

IMPACT OF EDUCATION MANAGEMENT INFORMATION SYSTEM (EMIS) ON PLANNING AND DECISION-MAKING OF UNIVERSITIES IN NORTH WEST ZONE, NIGERIA

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ABSTRACT

This study examined the Impact of Education Management Information System (EMIS) on Planning and Decision-Making of Universities in North West Zone, Nigeria. The design of the study was descriptive survey design. The population of this study involves: University Management, Lecturers, non-teaching staff and Students representatives in the federal Universities of the Northwest zone of Nigeria. The population of the study consists of 49 management staff, 6447 teaching staff, 12,344 non-teaching staff and 287 students' representatives. The sample size was 385 determined using The Research Advisors (2006) table for sample size determination. The study adopted multi-stage sampling techniques. The self-designed questionnaire titled "Questionnaire on the Perception of Stakeholders on Impact of Education Management Information System (EMIS) on the Management of Universities of Northwest Zone, Nigeria, was used for data collection. The instrument was duly validated by experts. The instrument was subjected to pilot testing and was certified as fit for the study. The One-way Analysis of variance (ANOVA) was used to test the null hypotheses at 0.05 level of significance. The study found that Education Management Information System (EMIS) has impacted on Planning and decision-making in Universities of North West Zone, Nigeria. The study among others recommends the need for the management of universities to ensure maximum utilization of Education Management Information System (EMIS) in planning and decision-making their activities. This will greatly assist in ensuring effective and efficient service delivery in Universities of North West Zone, Nigeria.

Keywords: Impact, EMIS, Planning, Decision-Making, Universities.

Introduction

The rapid global changes have brought about some fundamental changes in education. The present era where the world is considered a 'global village' has seen a great progress of knowledge leading to new and technological ways of educational management. It is evident according to Kankam (2013) that the emergence of information and technology-based society has brought a change of mind-set in learning and that new approaches to learning necessitate new approaches to teaching which challenge the teacher's role as a facilitator for learning. This therefore calls for educational managers to ensure the use of effective and efficient means for record and information keeping which can be smartly accessed to make right educational policies and decisions for the achievement of educational goals and objectives of the country. In his assertion Kashyap (2019) indicated that, educational management is concern with a

specialized set of organizational functions whose primary purpose is to ensure the efficient and effective delivery of relevant educational services as well as implementation of legislative policies through planning, decision making and leadership behaviour.

Education Management Information Systems (EMIS) are pivotal in transforming educational institutions by enhancing data collection, processing, and dissemination for effective planning and decision-making. The adoption of EMIS in universities, particularly in Nigeria's North West Zone, has the potential to significantly improve administrative efficiency, resource management, and academic outcomes. This background analysis delves into the impact of EMIS on planning and decision-making in these universities, emphasizing the benefits and challenges associated with its implementation. EMIS is a comprehensive system that integrates data from various educational sectors to facilitate informed decision-making and strategic planning. It encompasses the collection, storage, analysis, and dissemination of educational data, including student performance, staff information, financial records, and infrastructural details (UNESCO, 2018). By providing accurate and timely information, EMIS supports university administrators in making evidence-based decisions, optimizing resource allocation, and improving overall institutional performance.

The Role of EMIS in University Planning and Decision-Making are numerous. EMIS enables university administrators to make informed decisions based on accurate data. This data-driven approach helps in identifying trends, forecasting future needs, and developing strategic plans (Alabi&Issa, 2019). For instance, data on student enrollment and performance can guide decisions on faculty recruitment, course offerings, and infrastructural development. Effective resource management is critical for the sustainability of universities. EMIS provides detailed financial data that helps in budgeting, financial planning, and monitoring expenditures. By tracking financial resources, universities can ensure that funds are utilized efficiently, reducing wastage and improving financial accountability (Akinnuwesi et al., 2019).

