

Impact of Management Information System on The Administration of Tertiary Institutions in Niger State, Nigeria

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Abstract

This study examined the impact of management information system on the administration of tertiary institutions in Niger State, Nigeria". Two purposes guided the study which were to: assess the impact of management information system on record keeping in tertiary institutions and examine the impact of management information system on decision making process in tertiary institutions in Niger State. Two research questions and hypotheses were raised and formulated respectively to guide the study. Descriptive survey research design was used. The population of the study was 3,093 which consisted 63 management staff who hold the positions of authority, 1,216 academic staff and 1,814 non-academic staff encompassing employees who are not instructors. The sample of the study was 333 respondents. Simple random sampling technique was used to obtain the sample size. A self-designed questionnaire was used as an instrument for the study. Frequency counts, simple percentage, mean and standard deviation were used to answer the research questions while One-Way-Analysis of Variance (ANOVA) was used to test the formulated null hypotheses at 0.05 level of significance. Findings of the study revealed that management information systems (MIS) significantly enhance institutional records management by improving organization, and reliability of information. Also, it shows that (MIS) have a significant impact on decision-making among management, academic, and

non-academic staff. The study recommended that tertiary institutions in Niger State should make more use of (MIS) in record keeping through uniform training and implementation practices that will strive to further improve access to records.

Keywords: Management, Information, Record-Keeping, Decision-Making

Introduction

The complexity in administrative process in many organizations requires a modernized system approach to ease the process. School is an institution of learning saddled with the responsibility of implementing educational policies and actualizing the goals of education. This cannot be realized without effective administration. The introduction of Management Information Systems (MIS) to schools have caused significant changes in the roles and working styles of managers and administrators. Management Information System is a global concept for educational management that encompasses the application of modern information and communication technology in the collection collation, storage, and analysis of education data.

Over the years, authors have described management information system in different ways. For instance, Thompson and Anachuna (2019) defined Management Information System (MIS) as the application of modern technologies and computerized methods of imputing processing, storing, and retrieving organizational information for effective administration. According to Nganjiozor (2016), MIS as 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. Management information system (MIS) as opined by Madiha (2013) is being used by schools to support a range of administrative activities including attendance monitoring, assessment records, reporting, financial management, and resource and staff allocation.

MIS is designed to assist managers in performing their work through an organized and most effective mode of information collection, processing, storage and retrieval model (Nwangwu et al., 2013). It provides managers with the information required to manage organizations efficiently and effectively. The systems are distinct from other information systems in that they are designed to be used to analyze and facilitate strategic and operational activities in the organization (Shah, 2013). Tertiary Education in Nigeria is an education that is acquired after the completion of secondary education. Tertiary institutions such as Universities, Polytechnics, Monotechnic, and Colleges of Education (COES) produce values that help individuals benefit themselves and contribute meaningfully to the development of the society in various fields of profession. Federal Republic of Nigeria in the National Policy on Education (2013) hopes that economic empowerment through entrepreneurship and human capital development can be better inculcated through a well-designed national system of higher education whose broad objectives include the inculcation of national consciousness and national unity; the training of the mind in the understanding of the world around; and the acquisition of appropriate skills, abilities and competences both mental and physical as equipment for individual to live in and contribute to the development of the society.

To achieve these objectives, tertiary institutions of learning need to move with the rest of the world in this information age when technologies have advanced to improve the dexterity and increased efficiency. This underscores the importance of MIS in education sector. MIS plays a

lot of roles in tertiary institutions of learning. One of such roles is record keeping purpose. Jumare (2017) defined records as documents kept by schools for future references. It also helps the school or organization to take decisions. Staff and students' record is an essential requirement for the successful operation of any educational institution just as we keep financial and material record. Making use of MIS for record keeping and management helps to raise the standard of school records anywhere in the world (Adamu, 2017). The speed of processing and the ability of sharing the information with others in remote locations make these systems important. Daily problematic conditions that require decision making are based on the complicated and unexpected nature of school environment. For this reason, as a problem solver, the educational manager has to gather and analyze information continuously.

