

ASSESSING THE CONTRIBUTIONS OF INFORMATION AND COMMUNICATION TECHNOLOGY (ICT) FACILITIES TO THE EFFECTIVE MANAGEMENT OF PUBLIC UNIVERSITIES IN NORTH CENTRAL, NIGERIA

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Abstract

This study assessed the contributions of Information and Communication Technology facilities to effective management of public universities in the North Central, Nigeria. Two research questions guided the study and two null hypotheses were tested for the study. The study adopted descriptive survey research design. The population of the study consists of 1,108 management staff from 14 public universities with available data in North Central Nigeria. The sample size was 285 respondents from 8 public universities in North Central Nigeria. The study employed multi-stage sampling procedure. The instrument used for data collection was a questionnaire structured by the researcher titled "Assessing the Contributions of Information and Communication Technology Facilities and Management Questionnaire (ACICTFMQ)". The instrument was validated by three experts, two in Educational Management, Department of Educational Foundations and one expert from Department of Vocational and Technical Education, all from Faculty of Education, Benue State University, Makurdi. The instrument yielded the reliability coefficient of 0.90. The instrument was administered to the respondents by the researcher with the aid of eight research assistants. The research assistants were lecturers chosen from sampled public universities. Data collected were analysed using Mean scores and standard deviation to answer the research questions. The null hypotheses were tested using Chi-square test of goodness of fit at 0.05 level of significance. The study revealed that internet services and electronic mails contribute greatly to effective management of public universities in North Central Nigeria. Based on the findings of the study, it was recommended among others that University management should ensure that reliable and high-speed internet connectivity is available across all university campuses to support various administrative and academic activities. University management should ensure that all staff, faculty, and students are provided with official university email accounts for formal communication.

Keywords: ICT, management of universities, internet services, electronic mails

Introduction

The management of the university as an academic organization entails the achievement and maintenance of a harmonious environment conducive for the working together of various groups of staff and the administrative team for the attainment of preselected missions and objectives. Management of university is the extent to which the university has been able to operate within the confines of their statutes in order to carry out their primary assignment of teaching and researching (Ibiam, 2014). University management refers to the set of practices, processes, and policies that are put in place to oversee and govern the operations of a university.

This includes the management of various aspects such as finance, human resources, facilities, academic affairs, student services, research, and community engagement (Ivagher, 2018).

The management of a university is typically led by the Vice Chancellor who is responsible for the overall direction and strategy of the institution. The Vice Chancellor is supported by a team of administrators, including Deputy Vice Chancellors, Deans and Department Heads who are responsible for various areas of the university's operations. Managing a university requires a multi-disciplinary approach that involves coordinating the efforts of multiple departments and stakeholders. Strong leadership, effective communication, and strategic planning are all critical to the success of a university. Effective management of university requires a deep understanding of the unique challenges and opportunities facing the educational system today, as well as a commitment to continuous improvement and innovation.

Management is the judicious utilization of human, material, financial and time resources towards the achievement of organizational goals or objectives (Akpakwu, 2012). Management is an indispensable and integral part of educational system in any nation. This is because the world sees education as a good investment for personal, social and overall national development. It also involves planning, organizing, directing, controlling, coordinating and evaluating school activities to achieve the goals and objectives of university education. Management is an effective tool for utilization of human and material resources in a particular system for the achievement of identified objectives. The essence of establishing university education is to prepare its recipients for useful living within the society and contribute to the development of the community at large. University is an institution at the highest level of education where one can study for a degree or do research (Adamu, 2019). Traditionally, university training was limited in space (one location) and time and enormous amount of knowledge created and delivered annually by universities was only retrieved by a handful of local students.

The implication of the above statement is that no university can survive without the aid of technology such as Information and Communication Technology popularly called ICT. Information and Communications Technology (ICT) is the technology that supports activities involving the creation, storage, manipulation and communication of information. The application and use of ICT have led to the emergence of different forms of microelectronic and telecommunication tools such as laptops and computers, computer networks, the Internet, digital printers and mobile technology, which enable managers or administrators to record, store, process, retrieve and transmit information (Adebayo, 2012).