EMIS supports academic planning by providing insights into student performance, curriculum effectiveness, and faculty workload. This information is crucial for curriculum development, scheduling, and ensuring that academic programs meet the needs of students and align with institutional goals (Nweze, 2020). The automation of administrative processes through EMIS reduces the burden of manual data entry, minimizes errors, and enhances the overall efficiency of university operations. This allows administrators to focus on strategic planning and decision-making rather than routine administrative tasks (Okebukola, 2018). EMIS facilitates better communication and engagement with stakeholders, including students, faculty, and external bodies. By providing transparent and accessible information, universities can foster trust and collaboration with stakeholders, leading to more effective governance and institutional development (Adeyemi &Adu, 2020).

The implementation of EMIS in universities within Nigeria's North West Zone has had several notable impacts. Universities in this region have reported improved planning and policy development as a result of reliable data provided by EMIS. This has led to the formulation of evidence-based policies that address key issues such as student retention, faculty development, and infrastructure improvement (Yusuf &Olaniyi, 2021). The use of EMIS has

contributed to better academic outcomes by facilitating data-driven interventions aimed at improving student performance. Universities can identify areas where students struggle and implement targeted support measures, such as tutoring and academic counseling (Oni, 2019). EMIS has enabled universities to optimize their resources by providing a clear picture of financial health and resource allocation. This has led to more effective budgeting, cost-saving measures, and improved financial management practices (Olayemi, 2020). Despite its benefits, the implementation of EMIS in the North West Zone faces several challenges. These include inadequate infrastructure, limited technical expertise, resistance to change, and issues related to data privacy and security (Akinyemi, 2020). Addressing these challenges requires a concerted effort from university administrations, government bodies, and stakeholders to ensure the successful adoption and sustainability of EMIS.

Research Objectives

The Objectives of the Research are to:

- assess the impact of Education Management Information System (EMIS) on Planning in Universities of North West Zone, Nigeria;
- find out the impact of Education Management Information System (EMIS) on Decision-making in Universities of North West Zone, Nigeria;

Research Questions

The study is guided by the following research questions:

1. How does Education Management Information System (EMIS) impacted on Planning in Universities of North West Zone, Nigeria?
2. What is the impact of Education Management Information System (EMIS) on Decision-making in Universities of North West Zone, Nigeria?

Research Hypotheses

The Study formulates the following Hypotheses:

- Ho₁ There is no significant difference in the opinions of management staff, academic and non-academic staff, students' representatives and NUC officials) on impact of Education Management Information System (EMIS) on Planning in Universities of North West Zone, Nigeria.
- Ho₂ There is no significant difference in the opinions of respondents on impact of Education Management Information System (EMIS) on Decision-making in Universities of North West Zone, Nigeria.

Method

The researchers adopted survey research for the study. The main idea for justifying the use of the design is that the design is used in behavioral and social science researches to gather factual information with regard to a particular population (Yabo, 2007). The research design therefore affords the researcher an opportunity to investigate various issues with regards to perceptions of stakeholders on the use of Management Information System (EMIS) on Management of federal universities of Northwest Zone, Nigeria.

The population of this study involves: University Management, Lecturers, non-teaching staff and Students representatives in the federal Universities of the Northwest zone of Nigeria. Thus the overall population of the study consists of 49 management staff, 6,447 teaching staff, 12,344 non-teaching staff and 287 students' representatives. The sample size of the respondent was determined by the procedure recommended by the research advisors (2006) that a sample size of 385 is enough for the total population of 19127 respondents at 95% confidence level and margin error of 5%. The researchers adopted multi-stage sampling techniques (Convenience sampling and purposive sampling techniques). Convenience sampling technique was used in selecting the number of Federal Universities, while purposive sampling technique was used in selecting the respondents in each federal university. Equal number of respondents was selected from each of the Federal university.