In addition, managers have been required to make more decisions in short times because of the increasing expectations from the educational system (Adamu, 2017). Moreover, decision making has been faster, more frequent and more complicated in schools of today. This was made easy through the introduction of MIS in schools. Over the years, many studies have been conducted on impact of MIS on the management of educational institutions. For instance, Thompson and Anachuna (2019) revealed that school administrators do not utilize management information system for managing students' attendance using spreadsheet software, disseminating information to students and parents through the school website, encouraging teachers to give home assignment to students using email system. Adamu (2017) found that MIS such as computers perform the role of aiding school administration and data management in the area of record keeping and retrieval. According to the study conducted by Hayatu (2011), even though schools could access broad sources of information, much of them were used mostly in the decision-making process, planning and reporting instead of direct teaching.

The state of administrative activities in tertiary institutions in Niger State is worrisome. It was observed by the researcher that school administrators in tertiary institutions who are the chief administrative officers are on the frontline of the battle to ensure a smooth and accountable administrative process in the school. Personal observation of the researcher also revealed cases of delay in processing students' results, poor students' attendance monitoring and admission of new students, inability to identify students who default payment, misplacement of vital financial records among others in most tertiary institutions in Niger State. These challenges, perhaps, may be as a result of the inability school management team to utilize management information system to enhance smooth and uninterrupted administrative activities in their respective institutions. However, there are still missing data and results here and there due to inadequate record keeping; wastage of human, material and time resources due to inadequate communication network. Also, inadequate staff development and constraints of man power shortage to handle ICT facilities. It is against this backdrop that this research study assessed the impact of Management Information System (MIS) on the administration of tertiary institutions in Niger State.

Research Purposes

The study:

1. assessed the impact of management information system on record keeping in tertiary institutions in Niger State; and
2. examined the impact of management information system on decision-making process in tertiary institutions in Niger State.

Research Questions

The following questions were raised to guide the study:

1. In what ways does Management Information System impact on record keeping in tertiary institutions in Niger State?
2. How does Management Information System impact on decision-making process in tertiary institutions in Niger State?

Hypotheses

The following hypotheses were formulated to guide the study:

H₀₁: There is no significant difference in the opinions of management staff, academic staff and non-academic staff on the impact of management information system on record keeping in tertiary institutions in Niger State.

H₀₂: There is no significant difference in the opinions of respondents on the impact of Management Information System on decision making process in tertiary institutions in Niger State.

Literature Review

With management information systems being relatively recent entrants into the management processes of tertiary institutions, administrative functions are now increasingly driven by efficiency, accuracy, and effectiveness. According to Laudon and Laudon (2020), MIS is an organized and standardized system for gathering, processing, storing, and disseminating information in order to support decision-making, coordination, control, and analysis. Generally, MIS in higher institutions provides reliable and timely data, thereby equipping administrators with the necessary information to enhance institutional planning, resource allocation, and governance. As discussed by Hayatu (2011), schools often possess vast amounts of data; however, much of this information is primarily used for planning, reporting, and budgetary decisions, rather than being applied directly to teaching. This reflects the administrative dimension of MIS within educational institutions. Similarly, Oko, Okon, and Abang (2016) found that efficient electronic record management can significantly improve data management in Nigerian tertiary institutions. Their study highlighted that MIS ensures accurate record-keeping, which is essential for student administration, staff management, and institutional accountability.

Moreover, Adebayo and Abdulrahman (2014) noted that MIS is useful not only for administration but also for enhancing efficiency in resource utilization, monitoring staff

performance, and planning academic programs. They emphasized that the application of MIS increases accountability and reduces bureaucratic bottlenecks in administrative processes. Likewise, Yusuf (2020) identified MIS as a tool that facilitates effective governance in higher education by providing decision-makers with transparent, timely, and accurate information for strategic planning and policy formulation. Despite these advantages, the adoption of MIS in tertiary institutions in developing countries faces significant challenges. Eze and Nwankwo (2018) identified inadequate infrastructure, poor funding, and a shortage of technical expertise as key barriers to its effective implementation in Nigeria. In addition, staff resistance to change and insufficient training opportunities have also hindered the successful integration of MIS into administrative activities (Oyelade, 2019).