ICT, according to Basri, Alandejani and Almadani (2018), is the process of creating, processing, storing, retrieving and disseminating information using computers and other communication devices or gadgets. In education, ICT involves the application of digital equipment to all aspects of teaching and learning. Thus, ICT encompasses a combination of technologies for collection of information related to teaching and learning process. ICT facilities are technologies that provide access to information through telecommunication such as the internet, social media, cell phones, electronic mails, digital projectors, computer, digital libraries, software applications and audio-visual aids. The prevalence and rapid development of Information and Communication Technologies (ICTs) have transformed human society from the information technology age to the knowledge age. In the views of Adam (2016), ICTs have successfully changed social, economic as well as political spaces globally. ICTs have reduced the world to a global village, a term popularly referred to as globalization. Globalization has assumed a cyclopean force, driving human civilization by the scruff (Imhonopi & Urim, 2013). Hopkins (2016) observes that most experts in the field of education

agreed that when properly put to use, ICTs hold great promise in improving teaching and learning in addition to shaping workforce and workplace behaviour and opportunities.

In Nigeria, the first national programme on ICT was the Federal Government 1988 Policy document; the National Policy on Computer Education (FRN, 2019). The document emphasized the need for primary school pupils to be introduced to basic computer skills, the use of the computer to facilitate learning and rudimentary use of text writing computation and data entry. For secondary schools, the goals were as identified for primary schools but to be pursued at a higher level. The additions were the organization of curriculum for computer education and the decision to use unity school as the pilot institutions for the computer education project. The tertiary institutions were also required to teach computer science as a subject discipline and also integrate it in higher institutions' administration and instruction. Other components of the document include: equipment, teacher training and specific recommendations in tertiary institutions.

The crucial contribution of ICT to the management of university is stimulating sustainable development. It allows universities to leapfrog stages of growth by being able to modernize their production system and value system, it also brings about retardation to those universities that are unable to adapt to the new technological system. ICT provides a platform for which universities new initiatives, knowledge, skills and ideas are transmitted, transformed and shared among the nations of the world. The contribution of ICT to the university management in Nigeria cannot be over emphasized. Apart from its use in the classroom for teaching/learning, it enhances curriculum content and teaching methods of teachers. Research development and other outof classroom activities are not left out. In recent times, ICT is used in the management of staff from recruitment to retirement and students from screening, registration to graduation. Bello and Johnson (2011) state that in spite of the tremendous contribution of ICT facilities in management of university education in areas like teaching-learning situation, the state of ICT facilities such as internet, social media, cell phones, electronic mails, digital projectors, computer, digital libraries, software applications and audio-visual aids in Nigeria's universities especially in North Central Nigeria seem to be having challenges of exploiting ICT potentials for educational use and so it is on the worrying side.

Internet service is an invaluable tool for learning, teaching and research (including collaborative research) in Nigeria. It is speculated that today in both federal and state universities, especially those in the North Central Nigeria, internet services are not effective and adequate. According to Eze and Nwambam (2023), non-availability of internet services especially in most universities have hindered the inflow of up-to-date information, lack of motivation to acquire ICT skills, delay in getting information, less collaborative research effort, few cyber cafes that operate within the universities charge exorbitantly high rates and many students cannot cope with their charges. Abba (2017) asserts that the internet is the modern engine of progress and has had a far more invasive effect on education and management of universities. Abba further states that the internet is paving way for new approaches in ICT, with the introduction of online education and high speed access to information coupled with the efficiency of the personal computer which is fast transforming end-user experience worldwide. The impact of internet on education can be felt at homes, schools, colleges and universities with information available at lightning speed. Today, a vast amount of information is available at just a click of the mouse. Internet services seem to enable university management to have free flow of information from one staff to another and this seems to enhance quick and easy dissemination of information through the use of electronic mails.

Electronic mails are facilities used in sending, storing and receiving message electronically through the computer system (Mano & Mesch, 2014). The use of email was developed in the 1960's. E-mail is a faster, cheaper and safer form of sending mails across the globe. Haddouch (2017) state that it enables the user to send electronic message or document through the computer system to a specific e-mail address. E-mail is faster as messages can be exchanged in few seconds or minutes unlike using postal mail which may take days, weeks or months. E-mail can be used to send audio, video and text messages. E-mail message usually contains a header that specifies the sender, recipient and subject, followed by a body that contains the text of the message. Through e-mail, it is possible to communicate a message to a large number of people at the same time (Ugboma & Edewor). This is done through a mail explorer programme which forwards a copy of the message to each member on the list at the same time.

