

*Utilization of Information and Communication Technologies in the Administration of  
Public Universities in South-East Nigeria*

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**Abstract**

Advances in science and technology have inadvertently led to increasing interconnectedness among peoples of the world, a shift in the roles and purposes of education, as well as the redefinition of skills, capabilities and competencies required of individuals if they are to succeed in the rapidly changing workplace and society. Higher education institutions are saddled with the daunting responsibility of assuring a substantial increase in the number of youth and adults who have relevant information and communication technology (ICT), as well as digital literacy skills, whilst preparing them for jobs, careers, and professions in the rapidly evolving 21<sup>st</sup> century. This study investigated the extent to which ICTs are adopted in personnel, student and general administration of university education in South-East Nigeria. Seventy top and middle cadre university administrators were drawn in clusters from a population of 227 top and middle cadre administrators in ten public universities in South-East, Nigeria. The instrument for data collection was an 18-item researcher-developed instrument titled: ICT Utilization in University Administration (IUUA). Three research questions guided the study. Results indicated that ICTs were utilized in managing students' admission and graduation processes, as well as in some aspects of general administration. However, the study revealed that ICTs were not utilized in personnel administration in universities in South-East, Nigeria. Based on the findings of the study, it was recommended that universities procure, adopt and utilize relevant ICT gadgets and web-enabled software, for effective administration of universities in South-East, Nigeria.

Keywords: Administrators, Higher Education Institutions, Information Communication and Technologies

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## Introduction

Rapid advances in science and technology in the 21<sup>st</sup> century have unintentionally led to increasing globalization, as well as a shift in the perceived roles and purposes of education. In realization of these advancements, the Nigerian government in its national policy on education (FRN, 2013), asserts that qualitative education is a key component of the nation's development and that education is a shared responsibility of the federal, state and local governments. This declaration has resulted in more people seeking tertiary/higher education in Nigeria. Tertiary education in Nigeria refers to education given after post-basic education in institutions such as universities, mono-technics, polytechnics, colleges of education, colleges of agriculture, schools of health and technology, national teachers' institute, and inter-university centres such as the Nigeria French language village, Nigeria Arabic language village, National institute of Nigerian languages, and Innovation Enterprise Institutions (FRN, 2013).

Higher education in Nigeria is, among other goals, saddled with the responsibility of preparing high-level manpower, such as surgeons, engineers, doctors, accountants, teachers, lawyers, linguists, economists, nurses, scientists, and so on, that are suitable for jobs and professions in the speedily evolving 21st-century society. The phenomenal increase in higher education enrolment has necessitated the integration of information and communication technologies (ICT) in all aspects of service delivery in higher education institutions (Egoeze, Misra, Maskeliunas & Damaservicius, 2018; Bosu, 2019; Ajah & Chigozie-Okwum, 2019).

The Nigerian national policy on information and communication technology in education stipulates that attaining qualitative education requires improving educational administration, which in turn involves the integration of ICT. The policy maintains that one of the objectives of ICT in education is to support effective and efficient ICT-enhanced administration of human resources, student registration, enrolment, and achievement. ICT refers to the diverse range of technological tools, resources, equipment, and telecommunication infrastructure that facilitate the creation, acquisition, access, transfer, storage, processing, preservation, management, organization, presentation, manipulation, security, retrieval and dissemination of data and information (FRN, 2019; Bosu, 2019).

The wide acceptance and exponential growth of ICT have changed the way we live and work, thus aiding the restructuring of hierarchies in organizations, continuous improvement in work procedures, and enabling multiple stake-holder participation in decision-making and administration (Ukanwa & Chiemeka, 2021; Indira Gandhi National Open University, 2017). ICT resources' inherent attributes of accuracy, reliability and ability to store and process large quantities of data make them suitable for educational administrative activities such as general administration, finance and accounts, and management of students' academic records and data including their admissions, learning activities, processing of results, and issuance of certificates (Bosu, 2019; Ukanwa & Chiemeka, 2021; Pohekar, 2018). The survival and success of any educational institution is largely dependent on the quality and effectiveness of such institution's administration (Onyekaba, 2021; Egoeze, Misra, Maskeliunas & Damaservicius, 2018; Ukanwa & Chiemeka, 2021).

Administration involves planning, organizing, directing, coordinating, controlling and evaluating performance in organizations. Thus, administration in educational institutions entails providing leadership and managing available human and material resources for achieving the objectives and purposes of the academic institution (Onyekaba, 2021; Bosu,

2019). For Krishnaveni and Meenakumari (2010) and Ajah and Chigozie-Okwum (2019), administrative activities in higher education institutions could be broadly classified into student administration, staff administration, resources, communication and general administration.