Methodology

Descriptive survey research design was used for the study. According to Adamu and Ezenwegbu (2016), in descriptive survey design, the researcher usually obtains information or data from other people whose representatives (samples) are used to give information about the larger population. Since the study acquired data from respondents to assess the impact of Management Information System (MIS) on the administration of tertiary institutions in Niger State, descriptive survey design was deemed appropriate. The population of the study was 3,093 respondents. This consisted of 63 Management Staff, 1,216 Academic Staff and 1,814 Non-Academic Staff from all the tertiary institutions of Niger State. Niger State has 11 tertiary institutions (Niger State Ministry of Tertiary Education, 2021).

Using simple random sampling, 4 institutions (36% of the 11) were selected: IBB University, Lapai; College of Education, Minna; Niger State College of Agriculture, Mokwa; and School of Nursing Sciences, Bida. This selection aligns with Olagbewo's (2006) recommended sampling range 15-30% for education and social sciences. The sample size used for the study were 333 respondents. The selection was based on the recommendation of Research Advisor 2006. Proportionate sampling technique were used to select respondents: 175 from IBB University, 115 from College of Education, 15 from the College of Agriculture, and 28 from the School of Nursing Sciences, comprising of 12 management staff, 126 academic, 195 non-academic. A self-designed questionnaire of 20 items, tagged "Impact of Management Information System (MIS) on the Administration of Tertiary Institutions in Niger State, Nigeria (IMISOATI) by the researcher was used to collect data for the study. The instrument was structured on a 5-points Likert's scale options of Strongly Agree (SA), Agree (A), Undecided (U), Disagree (D) and Strongly Disagree (SD) with the numerical values of 5, 4, 3, 2 and 1 respectively.

Two research experts in the field of Educational Administration and Planning validated the instrument. Descriptive statistics of mean and standard deviation were used to answer the research questions while One-Way Analysis of Variance (ANOVA) was used to test the null hypotheses at 0.05 level of significance. New times roman. On the other hand, when the mean score of an item is less than 3.00, the item was considered disagree. A total of 333 copies of the questionnaire were distributed but only 311 copies were returned. The analysis of the study was therefore, based on the data gathered from the above-mentioned number of returned copies of questionnaire.

Results

Research Question One: In what ways does Management Information System impact on record keeping in tertiary institutions in Niger State?

Table 1

Opinions of Respondents on the Impact of Management Information System on Record Keeping in Tertiary Institutions in Niger State

S/N	Item Statements	Categories of Respondents	SA		A		U		D		SD		M
			F	%	F	%	F	%	F	%	F	%	
1	Through the use of microfilm and CD-Rom, MIS had contributed to the effective storage and management of records in tertiary institutions.	Mgt. Staff	2	20	5	50	0	0	3	30	0	0	3.53
		Acad. Staff	29	25.4	38	33.3	16	14.0	28	24.6	3	2.6	3.50
		N-Acad. Staff	50	26.7	51	27.3	50	26.7	29	15.5	7	2.7	3.27
2	Through MIS, proper record keeping in the institution is enhanced.	Mgt. Staff	1	10	6	60	0	0	3	30	0	0	3.71
		Acad. Staff	22	19.3	52	45.6	5	4.4	28	24.6	7	6.1	3.43
		N-Acad. Staff	35	18.7	100	53.5	11	5.9	27	14.4	14	7.5	3.21
3	Through MIS devices, incoming and outgoing mails are recorded and kept in the institution.	Mgt. Staff	2	20	6	60	0	0	2	20	0	0	3.24
		Acad. Staff	31	27.2	43	37.7	7	6.1	27	23.7	6	5.3	3.32
		N-Acad. Staff	61	32.6	63	33.7	15	8.0	38	20.3	10	5.3	3.81
4	Through MIS, records of student's admission are effectively kept in the institution.	Mgt. Staff	0	0	6	60	1	10	2	20	1	10	3.91
		Acad. Staff	9	7.9	68	59.6	12	10.5	21	18.4	4	3.5	3.18
		N-Acad. Staff	16	8.6	111	59.4	29	15.5	25	13.4	6	3.2	3.61
5	Through MIS, employee records are effectively kept in the institution.	Mgt. Staff	1	10	6	60	0	0	3	30	0	0	3.42
		Acad. Staff	30	26.3	46	40.4	14	12.3	20	17.5	4	3.5	3.48
		N-Acad. Staff	31	16.6	89	47.6	30	16.0	34	18.2	3	1.6	3.62
6	Through MIS students payment details are stored and retrieved in the institution.	Mgt. Staff	2	20	3	30	0	0	3	30	0	0	3.73
		Acad. Staff	15	13.2	57	50.0	17	14.9	21	18.4	4	3.5	3.65
		N-Acad. Staff	15	8.0	81	43.3	46	24.6	43	23.0	2	1.1	3.41
7		Mgt. Staff	0	0	6	60	2	20	2	20	0	0	3.37