Statement of the Problem

Effective management of universities is essential for optimizing resources fostering academic excellence, and ensuring the holistic development of students. However, management of public universities in Nigeria seems to be faced with challenges in terms of physical structures, infrastructure, financing, inadequate teachers, inadequate instructional materials and commitment or quality of teachers and these seem to become a concern of authorities in ensuring standards and achievement of objectives for which these schools are established. This seems to hinder effective and efficient teaching and learning in public universities in North Central Nigeria. These public universities have turned out to be conduit pipes through which civil servants and politicians systematically siphon public resources (Abbass, 2015). The greatest tragedy seems to be that government efforts in education are not enough in meeting the needs and aspirations of Nigerians. All these have invariably resulted in the quantitative and qualitative collapse of productive educational pursuits and achievements of public universities. Hence, the number of students turned out yearly seems not prepared for labour market or to face productive challenges after graduating from universities.

These issues have drawn the attention of authorities concerned with maintaining standards and achieving the objectives for which these institutions were established. It has been speculated by the researcher that these issues may be driven by contribution of information and communication technology (ICT) in the management of public universities. The researcher's observation indicate that ICT facilities such as internet, computer and printers, excel in computing examinations scores, spread sheeting and International Business Machine appear not to be contributing to the effective management of universities, this is because many staff seem to be using traditional method of performing their duties. Despite the contribution of ICT to management of universities in areas like planning of school activities, conduct of research, teaching, communication and performance of other duties seem not to recognize the opportunities that ICT has presented in improving the efficiency and effectiveness of their job.

The poor use of these ICT facilities may be attributed to university staff non-usage of ICT facilities which would contribute to effective management of universities and consequently, this seems to lead to poor job performance among staff. It also appears that several attempts have been made by the university management to ensure usage of ICT facilities such as computers, internet access, mobile phones, projectors, printers, photocopy machines, fax machines and ICT laboratory so that they may contribute in enhancing effective management but it seems not to be achieving the desirable goals.

It also seems that staff appear not to be using internet services and electronic mails and other ICT facilities in teaching students in the universities; this situation appears to be hampering the effective teaching and learning in universities. This situation could also lower the standard of education in North Central Nigeria. This has been observed by the researcher to have been responsible for the ineffective, inefficient and unsatisfactory use of ICT facilities by administrators of universities in the North Central Nigeria.

The worry of the researcher also indicates that some university staff appear not to be using ICT facilities such as internet services, computers and laptop or I-pad, smart boards, projector, E-library, E-mail services and audio-visual sound needed for execution of duties in the universities which often times resulted in the delay in compilation of examination results, delay in conduct of research and publication, exploitation of students through exorbitant charges by cyber café operators within the university premises. This could make staff and management unproductive in their various duty schedules. It is against this background that the researcher carried out this study titled assessing the contributions Information and Communication Technology (ICT) facilities to the effective management of Public Universities in North Central, Nigeria.

Purpose of the Study

The purpose of this study was to assess the contributions of Information and Communication Technology facilities to effective management of public universities in the North Central, Nigeria. Specifically, the study sought to:

1. Assess the contribution of internet services to effective management of public universities in North Central, Nigeria.
2. Evaluate the contribution of electronic mails to effective management of public universities in North Central, Nigeria.

Research Questions

The following research questions guided the study:

1. What is the contribution of internet services to effective management of public universities in North Central, Nigeria?
2. What is the contribution of electronic mails to effective management of public universities?

Hypotheses

The following null hypotheses were formulated and tested at 0.05 level of significance:

1. There is no significant contribution of internet services to effective management of public universities in North Central, Nigeria.
2. There is no significant contribution of electronic mails to effective management of public universities.

Methodology

This study was carried out in public universities in the North Central, Nigeria. The study adopted descriptive survey research design. The population of the study consists of 1,108 management staff from 14 public universities in North Central Nigeria. The sample size was 285 respondents from 8 public universities in North Central Nigeria. The study employed multi-stage sampling procedure. The instrument used for data collection was a questionnaire structured by the researcher titled “Assessing the Contributions of Information and Communication Technology Facilities and Management Questionnaire (ACICTFMQ)”. The

instrument was validated by three experts, two in Educational Management, Department of Educational Foundations and one expert from Department of Vocational and Technical Education, all from Faculty of Education, Benue State University, and Makurdi. The instrument yielded the reliability coefficient of 0.90. The instrument was administered to the respondents by the researcher with the aid of eight research assistants. The research assistants were lecturers chosen from sampled public universities. Data collected were analysed using Mean scores and standard deviation to answer the research questions. The null hypotheses were tested using Chi-square test of goodness of fit at 0.05 level of significance.

Results

Research Question 1: What is the contribution of internet services to effective management of public universities in North Central, Nigeria?

