreed
37	Purchasing of materials in your university with the use of the internet can reduce	3.77	1.94	3.83	1.96	3.80	8 th	Agreed
38	The use of electronic bulletin boards in giving out notice of meetings can reduce cost in the management of university.	3.87	1.97	3.97	1.99	3.93	2 nd	Agreed
39	Using teleconferencing platforms in conducting committee of vice-chancellors' meetings can reduce cost	3.97	1.99	3.99	1.99	3.98	1 st	Agreed
40	The use of e-mail to exchange/share information increases interaction towards effective cost reduction	3.88	1.97	3.86	0.93	3.87	7 th	Agreed
41	Using internet to disseminate information can reduce cost.	3.91	1.98	3.93	1.98	3.92	3 rd	Agreed
42	The use of online connectivity for students accommodation allocation can reduce cost	3.77	1.94	3.83	1.96	3.80	8 th	Agreed
43	The use of e-mail in publication of official notices in your university as means of information the members of staff can reduce cost.	3.88	1.97	3.92	1.98	3.90	5 th	Agreed
Aggregate Mean Score		3.74		3.73		3.74		
Average Aggregate Mean Score			3.74					

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The results in table 4 revealed that all the items in 30-43 were agreed and the average mean score, 3.74, was greater than the criterion mean score, 2.50. This implies, that administrators and lecturers agreed that Education Management Information System (EMIS) tools can be applied to reduce cost in management of public universities in Rivers State, Nigeria.

Research Question 4

What are the challenges that can be inhibited by the management in the application of Education Management Information System (EMIS) tools in public universities in Rivers State, Nigeria?

Table 5: Mean score \bar{x} , standard deviation (SD), rank order and decision rules of challenges of Educational Management Information System tools in public universities in Rivers State, Nigeria

S/N	Items	Administrators		Lecturers		$\Sigma \bar{x}$	Rank Order	Decision Rules
		\bar{x}	SD	\bar{x}	SD			
44	Improper funding	3.17	1.78	3.19	1.79	3.18	8 th	Agree
45	High cost of hardware and software	3.34	1.83	3.52	1.88	3.43	4 th	Agree
46	Shortage of skilled manpower	3.68	1.92	3.78	1.94	3.73	1 st	Agree
47	Epileptic power supply	3.21	1.79	3.35	1.83	3.28	6 th	Agree
48	Lack of feasible strategic plan for the integration of EMI based programmes into the university	3.47	1.86	3.63	1.91	3.55	3 rd	Agree
49	Lack of EMI-support facilities and equipment	3.57	1.89	3.67	1.92	3.62	2 nd	Agree
50	Poor implementation of EMI-based policies and programmes	2.97	1.72	3.03	1.74	3.00	10 th	Agree
51	Display of obvious unfriendly attitude towards the use of EMI support tools by the university staff and students	3.24	1.8	3.44	1.85	3.34	5 th	Agree
52	Lack of proficiency and literacy among students and staff.	3.18	1.78	3.24	1.80	3.21	7 th	Agree
53	Bandwidth limitation	3.08	1.75	3.12	1.77	3.10	9 th	Agree
	Aggregate Mean Score	3.29			3.39			
	Average Aggregate Mean Score		3.34					

Result

The results in table 5 revealed that all the items in 44-53 were agreed and the average mean score, 3.34, was greater than the criterion mean score, 2.50. This implies, that administrators and lecturers agreed that they are numerous challenges affecting the application of Education Management Information System (EMIS) in the management of public universities in Rivers State, Nigeria.

Test of Hypotheses

Hypothesis 1

There is no significant difference between the mean rating of public universities administrators and lecturers on ways application of Education Management Information System (EMIS) tools can promote teaching and learning in public universities in Rivers State, Nigeria.

Table 6: z -test of no significant difference between the mean ratings of public universities administrators and lecturers on ways application of Education Management Information System (EMIS) tools can promote teaching and learning in the public universities in Rivers State, Nigeria.