8	Through MIS, there is efficiency in records process in the institutions.	Acad. Staff	28	24.6	40	35.1	15	13.2	20	17.5	11	9.6	3.81
		N-Acad. Staff	66	35.3	56	29.9	30	16.0	25	13.4	10	5.3	3.52
		Mgt. Staff	5	50	4	40	1	10	0	0	0	0	3.78
9	Through MIS, effective management of records in tertiary institutions is enhanced.	Acad. Staff	18	15.8	68	59.6	5	4.4	20	17.5	11	9.6	3.63
		N-Acad. Staff	21	11.2	108	57.8	30	16.0	25	13.4	10	5.3	3.46
		Mgt. Staff	3	30	3	30	3	30	1	10	0	0	3.39
10	Through MIS, students' academic records and transcripts are computerized and processed easily and faster.	Acad. Staff	14	12.3	72	63.2	5	4.4	16	14.0	7	6.1	3.37
		N-Acad. Staff	9	4.8	115	61.5	20	10.7	39	20.9	4	2.1	3.65
		Mgt. Staff	4	40	4	40	0	0	2	20	0	0	3.24
10	Through MIS, proper records of students' registration status are enhanced in tertiary institutions.	Acad. Staff	17	14.9	48	42.1	16	14.0	29	25.4	4	3.5	3.33
		N-Acad. Staff	19	10.2	69	36.9	33	17.6	65	34.8	1	0.5	3.21
		Mgt. Staff	4	40	4	40	0	0	2	20	0	0	3.24

Table 1 show that statements 1-10 were all accepted. This is because they had response mean greater than the instrument scale means of 3.00. This implies that majority of the respondents agreed with all the item statements stated above as ways Management Information System impacted on record keeping in tertiary institutions in Niger State.

Research Question Two: How does Management Information System impact on decision making process in tertiary institutions in Niger State?

Table 2:

Opinions of Respondents on the Impact of Management Information System on Decision Making Process in Tertiary Institutions in Niger State

S/ N	Item Statements	Categories of Respondents	SA		A		U		D		SD		M
			F	%	F	%	F	%	F	%	F	%	
1	Through MIS, the management of the tertiary institutions involves staff in decision making process.	Mgt. Staff	6	60	3	30	0	0	1	10	0	0	4.21
		Acad. Staff	47	41.2	38	33.3	15	13.2	13	11.4	1	0.9	3.98
		N-Acad. Staff	61	32.6	61	32.6	42	22.5	18	9.6	5	2.7	3.79
2	Through MIS, the management of	Mgt. Staff	7	70.0	3	30.0	0	0	0	0	0	0	3.23

