



## DIGITALIZATION IN EDUCATIONAL MANAGEMENT INFORMATION SYSTEM (EMIS): PERSPECTIVE OF ACADEMIC STAFF IN PUBLIC UNIVERSITIES IN CROSS RIVER STATE, NIGERIA

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### Abstract

*This study was conducted to assess digitalization in educational management information system (EMIS) based on the perspective of academic staff in public universities in Cross River State, Nigeria. Problems and prospects of EMIS was the focus. This study adopted a descriptive survey design. The population of this study was made up of 2867 academic staff members across the two public universities (University of Calabar and University of Cross River State) all in Cross River State, Nigeria. To collect data for the study, the researchers randomly selected a sample of 1434 from the population of 2867 academic staff in the two universities. A questionnaire called 'Perspective of Academic Staff of the Problems and Prospects of Digitalization in Educational Management Information System Questionnaire (PASPPDEMISQ)' was the instrument used for data collection. Data collected were coded and analyzed using mean, standard deviation and frequency counts. It was found among others that, inadequate funding, ineffective training programmes for academic staff members and students in the utilization of digital devices for teaching and learning, resistance among many staff members to move towards digital operations, poor community members' involvement in the provision of digital tools were the challenges of digitalization in EMIS. However, the findings indicated that, increase in automated processes in educational system, increase in access to education outside the traditional classroom setting, road map to global best practices, equipping educational institutions with high-quality software, promotion of information systems that provide access to educational resources among others, as the prospects of digitalization in EMIS. Arising from the results of the analysis, it was recommended that, university management should not relent in its effort toward addressing the problems associated with the digitalization of EMIS.*

**Keywords:** Digitalization, Digital Tools, Educational Management, Educational Management Information System (EMIS), Information and Communication Technology (ICT),

### Introduction

Globally, tertiary educational institutions are gradually migrating from the usual traditional mode of operations to the modern ways of managing educational activities and programmes. This is occasioned by the rapid growth and development in information and communication technologies (ITC). Information and communication technology is a composite term that is made up of such parts as information, communication and technology. Information has been viewed as data that have been processed and communicated in such a way that they can be interpreted (Lucy, 2005). By extension, information is a processed and interpreted data communicated or meant for communication to the targeted audience. On the other hand, communication is the



creation, transmission, interpretation and the process of using information (Inyang, Oden, & Esu, 2003). It is the process of creating and conveying information from the originating source (sender) to the recipient (destination) with mutual understanding. Technology is the application of scientific knowledge in practical ways that are manifested in new machines and equipment used in industries to facilitate organizational activities and performance (Hornby, 2010). It is also the modification of the natural environment to satisfy perceived human wants and needs (Joshua, 2018). Contextually, technology is the utilization of scientific information or awareness to create new processes and mechanisms that help man in solving both theoretical and practical problems at their disposal. There is no doubt that, with constant technological advancement, which has culminated into digitalization, rapid receipt and dissemination of information in all sectors of the economy, educational sector is not an exception, has come to stay.

Digitalization has to do with changing the methods, processes and approaches to product offering and service delivery in an organization by application or adoption of technological tools. In educational system, digitalization is evidence in the application of digital tools in teaching, learning, research and in the general school management. Scholars have identified personal computer, a Laptop, tablet, MP3 player, You Tube, Edmodo, Facebook, WhatsApp, Blogging, Telegram, White Board, Wechat, Google Drive, EasyBib, Notability, Projector, Zoom among others as digital tools commonly used in educational organizations (Asuquo et al., 2022). Digitalization in educational system entails transforming traditional ways of doing things (teaching, learning and the general school management) into electronically based methods by using emerging digital tools for effective, increased and improved service delivery as well as access to all educational materials. Machekhina (2017) opined that, digitalization is the transformation of all types of information in terms of texts, sounds, visuals, video and other data from various sources into the digital forms (Machekhina, 2017). Digitalization has also been viewed as changes in ways of working, roles, and business offering caused by adoption of digital technologies in an organization, or in the operation environment of the organization (Parviainen et al. 2017). Digitalization has also been viewed as the transformation of all information types in terms of texts, sounds, visuals, video and other data from various sources into the digital forms (Machekhina, 2017) as well as providing an avenue for safeguarding and sharing knowledge that may be at risk of being lost or marginalized (Asuquo, Okenjom, Okpa & Eyiene, 2023).