Items	N	\bar{x}	SD	df	Level of significance	z-cal	z-crit	Remarks
Administrators	300	3.16	1.78					
Lecturers	200	3.19	1.78	228	0.05	\pm	\pm	Accepted
Total	230	6.35	3.56			1.32	1.96	

The results in table 6 revealed that the tested null hypothesis 1 of z-calculated value ± 1.32 is less than the z-critical value ± 1.96 at 288 degree of freedom with 0.05 level of significance. This implies that, there is no significant difference between the mean ratings of public universities administrators and lecturers on ways application of Education Management Information System (EMIS) tools can promote teaching and learning in the public universities in Rivers State of Nigeria

Hypothesis 2

There is no significant difference between the mean rating of public universities administrators and lecturers on how Education Management Information System (EMIS) tools can be applied to prevent time wastage in public universities in Rivers State, Nigeria.

Table 7: z -test of no significant difference between the mean ratings of public universities administrators and lecturers on how Education Management Information System (EMIS) tools can be applied to prevent time wastage in public universities in Rivers State, Nigeria.

Items	N	\bar{x}	SD	df	Level of significance	z-cal	z-crit	Remarks
Administrators	300	3.38	1.84					
Lecturers	200	3.37	1.83	228	0.05	\pm	\pm	Accepted
Total	230	6.75	3.67			1.41	1.96	

The results in table 7 revealed that the tested null hypothesis 2 of z-calculated value ± 1.41 is less than the z-critical value ± 1.96 at 288 degree of freedom with 0.05 level of significance. This implies that, there is no significant difference between the mean ratings of public universities administrators and lecturers on how Education Management Information System (EMIS) tools can be applied to prevent time wastage in public universities in Rivers State, Nigeria

Hypothesis 3

There is no significant difference between the mean rating of public universities administrators and lecturers on how Education Management Information System (EMIS) tools can be applied to reduce cost in the management of public universities in Rivers State, Nigeria.

Table 8: z-test of no significant difference between the mean ratings of public universities administrators and lecturers on how Education Management Information System (EMIS) tools can be applied to reduce cost in the management of public universities in Rivers State, Nigeria

Items	N	\bar{x}	SD	df	Level of significance	t-cal	t-crit	Remarks
Administrators	300	3.74	1.94					
Lecturers	200	3.73	1.93	228	0.05	± 1.47	± 1.96	Accepted
Total	230	7.47	3.87					

The results in table 8 revealed that the tested null hypothesis 3 of z-calculated value ± 1.47 is less than the z-critical value ± 1.96 at 288 degree of freedom with 0.05 level of significance. This implies that, there is no significant difference between the mean rating of public universities administrators and lecturers on how Education Management Information System (EMIS) tools can be applied to reduce cost in the management of public universities in Rivers State, Nigeria

Hypothesis 4

There is no significant difference between the mean rating of public administrators and lecturers on the challenges encountered by the management in the application of Education Management Information System (EMIS) tools in public universities in Rivers State, Nigeria.

Table 9: z -test of no significant difference between the mean rating of public administrators and lecturers on the challenges encountered by the management in the application of Education Management Information System (EMIS) tools in public universities in Rivers State, Nigeria.

Items	N	\bar{x}	SD	df	Level of significance	t-cal	t-crit	Remarks
Administrators	300	3.29	1.82					
Lecturers	200	3.39	1.84	228	0.05	±	±	Accepted
Total	230	6.68	3.66			1.56	1.96	

The results in table 9 revealed that the tested null hypothesis 4 of z-calculated value ± 1.56 is less than the z-critical value ± 1.96 at 288 degree of freedom with 0.05 level of significance. This implies that, there is no significant difference between the mean rating of public administrators and lecturers on the challenges encountered by the management in the application of Education Management Information System (EMIS) tools in public universities in Rivers State, Nigeria