	the tertiary institutions	Acad. Staff	34	29.8	55	48.2	10	8.8	11	9.6	4	3.5	3.31
	involves SUGs on decision making that concern them.	N-Acad. Staff	53	28.3	99	52.9	12	6.4	15	8.0	8	4.8	3.12
3	Through MIS, the management of the institution involves the neighbouring communities on decision making process that affect them.	Mgt. Staff	2	20	6	60	2	20	0	0	0	0	3.89
		Acad. Staff	38	33.3	46	40.4	7	6.1	19	16.7	4	3.5	3.69
		N-Acad. Staff	78	41.7	69	36.9	15	8.0	20	10.7	5	2.7	3.92
4	Through MIS, decision making process is enhanced in the tertiary institutions.	Mgt. Staff	3	30	4	40	2	20	1	10	0	0	3.32
		Acad. Staff	8	7.0	60	57.9	18	15.8	15	13.2	7	6.1	3.17
		N-Acad. Staff	22	11.8	11	61.0	28	15.0	20	10.7	3	1.6	3.13
5	Through MIS, the management of the institution welcomes new ideas from staff.	Mgt. Staff	7	70	0	0	1	10	2	20	0	0	3.98
		Acad. Staff	37	32.5	52	45.6	13	11.4	11	9.6	1	0.9	3.12
		N-Acad. Staff	46	24.6	97	51.9	37	19.8	7	3.7	0	0	3.18
6	Through MIS, management of the institutions uses centralized data base in decision making.	Mgt. Staff	3	30	3	30	2	20	2	20	0	0	4.12
		Acad. Staff	15	13.2	59	51.8	17	14.9	21	18.4	2	1.8	3.87
		N-Acad. Staff	22	11.8	73	39	31	16.6	61	32.6	0	0	3.98
7	Through MIS, issues that require urgent decisions are easily taken by the management of the institutions.	Mgt. Staff	1	10	5	50	2	20	2	20	0	0	3.85
		Acad. Staff	12	10.5	47	41.2	29	25.4	19	16.7	7	6.1	3.98
		N-Acad. Staff	11	5.9	75	40.1	58	31.0	36	19.3	7	3.7	3.55
8	Through MIS, school managers have been required to make more decisions in short times.	Mgt. Staff	1	10	4	40	3	30	2	20	0	0	3.76
		Acad. Staff	8	7.0	46	40.4	12	10.5	32	28.1	10	14.0	3.87
		N-Acad. Staff	11	5.9	80	42.8	19	10.2	54	28.9	23	12.3	3.82
9		Mgt. Staff	3	30	5	50	0	0	2	20	0	0	3.49

	Through MIS, data based decision making are used by school management to enhance the school administration.	Acad. Staff	53	46.	48	42.	4	3.5	8	7.0	1	0.9	3.76
		N-Acad. Staff	85	45.	77	41.	5	2.7	20	10.7	0	0	3.46
10	Through MIS, gathering up-to-date data can be accessed on-time and analyze to make decision in the schools.	Mgt. Staff	3	30	5	50	0	0	2	20	0	0	3.88
		Acad. Staff	46	40.	50	43.	4	3.5	12	10.5	2	1.8	3.78
		N-Acad. Staff	79	42.	87	46.	8	4.3	13	7.0	0	0	3.76

Table 2 shows that statements 1-10 were all accepted. This is because they had response mean greater than the instrument scale means of 3.00. This implies that majority of the respondents agreed with all the item statements stated above as ways Management Information System impacted on decision making process in tertiary institutions in Niger State.

H₀₁: There is no significant difference in the opinions of management staff, academic staff and non-academic staff on the impact of management information system on record keeping in tertiary institutions in Niger State

Tables 3

Summary of One-Way ANOVA on the Impact of MIS on Record Keeping in Tertiary Institutions in Niger State

Variation	Sum of Squares	Df	Mean Square	F-ratio	F-crit.	Sig.(P)
Between Groups	0.98	2	0.049			
				0.165	3.03	0.85
Within Groups	91.730	308	0.298			
Total	91.828	310				

P<0.05

Table 3 shows that the calculated Sig.(P) value of 0.85 is greater than 0.05 level of significant set for the study, while the calculated F-ratio value of 0.165 is less than the 3.03 F-critical value. Hence, the null hypothesis is hereby retained. Therefore, there is no significant difference in the opinions of Management Staff, Academic Staff and Non-Academic Staff on

the impact of Management Information System on record keeping in tertiary institutions in Niger State.