In student administration, ICT could be integrated into various activities such as student admission processes, course registration, attendance monitoring, learning activities, timetabling, class scheduling, result processing, and communication with parents/guardians among others (Krishnaveni & Meenakumari, 2010; Ajah & Chigozie-Okwum, 2019). ICT could also be deployed in recruiting staff, allotting duties to staff, monitoring staff attendance, scheduling leave, and appraising performance. Several aspects of general administration such as fee payment, students' transcript processing, management of library holdings, lesson planning and delivery, payroll administration, maintenance of personnel, inventory, medical records, and so on, could also be enhanced by the deployment of ICT.

Despite the advantages of ICT use in educational administration, research reports indicate that many higher education institutions in Africa, particularly in Nigeria were not leveraging on the benefits of adopting ICT in the administration of their institutions (Meenakumari & Krishnaveni, 2011; Ajah & Chigozie-Okwum, 2019; Egoeze, Misra, Maskeliunas & Damaservicius, 2018; Onyekaba, 2021). This study therefore investigated the extent to which ICT is utilized in the administration of public universities in South-East, Nigeria.

## **Research Questions**

The following research question guided the study:

1. To what extent are ICTs utilized in personnel administration in public universities in South-East Nigeria
2. To what extent are ICTs utilized in students' administration processes in public Universities in South-East, Nigeria
3. To what extent are ICTs utilized for general administration in public universities in South-East, Nigeria

## **Research Design**

The study adopted a descriptive survey research design to elicit information from top and middle-level administrators on the extent of implementation of information and communication technologies in the administration of various aspects of service delivery in universities in South-East, Nigeria. The sample for the study consisted of a total of 70 top and middle-level university administrators drawn in clusters from a population of 227 top and middle-level administrators in ten public universities in South-East, Nigeria. The top administrators included Vice Chancellors, Deputy Vice-chancellors, Registrars, Bursars, Directors and Deans/Provosts; while the middle cadre administrators included Heads of departments/Units.

The instrument for data collection was a 21-item, researcher-developed, instrument titled "ICT Utilization in University Administration (IUUA)". The instrument had two sections. Section one elicited information on respondents' specific roles in their institutions. Section two elicited information on respondents' perceptions of the extent of utilization of ICT in various aspects of service delivery in universities. The instruments were validated by an expert in measurement and evaluation.

To establish the reliability of the instrument, it was administered once to eight top and middle level administrators drawn from one public-owned university in South-East Nigeria. These administrators are part of the target population but were carefully excluded when data for the study was collected. The instrument had a Cronbach Alpha reliability coefficient of 0.79. The instrument was administered online using Google Forms. Respondents were sent the link to the survey by email and were required to anonymously respond to the survey. Data collected by the instrument were used to answer the research questions.

The data collected by the instrument were analyzed using Mean and Standard Deviation. Item response criterion mean of 2.50 and above was considered significant, while item means below 2.50 were considered not significant to answer the research questions.

## Results

Research Question 1: To what extent are ICTs utilized in personnel administration in Public Universities in South-East Nigeria?

	Items	Top Management (n=23)		Middle Management (n=47)		Pooled Mean	Remark
		Mean	SD	Mean	SD		
1	Notification for meetings sent through institutional e-mails to all staff	3.33	0.76	3.04	0.93	3.19	HE
2	Meetings held through e-forum, rather than physically	2.00	0.78	2.23	1.01	2.12	LE
3	Official matters, service rules and management decisions communicated to teaching and non-teaching staff through e-circulars	2.63	0.58	2.74	0.87	2.69	HE
4	Staff work allotment and leave management carried out through web application	1.62	0.65	1.89	0.73	1.76	LE
5	Staff performance appraisal are carried out through electronic media, rather than with printed copies	1.92	1.25	1.96	0.98	1.94	LE
6	Personnel records management done through web-based institutional portal	1.83	0.82	1.96	0.72	1.86	LE
<b>Grand Mean</b>						<b>2.26</b>	

Table 1: Top and Middle management perceptions of extent of ICT utilization in personnel administration in public universities in South-East Nigeria.

Table 1 shows that all items except items 1 and 3 had mean scores below 2.50, and standard deviation ranging from 0.58-1.25. This result indicates that ICT was utilized for sending notifications for meetings and communicating management decisions and official matters to staff. However, the result indicates that meetings are not held remotely. The result also indicates that ICTs are not utilized in personnel records management, staff appraisal, work allotment and leave management.

Research Question 2. To what extent are ICTs utilized in students' administration processes in public Universities in South-East, Nigeria?