Table 1: Mean Scores and Standard Deviations of Contribution of Internet Services to Effective Management of Public Universities in North Central, Nigeria

Item No	Item descriptions	SA	A	D	SD	\bar{X}	Std	Decision
1	Information about students is accessed online eliminating the use of heaps of files in offices.	138	87	8	43	3.61	1.06	Agree
2	Information about university staff are obtain online.	175	28	34	39	3.23	1.13	Agree
3	Examination results are released online by university management thereby reducing manipulation among students.	150	83	18	25	3.30	0.94	Agree
4	Internet services enable university authorities to have quick access to course contents.	131	103	24	18	3.26	0.87	Agree
5	Internet services provide platform for university management to release relevant documents such as pay slip to staff.	144	43	60	29	3.09	1.076	Agree
6	Internet services provide platform for university management to release relevant documents such as students’ transcript.	149	51	30	46	3.10	1.15	Agree
7	Internet services enable university management to easily register students thereby eliminating the hitherto method of long queues during registration.	129	93	41	13	3.22	0.87	Agree

Cluster Mean	3.36	Agree
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Source: Field Survey 2024

Table 1 shows the mean scores of items 1-7 as 3.61, 3.23, 3.30, 3.26, 3.09, 3.10 and 3.22 with corresponding standard deviations of 1.06, 1.13, 0.94, 0.87, 1.07, 1.15 and 0.87 respectively. All the items are above the criterion mean of 2.50. This means the respondents agreed that information about students is accessed online, eliminating the use of heaps of files in offices. Additionally, information about university staff is also obtained online. The respondents agreed that examination results are released online by the university management, thereby reducing manipulation among students, and internet services enable university authorities to have quick access to course content. They reported that internet services provide a platform for university management to release relevant documents, such as pay slips, staff names, and students' transcripts, to be accessed by those concerned. The cluster mean of 3.36 is higher than the set criterion mean of 2.50. This shows that there is a positive contribution of internet services to effective management of public universities in North Central, Nigeria

Research Question 2: What is the contribution of electronic mails to effective management of public universities?

Table 2: Mean Scores and Standard Deviations of the Contribution of Electronic Mails to Effective Management of Public Universities

Item No	Item descriptions	SA	A	D	SD	\bar{X}	Std	Decision
8	E-mails facilitate quality feedback of actions in universities.	151	43	46	29	3.20	1.06	Agree
9	E-mails help lecturers to interact with students through sending them information.	155	120	10	31	3.13	0.94	Agree
10	The use of e-mail helps university management in sending information to staff.	219	29	4	24	3.61	0.89	Strongly Agree
11	The use of e-mail enable university management to receive messages instantly from the external examination bodies.	188	128	16	14	3.27	0.79	Agree
12	E-mail usage enables the school to store full information about students.	131	105	36	4	3.32	0.75	Agree
13	The use of e-mail reduces the stress of talk among universities staff which enhances effective time savings.	168	80	24	4	3.49	0.72	Agree
14	E-circulars provide the quickest form of sending messages within an	175	74	4	23	3.45	0.88	Agree

institution regarding official matters.

Cluster Mean	3.35	Agree
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Source: Field Survey, 2024

Table 2 reveals the mean scores of items 8-14 as 3.20, 3.13, 3.61, 3.27, 3.32, 3.49, and 3.45 with corresponding standard deviations of 1.06, 0.94, 0.89, 0.78, 0.75, 0.72 and 0.88 respectively. All the items are above the criterion mean of 2.50. This implies that the respondents reported that e-mails facilitate quality feedback of actions in universities and help lecturers to interact with students through sending them information. The use of e-mail helps university management in sending information to staff. The study found the use of e-mail enable university management to receive messages instantly from the external examination bodies and enables the school to store full information about students. According to the study the use of e-mail reduces the stress of talk among universities staff which enhances effective time savings and E-circulars provide the quickest form of sending messages within an institution regarding official matters. The cluster mean of 3.35 is higher than the set criterion mean of 2.50. This shows that there is a positive contribution of electronic mails to effective management of public universities.

Hypothesis 1: There is no significant contribution of internet services to effective management of public universities in North Central, Nigeria.

Table 3: Summary of Chi-square test on Significant Contribution of Internet Services to Effective Management of Public Universities in North Central, Nigeria

	SA	A	D	SD	Df	Sig. Level	χ^2	P. Value	Decision
Observed Frequency	145	70	30	30					
Expected Frequency	69.0	69.0	69.0	69.0	3	0.05	137.42 ^a	0.00	Sign.