DISCUSSION OF THE FINDINGS

The results in research question one and hypotheses one revealed that both administrator and lecturers agreed that education management information support (EMIS) is a tool used to promote teaching and learning in public universities in Rivers State, Nigeria. The results revealed that (EMIS) support-tools create virtual teaching and learning situation, where everything is very easy, teacher can teach, interact with students anytime and anywhere, post assignments to students and receive the same from them, publish scores, research into students' academic problems without any need to meet them face to face and do a lot more of things at his own convenient time and place. In line with Oloko (2015), findings revealed that EMIS support-tools cannot only facilitate effective teaching and learning in any university system but also can adequately support robust researches. Also, in line with the support of the findings Adebayo, (2014), it was revealed that (EMIS) helps to improve on students' academic performance through e-learning applications, power-point, e-mail, and computers. The software as well as communication networks can generate vital information for organizing and implementing academic activities. The result is supported by Ogunleye (2015), which discovered that there exists a significant relationship between the application of EMIS-based scheme with academic and performance-centered quality assurance.

The results in the research question two and null hypotheses two respectively revealed that both administrators and lecturers agreed that (EMIS) tools help to prevent time wastage in

the management of public universities in Rivers State. In line with the findings by Sasidek (2015), which indicated that the use of (EMIS) support-tools in educational setting prevents time wastage and guarantees flexible learning environment, productive, accountable and transparent management of educational resources. Also Adewole (2015), revealed that (EMIS) helps to maximize the usage of time in the day to day administration of public senior secondary schools in Lagos State. The result from the study revealed that EMIS-support tools can be used in reading to a large audience quickly; which in turn saves time, unlike the traditional mode of teaching and learning, help lecturers for quick collaboration to work as a team, making payments quicker and easier than any other system. With POS, students or any other person needs not to waste their time visiting the finance units of universities and queuing up to make any payments. The result of finding on research question four revealed the (EMIS) support-tools are used to reduce cost in the management of public universities in Rivers State; which showed that EMIS tools can reduce cost in payroll operations, selling of university academic programme forms, advertisement of job vacancies, job tender, auction sales, etc. This result is in conformity with the views expressed by Ochogwu (2012), that EMIS is a system that has the unfailing capacity to generate cost reduction in any given management process. The result was further affirmed by the study of Ukachukwu (2014), that revealed EMIS-support-tools provide the cheapest means of circulation and communication of notices, policies, directives and decisions as well as the publication of official notices for the purpose of keeping the members of university community duly informed. The results of findings on research question four revealed that (EMIS)-support-tools in the management of public universities in Rivers State as numerous challenges factoring the effective and efficient implementation of the (EMIS); which includes; inadequate funding, high cost of hardware and software, shortage of skilled manpower, epileptic power supply, lack of feasible strategic plan for the integration of EMIS-based programmes into the university system and lack of EMIS support facilities and equipment, lack of (EMIS)- proficiency and literacy among staff and students, are bandwidth limitation. The results is supported by the view expressed by Okike (2014), that the above identified inhibitions are the major factors limiting the application of EMIS-support-tools in the management of public universities in Rivers State and beyond.

CONCLUSION

It is appropriate to conclude in line with the result of the findings that the application of Education Management Information System (EMIS) tools cannot only promote effective teaching and learning in our universities but also have the capacity to manage students' performance effectively, to prevent time wastage and reduce cost in the

management and enhance collaboration across academic and administrative levels of public universities in Rivers State.

Recommendations

Based on the findings, the following recommendations were made:

- The public universities in Rivers State should brace up with the best and current global practices by completely integrating university management into the mainstream of Education Management Information System (EMIS) scheme of operation.
- Across the world, quality assurance has become an indispensable management requirement for educational management. Therefore, public universities in liaison with the National Universities Commission should encourage complete application of Education Management Information System (EMIS) tools in all the operational functions of our universities as it has been adequately established that they are capable of preventing time wastage and reducing cost.
- The Rivers State government should prioritize the full integration of Education Management Information System (EMIS)-based scheme into teaching and learning and researches; researchers so as to give our universities competitive advantages over other universities.
- The National Universities Commission should make a comprehensive application for the use of Education Management Information System (EMIS) to the universities in their day to day administrative function in line with the innovative global standard.

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