A closed ended self-designed questionnaire titled "Questionnaire on the Perception of Stakeholders on Impact of Education Management Information System (EMIS) on the Management of Universities of Northwest Zone, Nigeria, was used as data collection instrument. The researcher used the 5- point Likert's scale of Strongly Agreed (SA), Agreed (A), Disagreed (D) and Strongly Disagreed (SD) Undecided (U). The responses were coded as follows: Strongly Agreed=5, Agreed=4, Disagreed=3, Strongly Disagreed=2 Undecided=1. The validity of the instrument was determined by given the instrument to experts in educational administration and planning and expert in English Language to check its validity. The items were structured in line with the hypotheses and whether they elicit the required information. Kerlinger and Gay (1976) both hold the view that, validation of the content of research instrument by experts is an important acceptable technique.

The instrument was subjected to pilot testing to determine its reliability i.e. to confirm whether the instrument was able to measure what it is meant to measure as recommended by Kerlinger and Howard (2000) and Berg and Gall (1971). The data to be collected was subjected to statistical analysis through the use of Cronbach alpha. The study used means and standard deviations to answer the research questions and the decision mean of 3.0 was used to determine acceptance or rejection of the item statement as structured in the instrument. Inferential statistics i.e. one-way Analysis of variance (ANOVA) was used to test the null hypotheses at 0.05 level of significance.

Results

Research Question One: How does Education Management Information System (EMIS) impact on Planning in Universities of North West Zone, Nigeria?

The specific objective of this study is to determine how Education Management Information System (EMIS) impact on Planning in Universities of North West Zone, Nigeria. Items 7-16 in section 'B' of the instrument were used to answer research question. The distribution of responses is presented in Table1.

TABLE 1: Opinions of Respondents on the Impact of Education Management Information System (EMIS) on Planning In Universities of North West Zone, Nigeria

S/N	Items	SA	A	UD	D	SD	MEAN	STD
1	Education management information system (EMIS) provides data/information that facilitates planning of educational activities.	49	51	87	75	94	3.83	1.45
2	EMIS assist in proper resources allocation according to the needs of universities, faculties and departments for effective operations.	89	136	39	76	16	3.30	1.38
3	EMIS help in reducing resources wastages through the data/information it provides.	37	150	100	53	16	3.08	1.17
4	EMIS help in forecasting universities education needs in terms of human and material resources for future education practice	85	48	40	140	43	3.50	1.21
5	EMIS provides data/information that aides planning for manpower requirements.	196	22	31	75	32	2.83	1.07
6	EMIS contributes to the smoothness and efficiency processes in the field of education	18	72	158	46	62	3.74	1.47
7	EMIS provides data/information that are essential for preparing a blue print or plan of action for educational activities of universities	96	106	53	83	16	2.91	1.37
8	EMIS provides a sound method of solving educational problems.	65	100	77	67	47	3.37	.99
9	EMIS facilitate gathering of data/information needed for planning educational activities.	11	61	59	100	35	3.55	1.18
10	EMIS provides relevant and timely data/information that serves as a baseline for planning educational programmes and activities.	205	25	32	61	33	2.42	1.01
Aggregate Mean							3.25	
Decision mean=3.00								

Result of descriptive statistics in Table 1 shows the opinions of the respondents regarding the impact of Education Management Information System (EMIS) on Planning in Universities of North West Zone, Nigeria. The aggregate mean stood at 3.25 and was found to be higher than the decision mean of 3.00 implying that the impact of Education Management Information System (EMIS) on Planning in Universities of North West Zone, Nigeria is high and positive. However, looking at the individual mean responses, it can be seen that majority of the items have mean responses higher than or equal to the decision mean of 3.00 signifying that their response pattern was positive.

Research Question Two: How does Education Management Information System (EMIS) impact on Decision-making in Universities of North West Zone, Nigeria?

The specific objective in research question 2 seeks to determine how Education Management Information System (EMIS) impact on Decision-making in Universities of North West Zone, Nigeria. Items 17-26 in section 'C' of the instrument was used to answer research question 2 as presented in Table 2.