Table 3 shows the Chi-square value of 137.42^a, Df =3 and p = 0.00. Since, P. value of 0.00 is less than the alpha level of 0.05, the null hypothesis which states that there is no significant contribution of internet services to effective management of public universities in North Central, Nigeria is therefore rejected. This shows that there is a significant positive contribution of internet services to effective management of public universities in North Central, Nigeria.

Hypothesis 2: There is no significant contribution of electronic mails to effective management of public universities.

Table 4: Summary of Chi-square test on Significant Contribution of Electronic Mails to Effective Management of Public Universities

	SA	A	D	SD	Df	Sig. Level	χ^2	P. Value	Decision
Observed Frequency	170	83	20	18					
Expected Frequency	69.0	69.0	69.0	69.0	3	0.5	155.45 ^a	0.00	Sign.

Table 4 reveals the Chi-square value of 155.45^a, Df =3 and p = 0.00. Since, P. value of 0.00 is less than the alpha level of 0.05, the null hypothesis which states that there is no significant contribution of electronic mails to effective management of public universities is therefore rejected. This implies that there is a significant positive contribution of electronic mails to effective management of public universities.

Discussion of Findings

Based on the result obtained from the field, the following discussion of findings is presented below:

The first finding revealed that there is a significant positive contribution of internet services to the effective management of public universities in North Central Nigeria. This study found that information about students is accessed online, eliminating the use of heaps of files in offices. Additionally, information about university staff is also obtained online. Examination results are released online by the university management, thereby reducing manipulation among students, and internet services enable university authorities to have quick access to course content. The study also found that internet services provide a platform for university management to release relevant documents, such as pay slips, staff names, and students' transcripts, to be accessed by those concerned. The results of this study agree with the findings by Eze and Nwambam (2023) who found that the internet positively impacts students' performance in assignments and research projects, as well as lecturers' lecture notes and research activities. The result of this study supports the findings by Abba (2017) who found that Internet services contribute significantly to university management by facilitating easy and efficient communication among students, faculty, and staff through email, instant messaging, and online portals. They simplify administrative tasks such as admissions, scheduling, and record-keeping with online systems. Additionally, they provide platforms for online courses, virtual classrooms, and digital libraries, making education more accessible and flexible. In the opinion of the researcher, the coming of internet has helped university management in students' registrations where they can be done online, thereby eliminating the hitherto method of long queues during registration.

The second finding indicated a significant positive contribution of electronic mail to the effective management of public universities. Respondents reported that emails have enabled university management to facilitate quality feedback and help lecturers interact with students by sending them information. The use of email aids university management in communicating with staff. The study also found that the use of email enables university management to receive messages instantly from external examination bodies and store comprehensive information about students. This result is in consonance with the findings by Haddouch (2017) who found that there is a moderate relationship between how faculty felt about the perceived benefit of email protocol training. The frequency of email use, responsiveness to emails, timeliness of emails, the number of emails initiated, and adherence to email protocol are factors considered in the scoring questionnaire. These aspects help university authorities by ensuring efficient and prompt communication, maintaining organized records, and facilitating effective interaction among staff, students, and external bodies. The finding of this study lent credence to Mano and Mesch (2014) who found that the use of e-mail is linked to an improvement in work efficiency and is a vital source of information for completing tasks, thereby enhancing work performance. Mano and Mesch further reported that e-mail offers significant advantages to both the organization and work performance, and it also contributes to the quick and efficient transmission of information that is pertinent to the completion of tasks. This result also supports the findings by Ugboma and Edewor (2014) who found that e-mail is used in providing library

and information services in higher institutions, and it is used in the provision of library and information services in higher institutions. Ugboma and Edewor further add that e-mail is preferred in library and information service because it is cheap, convenient and timely as well as fast and above all it is personal means of communication. In the opinion of the researcher, the use of e-mail reduces the stress of talk among universities staff which enhances effective time savings and E-circulars provide the quickest form of sending messages within an institution regarding official matters.

Conclusion

Based on the findings of the study, it can be concluded that internet services and electronic mails contribute greatly to effective management of public universities in North Central Nigeria.

Recommendations

Based on the findings of the study, the following recommendations were made:

1. University management should ensure that reliable and high-speed internet connectivity is available across all university campuses to support various administrative and academic activities. Regularly update and maintain the IT infrastructure to prevent downtime and enhance performance. This could be achieved through partnerships with university and private sector companies for funding and technical support.
2. University management should ensure that all staff, faculty, and students are provided with official university email accounts for formal communication. This will help reduce the university community depending on information pasted on notice boards or other social media platforms. This will be achieved through maintaining an up-to-date email addresses by staff and students in the universities.

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