It has also been documented that digitalization entails as integration, application and effective utilization of digital technologies and tools in educational management processes to enhance effective online teaching, learning, research, staff and student personnel as well as the general school administration in line with the global best practices of the 21st century (Parviainen et al. 2017; Okon & Asuquo, 2014). Digitalization is gradually being embraced in almost every aspect of activities in the school system. For instance, teaching, learning as well as general school administration are gradually going digital and this has, to great extent seems to have affected educational management of information system (EMIS) in educational organization across the globe.

Information system (IS) per se, is a set of procedures designed to collect data, process data into information as well as collecting, storing and disseminating information to support planning, decision-making, co-ordination and control (Inyang, 2004). In educational organizations, just like other sector of the economy, information system could be either traditionally based computerized, While traditionally based information system entails manually gathering and recording of information on hard copies/paper and storing such in filing cabinet, computerized or computer-based information system involves application of digital tools to gather, process, disseminate, receive and store communication.

Management information (MIS) is the data processing system which provide information to management for the purpose of controlling the business of the organization and to help management in decision making (Inyang, 2004). It is also a system to convert data from internal and external sources into information and to communicate that information, in an appropriate form, to managers at all levels in all functions to enable them make timely and effective decisions for planning, directing and controlling the activities for which they are responsible (Lucey, 2005). There is no doubt that, MIS is a crucial aspect in educational management. In general, management is very crucial in the accomplishment of educational objectives (Ekpoh & Asuquo, 2017; Asuquo, & Emeribe, 2021; Ogbeche, Asuquo & Emeribe, 2021). Educational management in this context refers to the process of getting things done by planning, organizing, directing, controlling and coordinating all available human, material and financial resources at the disposal of management to achieve educational goals and objectives.



In the context of educational management, a system designed to systematically organized information related to the management of educational development is called educational management information system (Wako, 2003). Asuquo, Uyimse and Ngai (2024) documented that, educational management has undoubtedly gone beyond the traditional approaches due to the dynamic nature of the world occasion by technological advancement round the globe. There is no doubt that every nation around the globe is yearning to meet up with the global best practices which is facilitated by the emerging technologies in educational sphere. From the point of view of Nganjiozor (2016)

Education Management Information System (EMIS) is a system for the collection, integration, processing, maintenance and dissemination of data and information to support decision making, planning, policy-analysis, monitoring and evaluation of all levels of education system. In a similar line of thought, Bernbaum and Moses (2011), viewed EMIS is a comprehensive system that brings together people, practices, and technology to provide quality education statistics in a timely, cost-effective, and sustainable manner, at every administrative level, and to support selected operational functions. In the context of this work, we define EMIS as official procedures, specifically designed to manage data collected from both internal and external sources, as well the methods applied in processing the collected data into information and make such information available for decision-making at all levels in the school in educational system.

Over the past years, application of information and communication technology has become one of the practices in educational system and as such, educational organizations at all levels are gradually showing serious interest in the application of digital tools in teaching, learning, research and in the general school management (Okon & Asuquo, 2024).

Again, scholars have documented that, digitalization is a crucial avenue for safeguarding and sharing of information (Asuquo, Okenjom, Okpa & Eyiene, 2023). Digital technologies are becoming a factual driver of social change around the world. At different points, scholars have conducted studies in the areas of digitalization in the school system (Petrusevich, 2020; Owan, Asuquo, Makuku & Etudor-Eyo, 2021; Asuquo, Emeribe, & Amam, 2022)

For instance, a study was carried out by Ukozor (2024) to examine factors that militated against digitalization of basic school education in Nigeria. It was found that poor funding, shortage of digital facilities, power problem, poor internet connection, higher cost of digital facilities, poor digital skills and knowledge and shortage of digital experts, poor implementation, problem of resistant to change and corruption were major problems that have militated against digitalization of basic education in Nigeria. Although Ukozor's study was on digitalization in the school system, it was limited to basic education and as such, similar study become necessary at the university level to address the lacuna.