Table 2: Opinions of Respondents on the Impact of Education Management Information System (EMIS) Impact on Decision-Making in Universities of North West Zone, Nigeria

S/N	Items	SA	A	UD	D	SD	MEAN	STD
1	Education management information system(EMIS) facilitate gathering of data/information needed for decision-making	49	51	87	75	94	3.83	1.45
2	EMIS help in reducing uncertainties in decision-making processes through the data/information it provides.	89	136	39	76	16	3.30	1.38
3	EMIS provides information that help in choosing appropriate course of action among several alternatives.	37	150	100	53	16	3.08	1.17
4	EMIS provides data/information that can easily be used to identify problems in educational operations.	85	48	40	140	43	3.50	1.21
5	EMIS gives insight in identifying relevant criteria that can be used in making decision.	196	22	31	75	32	2.83	1.07
6	EMIS helps in determining decision implementation process.	49	51	87	75	94	3.83	1.45
7	EMIS is an important component of decision-making processes.	89	136	39	76	16	3.30	1.38
8	EMIS enable decision makers collect, analyse and evaluate data/information for decision purposes.	37	150	100	53	16	3.08	1.17

9	EMIS in evaluating decision effectiveness	85	48	40	140	43	3.50	1.21
10	EMIS facilitates access to relevant and timely data that can be used for future reference.	196	22	31	75	32	2.83	1.07
Aggregate Mean							3.31	
Decision mean=3.00								

Table 2 shows the opinions of respondents on the impact of Education Management Information System (EMIS) on Decision-making in Universities of North West Zone, Nigeria. The aggregate mean is 3.31 which was higher than the established decision mean of 3.00. It indicates positive response patterns by the respondents. The individual mean responses of the respondents were largely positive as their individual mean responses were higher than the decision mean of 3.00 as established by the study.

Hypotheses Testing

Null Hypothesis One: There is no significant difference in the opinions of management staff, academic and non-academic staff, students' representatives and NUC officials on the impact of Education Management Information System (EMIS) on Planning in Universities of North West Zone, Nigeria;

Presented in Table 3 is a summary of ANOVA on the opinions of management staff, academic and non-academic staff, students' representatives and NUC officials on the impact of Education Management Information System (EMIS) on Planning in Universities of North West Zone, Nigeria. Responses from items 7-16 in section 'B' of the questionnaire were used as basis for testing null hypothesis 1.

Table 3: Summary of One-Way Analysis of Variance on the Impact of Education Management Information System (EMIS) on Planning In Universities of North West Zone, Nigeria

Source	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	0.455	2	0.228	2.846	0.060
Within Groups	17.275	353	0.080		
Total	17.731	355			

(F-critical=3.00, $p > 0.05$)

The summary of One-Way Analysis of Variance (ANOVA) presented in Table 3 shows the opinions of management staff, academic and non-academic staff, students' representatives and NUC officials on the impact of Education Management Information System (EMIS) on Planning in Universities of North West Zone, Nigeria. It indicated that the respondents did not differ significantly in their opinions regarding the impact of Education Management Information System (EMIS) on Planning in Universities of North West Zone, Nigeria. This conclusion is drawn based on the fact that the observed F-value of 2.846 was found to be less

than the table value (critical value) of 3.00 at Df = 2, 353. Also, the p-value of 0.060 was found to be greater than 0.05 ($p > 0.05$). Therefore, the null hypothesis is retained.

Null Hypothesis Two: There is no significant difference in the opinions of respondents on impact of Education Management Information System (EMIS) on Decision-making in Universities of North West Zone, Nigeria;

Presented in Table 4 is a summary of ANOVA on the opinions of respondents on impact of Education Management Information System (EMIS) on Decision-making in Universities of North West Zone, Nigeria. Responses from items 17-26 in section 'C' of the questionnaire were used as basis for testing null hypothesis 2.