	Items	Top Management (n=23)		Middle Management (n=47)		Pooled Mean	Remarks
		Mean	SD	Mean	SD		
1	Student admission is initiated and concluded through web-enabled services	3.71	0.46	3.36	0.79	3.54	HE
2	Students' semester results published on the institution's dedicated portal	2.67	0.82	2.47	1.18	2.57	HE
3	Parents/Guardians have access to students' result portal	2.33	0.82	2.17	1.03	2.25	LE
4	Parents/guardians connect with the institution's administrators using social media such as telegram or WhatsApp groups	2.33	0.96	2.26	0.90	2.30	LE
5	Information is disseminated to students through their personalized institutional email	2.13	0.95	2.19	0.99	2.16	LE
6	Students' requests communicated to administrative staff through institutional email rather than printed copies	1.83	0.87	1.91	0.80	1.87	LE
<b>Grand Mean</b>						<b>2.45</b>	

Table 2: Top and Middle management perceptions of extent of ICT utilization for student administration in public universities in South-East Nigeria

Table 2 shows that both top and middle level administrators perceived that students' admissions were initiated and concluded through web-enabled services (Mean=3.54). However, the results show that parents/guardians did not have access to students' result portal; and that information was not communicated to students, or between students and the administrative staff via emails.

Research Question 3. To what extent are ICTs utilized for general administration in universities in South-East, Nigeria?

Items	Top Management (n=23)		Middle Management (n=47)		Pooled Mean	Remarks
	Mean	SD	Mean	SD		
1 Students pay fees, dues and other charges through web-enabled electronic accounting programmes	3.58	0.72	3.13	0.92	3.36	HE
2 Library holdings and resources managed through online repository	2.58	0.65	2.66	0.87	2.62	HE
3 Class scheduling and attendance monitoring done using web-enabled biometric devices	1.83	0.76	1.77	0.87	1.80	LE
4 Students' take tests, and access course notes through learning management systems such as Moodle, Google Classroom, etc	2.25	0.68	2.04	0.83	2.15	LE
5 Interactive white boards and on-line learning modes are used for whole class interaction	2.25	0.90	2.06	0.92	2.16	LE
6 Information is officially dispersed to Parents/guardians through social networking services such as Telegram, WhatsApp, Facebook, X (Twitter) and LinkedIn	2.29	0.96	2.53	1.04	2.41	LE
<b>Grand Mean</b>					<b>2.42</b>	

Table 3: Top and Middle management perceptions of the extent of ICT utilization for general administration in public universities in South-East Nigeria

Table 3 shows that top and middle-level administrators agreed on all items about general administration of Higher Education Institutions. The results indicate that ICT is generally utilized in administering students' fee payment (3.36) and in managing library resources (2.62). However, it is rarely used in teaching, student learning, class scheduling, or even attendance monitoring. The result also indicated that information was not officially dispersed to parents/guardians (2.42), using social networking services/social media.

### Discussion of Findings

The advent of ICT and its adoption in all facets of human endeavour has enabled organizations to become more efficient and effective in their service delivery. The activities

of administrators in Higher Education Institutions are pivotal to the provision of excellent and quality services in tertiary institutions of learning. Due to the successful deployment of ICT in various aspects of human endeavours, several research reports assert that the adoption of ICT in higher education administration would improve the quality of their service delivery.

Top and middle-level administrators of public universities in South-East Nigeria agree that to large extents, ICTs were not utilized in personnel administration (grand mean = 2.26), student administration (grand mean = 2.45) and general administration (grand mean = 2.42). This result aligns with Ajah and Chigozie-Okwum's (2019) observation that the adoption of ICT in Nigerian universities' administration was happening at a very slow pace. The finding also agrees with Nnamaka's (2021) finding that ICTs were not adequately utilized in the management of colleges of education in Northwest Nigeria. These results are at variance with Ukanwa and Chiemeka's (2021) submission that ICTs help educational administrations achieve their goals easily.

The results indicated that ICTs such as e-mails and e-circulars were extensively used for notifying staff for meetings and communicating service rules, management decisions and official matters to staff. However, staff work allotment, performance appraisal, personnel records and leave management were not done using web-based applications and institutional portals, nor were meetings held remotely. This finding contradicts Krishnaveni and Meenakumari's (2010) assertion that ICT was mainly integrated into staff administration in higher education.

## **Conclusion**

Based on the results of this study, it was concluded that Information and Communication Technologies have not been fully adopted in the administration of public universities in Southeast Nigeria. This trend may have contributed to the slow and inefficient administrative service delivery in these universities. To assure effective administration and improved service delivery, public universities in South-East Nigeria, should utilize ICT tools and technologies in all aspects of student, personnel and general administration. Additionally, administrative as well as teaching staff in public universities in South-East Nigeria should be trained on the utilization of ICT tools such as Learning Management Systems which support student administration and also improve student engagement.

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