Another empirical investigation by Okon & Asuquo (2024) was conducted to evaluate principals' perspectives of the challenges, and ways forward in digitalizing management of secondary school educational system in Calabar Metropolis of Cross River State, Nigeria. The study was a census study because all the principals in the study area were used as respondents in the study. From the result of the analysis, inadequate funding, lack of digital skills, poor ICT training programmes, resistance among school administrators to move towards digital operations, poor community members' involvement in the provision of digital tool were the challenges in digitalizing management of secondary school educational system. However, the authors identified adequate funding, provision of adequate digital tools, effective training of all stakeholders in the secondary school, willingness among school administrators to move towards digital operations and establishment of uniform standard for the provision of educational services using digital technologies were identified as the way forward in digitalizing management of secondary school educational. Although this study is related to the previous by Okon and Asuquo, however, the need for this study become necessary to identifying problems and prospects of digitalization in the areas of educational management information system (EMIS).

In a similar direction, empirical study was carried out by Stokov (2020) to investigate the problems and prospects of digitalization of education. The study indicated that, equipping educational institutions with high-quality software, promotion of information systems that provide access to educational resources, the introduction of information (distance) technologies, online learning, changing requirements for teachers and students, the formation of new organizational educational structures, inevitable changes in the usual forms and methods of training and value-semantic were among the prospects for digitalization in education. In spite of the fact that, Stokov's study was on digitalization of education, the study did not address problems and



prospects of digitalization in connection with EMIS in the university system, which is the concern of this very study.

### Statement of the problem

Educational management information system (EMIS) has been crucial in the collection, integration, processing, maintenance and dissemination of data and information to support decision making, planning, policy-analysis, monitoring and evaluation in all levels of education organizations. It has been observed by the researchers that, EMIS in the university system in Cross Rivers has over the years been observed to have been confronted with several setbacks including information overload occasioned the traditional methods of management of information, incompatibility with global best practices and untimely information dissemination for actions and decision making.

The above scenario may be attributed to institutional inability to fully digitalize management information system following the fact that, digitalization in educational management is a global best practice in educational institutional at all levels due to the rapid growth and development in information and communication technologies. It on the basis of the foregoing that this study was conducted to evaluate problems and prospects of digitalization in educational management information system based on perspective of academic staff in the universities in Cross River State, Nigeria

### Purpose of the study

The aim of this study was to assess the problems and prospects of digitalization in educational management information system (EMIS) based on the perspective of academic staff in public universities in Cross River State, Nigeria. Specifically, this study sought to:

1. examine the problems of digitalizing educational management information system (EMIS) in public universities in Cross River State, Nigeria.
2. find out the prospects of digitalizing educational management information system (EMIS) in public universities in Cross River State, Nigeria

### Research questions

1. What is the perspective of academic staff of the problems of digitalizing educational management information system (EMIS) in public universities in Cross River State, Nigeria?
2. What is the perspective of academic staff of the prospects of digitalizing educational management information system (EMIS) in public universities in Cross River State, Nigeria?

### Methodology

A descriptive survey research design was adopted in this study because a descriptive survey research design is suitable for a study that involves the collection of data that will provide a description of individuals, groups and situation. A descriptive survey research design is also suited to be adopted in this study because it is concern with conditions, practices, and processes that are going on (Asim, Idaka & Eni, 2017). Digitalization in this contemporary era is gradually going on in the school system due to the development and advancement in ICT (Okon & Asuquo, 2014).

The population of this study comprised 2867 academic staff across the two universities in Cross River State (University of Calabar and University of Cross River State). The sample for the study was 1434 academic staff randomly selected from the two universities. Population and sample distribution for the study is indicated in Table 1

Table 1

S/N	Public universities in Cross River State	Number of academic staff	Sample (50%)
1.	University of Calabar (Unical)	2410	1205
2.	University of Cross River State (Unicros)	457	229
	Total	2867	1434

Source: Field work



The instrument for data collection was designed by the researchers. It was entitled “Academic Staff Perspectives of the Problems and Prospects of Digitalization in Educational Management Information System Questionnaire (ASPPPEMISQ). The instrument had two sections (A and B) with the number of their respective items. Section A was designed to measure academic staff perspectives of the problems of Digitalizing Educational Management Information System. Section B of the instrument measured Prospects of Digitalizing Educational Management Information System. The instrument was validated by 2 experts from Measurement and Evaluation to ensure that the items on the instrument were structured to measure the variables they were intended to measure.

The instrument had response items such as Strongly Agree (A), Agree (A), Disagree (D) and Strongly Disagree (SD) for both Sections A and B. All SA and A responses were considered as A. On the other hand, all the D and SD responses were put together and treated as D. Copies of the instrument were administered directly to the respondents by the researchers. The researchers also employed the services of the research assistants in the administration of the copies of the instrument. At the end of the administration of the instrument on the respondents, the researchers were able to retrieve all the copies of the questionnaire indicating 100% rate of return devoid of attrition. Frequency counts and percentages were used for data analysis.