Table 4: Summary of One-Way Analysis of Variance on the Impact of Education Management Information System (EMIS) on Decision-Making in Universities of North West Zone, Nigeria

Source	Sum of Squares	Df	Mean Square	F-value	Sig.
Between Groups	0.042	2	0.021	0.073	0.930
Within Groups	62.544	353	0.290		
Total	62.586	355			

(F-critical=3.00, $p > 0.05$)

The summary of One-Way Analysis of Variance (ANOVA) in Table 4 did not reveal significant difference in the opinions of respondents on impact of Education Management Information System (EMIS) on Decision-making in Universities of North West Zone, Nigeria. This was due to the fact that the F-value obtained 0.073 at Df = 2, 353, was found to be less than the critical value of (3.00) at the bottom of the table. In addition, the p-value obtained 0.930 was found to be greater than the 0.05 alpha level of significance ($p > 0.05$). Consequently, the null hypothesis is retained.

Discussions of Findings

The result of ANOVA shows significant difference in the opinions of management staff, academic and non-academic staff, students' representatives and NUC officials on the impact of Education Management Information System (EMIS) on Planning in Universities of North West Zone, Nigeria. It indicated that the respondents did not differ significantly in their opinions regarding the impact of Education Management Information System (EMIS) on Planning in Universities of North West Zone, Nigeria. The result of ANOVA did not reveal significant difference in the opinions of respondents on impact of Education Management Information System (EMIS) on Decision-making in Universities of North West Zone, Nigeria; According to Moorty (2019), MIS is a decision-making instrument used by top management comprising of a set of controls. MIS provides administrators and managers with the information required to manage schools and organizations efficiently and effectively. MIS are being used by school administrators and managers to support a range of administrative activities such as financial management, staff allocation, timetable, attendance monitoring, clocking in and out, reporting, assessment records and resources. MIS has managed to ease

the task of administrators, teachers, staff and others through a multi-function platform (Syifa, 2019). Also according to the author, the school system management also manage school's interaction with the pupils and parents. This makes the communication between the three parties effective. For effective administration of the school, Education Management Information Systems (EMIS) becomes imperative. EMIS is a web which provides information to key stakeholders in the education sector, helping them with important data needed to improve education at all levels. Administrators within the education sector will settle comfortably on the platform with its simple, easy-to-understand interface and features that adequately equips them for precise human and resource planning, school mapping and important analytics for quality decision making. Gehlawat (2014) is of the view that EMIS provides information to manage the institution efficiently and effectively. They provide an objective system for recording and aggregating information and supports the institution's strategic goals and direction. Since EMIS supplies the decision makers with facts, it supports and enhances the overall decision making process of the school.

Conclusion

The integration of EMIS in universities in Nigeria's North West Zone has had a profound impact on planning and decision-making processes. By providing accurate and timely data, EMIS supports evidence-based decision-making, resource optimization, and improved academic outcomes. However, overcoming the challenges associated with its implementation is crucial to fully realizing its potential benefits. Continued investment in infrastructure, training, and stakeholder engagement will be essential for the sustained success of EMIS in enhancing the quality of higher education in the region. From the analysis of the data collected for the study, the researcher would want to conclude as follows:

- i. Education Management Information System (EMIS) has impacted on Planning in Universities of North West Zone, Nigeria;
- ii. Education Management Information System (EMIS) has impacted on Decision-making in Universities of North West Zone, Nigeria;

Recommendations

From the findings of this study, the researchers recommended as follows:

1. There is the need for the management of universities to ensure maximum utilization of Education Management Information System (EMIS) in planning their activities. This will greatly assist in ensuring effective and efficient service delivery in Universities of North West Zone, Nigeria;
2. The management of the universities from the departmental level upward should adopt the Education Management Information System (EMIS) in Decision-making processes that affect both staff and students of the universities. This is expected to promote efficiency, transparency and accountability in the university administration at all level in North West Zone, Nigeria;

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