H₀₂: There is no significant difference in the opinions of Management Staff, Academic Staff and Non-Academic Staff on the impact of Management Information System on decision making process in tertiary institutions in Niger State.

Tables 4

Summary of One-Way ANOVA on the Impact of MIS on Decision Making Process in Tertiary Institutions in Niger State.

Variation	Sum of Squares	Df	Mean Square	F-ratio	F-crit.	Sig.(P)
Between Groups	0.432	2	0.216			
				1.263	3.03	0.28
Within Groups	52.676	308	0.171			
Total	53.108	310				

P<0.05

Table 4 shows that the calculated Sig.(P) value of 0.28 is greater than 0.05 level of significant set for the study, while the calculated F-ratio value of 1.263 is less than the 3.03 F-critical value. Hence, the null hypothesis is hereby retained. Therefore, there is no significant difference in the opinions of Management Staff, Academic Staff and Non-Academic Staff on the impact of Management Information System on decision-making process in tertiary institutions in Niger State.

Discussions

Management Information Systems (MIS) significantly enhance institutional records management by improving organization, accessibility, and reliability of information. These technical improvements not only streamline day-to-day administrative functions but also reinforce institutional accountability by ensuring that accurate and timely information is available to authorized decision-makers. Moreover, respondents advocated for coherent organizational approaches to maximize MIS benefits. They emphasized the importance of unified policies, standardized training, and coordinated implementation strategies that integrate MIS with established records management practices. Such harmonization fosters consistent use and maintenance of records across the institution. This finding is in line with the finding of Kassimu (2015) and Olokoba et al., (2014) found that Management Information System enhances effective record keeping in schools. Also, Thompson and Anachuna (2019) revealed that school administrators do not utilize management information system for students’ personnel administration in secondary schools by not; allowing students to apply for admission online, processing students results using spreadsheet software, managing students’ attendance using spreadsheet software, disseminating information to students and parents through the school website among others.

The findings of the study show that Management Information Systems (MIS) have a significant impact on decision-making among management, academic, and non-academic staff in the sampled institutions. The study reveals that MIS facilitates efficient and accurate decision-making by providing timely and relevant information in formats suitable for different organizational and functional levels. For management, MIS supports strategic planning, resource allocation, and performance tracking by consolidating financial, operational, and stakeholder data. In academic, MIS aids curriculum planning, student evaluation, and research management through on-demand access to learning analytics, enrolment trends, and research outputs. For non-academic staff, MIS improves operational efficiency in areas such as human resources, facilities, and procurement by providing access to workflows and ensuring transparent record keeping. This observation correlates with the research of Hayatu (2011) on the Assessment of Information Management in Primary and Secondary Schools in Ahmadu Bello University, Zaria, which indicated that most of the available Information Management Systems were used for decision-making, planning, and reporting purposes. It is important to note that technology-related infrastructures of schools may be insufficient; management information systems have an important contribution to school management especially in the area of decision-making process.

Conclusion

Based on the findings it was concluded that management information system (MIS) has a pivotal role in enhancing record keeping as well as making decisions in the institutions of higher learning in Niger State. By enhancing organization, accessibility and reliability of information, MIS not only make it easier to run day to day administrative activities but also make the institution more accountable. The results also show that MIS can deliver information despite level of relevance in the organization at an appropriate time. A combination of these results concludes that MIS is the essential means of enhancing greater efficiency, effectiveness, and informed decision-making in institutions of higher learning.

Recommendations

In line with the research findings and conclusions, the following recommendations were made:

1. Niger state ministry of education through a unified policy, should emphasize that all tertiary institutions in Niger State should make more use of management information systems (MIS) in record keeping through a uniform training and implementation practices that will strive to further improve access to records and their reliability.
2. Niger state ministry of education should reinforce the use and application of Management Information System (MIS) by constantly seeking information that decision-makers at every level should obtain information through MIS to optimize their planning, academic management, and overall administration productivity.

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