## Results

Research question 1: What is the perspective of academic staff of the problems of digitalizing educational management information system (EMIS) in public universities in Cross River State, Nigeria?

Table 2: Perspective of academic staff of the problems of digitalizing Educational Management Information System (EMIS) in public universities in Cross River State, Nigeria. (N=1434)

S/N	Items	A Response	D Response
1.	Inadequate of digital facilities	1404 (98%)	30 (2%)
2.	Poor training and development programmes on digitalization	1400 (98%)	34 (2%)
3.	Conservative attitude of administrators	1000 (70%)	434 (30%)
4	Poor maintenance culture of available digital facilities.	1398 (97%)	36 (3%)
5.	Poor institutional internet connectivity	1034 (72%)	400 (28%)

As indicated in Table 2, the result of the analysis of the research question 1 indicates that, inadequate of digital facilities, poor training and development programmes, conservative attitude of administrators and poor maintenance of available digital facilities are the problems of digitalization in educational management information system (EMIS) in public universities in Cross River State, Nigeria. This is because majority of academic staff members' perspectives are in agreement with the above items measuring of the problems of digitalization in educational management information system (EMIS).

Research question: What is the perspective of academic staff of the prospects of digitalizing educational management information system (EMIS) in public universities in Cross River State, Nigeria?

Table 3

Perspective of academic staff of the prospects of digitalizing Educational Management Information System (EMIS) in public universities in Cross River State, Nigeria (N=1434)

S/N	Items	A Response	D Response
1.	Equipping university system with quality software and hardware digital resources	1434 (100%)	Nil
2.	Provision of information system that provide access to educational resources irrespective of time and place.	1434 (100%)	Nil
3.	Inevitable changes in the traditional methods of teaching and learning.	1434 (100%)	Nil
4.	Promoting management of distance education through digital resources	1434 (100%)	Nil
5.	Innovation in the university system's organizational structures	1434 (100%)	Nil



From the analysis in Table 3, all 1434 (100%) academic staff agreed that, the prospects of digitalization in educational management information system (EMIS) include; equipping university system with quality software and hardware digital resources, provision of information system that provide access to educational resources irrespective of time and place, inevitable changes in the traditional methods of teaching and learning, promoting management of distance education through digital resources and innovation in the university system's organizational structures

### Discussion of findings

The analysis in Table 2 indicates that, inadequate of digital facilities, poor training and development programmes, conservative attitude of administrators and poor maintenance of available digital facilities are the problems of digitalization in educational management information system (EMIS) in public universities in Cross River State, Nigeria. The result is in line with the finding arising from a study conducted by Okon & Asuquo (2024) that, inadequate funding, lack of digital skills, poor ICT training programmes, resistance among school administrators to move towards digital operations, poor community members' involvement in the provision of digital tool were the challenges in digitalizing management of educational system. Similarly, the result is in tandem with Ukozor (2024), who discovered that, poor funding, shortage of digital facilities, power problem, poor internet connection, higher cost of digital facilities, poor digital skills and knowledge and shortage of digital experts, poor implementation, problem of resistant to change and corruption were major problems that have militated against digitalization of basic education in Nigeria.

The analysis in Table 3 shows that, equipping university system with quality software and hardware digital resources, provision of information system that provide access to educational resources irrespective of time and place, inevitable changes in the traditional methods of teaching and learning, promoting management of distance education through digital resources and innovation in the university system's organizational structures were the prospects of digitalization in educational management information system based on the perspective of academic staff in public universities in Cross River State, Nigeria. This result implies that, the prospect of digitalization in educational management information system (EMIS) will at a long run replace manual operations, provide new methods by discarding obsolete practices and offer new services with respect to educational management information system in the university.

### Recommendations

Based on the findings, the following recommendations were made:

1. Adequate digital resources, maintenance culture effective internet connectivity should be give utmost priority in order to enhance and improve educational management information system in the university.
2. The university management should as a matter of fact, be conscious that, the prospects of digitalizing educational management information system in the university is to equip university system with quality software and hardware digital resources as well as provision of information system that provide prompt and timely access to information and educational resources at a long run.

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