

---

## STATUS, EXCHANGE OF DATA/INFORMATION AND SERVICES PROVIDED BY MANAGEMENT INFORMATION SYSTEMS IN UNIVERSITIES IN SOUTHWESTERN NIGERIA

**OLADAPO Oludare Samuel, Ph.D**

Oyo State College of Education, Lanlate

[oladapooludaresamuel@gmail.com](mailto:oladapooludaresamuel@gmail.com) 07039392022, 08027952660

### Abstract

*In universities, Management Information Systems (MIS) inform decision-makers about pedagogical operation, performance, shortcomings and needs. Therefore, this study investigated status, services and extent to which MIS facilitated exchange of data/information among units/departments in universities in Southwestern Nigeria. The significant difference in services provided by MIS was tested at 0.05 significance level. Descriptive survey design of the correlation type was adopted. Only three federal and three private universities located in Southwestern Nigeria participated. The study population comprised all the thirty five (35) universities in Southwestern Nigeria. 1681 respondents were selected. Scales, questionnaires and observation were used to collect data. Tables, cross tabulations, percentages, frequency counts, ranking of means and Two-way statistics employed. Adoption of MIS commenced in University of Ibadan and Obafemi Awolowo university (OAU) in 1995, Federal University of Technology, Akure (1998), Joseph Ayo Babalola (2006), Adeleke University (2011) and Lead City University (LCU) (2012). Only OAU enjoyed external funding of the MIS among federal universities. MIS were functional, with the exception of the LCU, where MIS were still at formation stage. 70 (43.7%) respondents opined that data/information exchanged were strongly inadequate. The study concluded that there existed significant differences in the services provided by MIS ( $F_{(5, 148)} = 3.08$ ). This implied that data from multiple sources, levels and years within and external university systems might be difficult to be integrated. Universities authorities must ensure compatibility of data/information services provided by MIS in Nigerian universities.*

**Keywords:** Management Information Systems, Status of MIS, Exchange of data/information, Services provided by MIS, Universities

## Introduction

Management Information Systems (MIS) herein refer to computer-based systems that combine hardware, software, humanware, policies and network products in an integrated solution that provide managers with data/information in a format suitable for planning, analysing, monitoring, predicting, reporting and decision-making. This is as supported by Beal, (2014) "MIS refers to computer-based systems that provide managers with the tools to organise, evaluate and efficiently manage departments within an organization".

MIS in Nigerian universities are essential facilities for generating and disseminating information and could also be an operational unit. They optimise the collection, transfer and presentation of information through an integrated structure of database and information flow. MIS inform decision makers about the pedagogical operation, performance, shortcomings and needs because they are the bases of the management, planning and evaluation of an education system.

MIS as a concept, a process or a facility is wide and broad. Hence, this study examined the status of MIS, extent to which MIS facilitated communication and exchange of data/information among units and departments as well as services provided by MIS in tertiary institutions. Owing to the limited resources available to the researcher, this study will not cover all the tertiary institutions in Nigeria. As such, only three federal and three private universities located in Southwestern Nigeria were considered relevant in this study. The specific objectives of this study are as follow.

- To examine the status of MIS in universities in Southwestern Nigeria
- To ascertain the magnitude to which MIS enhance exchange of data/information among units/departments in universities in Southwestern Nigeria
- To ascertain services provided by the MIS in universities in Southwestern Nigeria.

This study also tested this hypothesis at 0.05 level of significance.

$H_{01}$ : There is no significant difference in services provided by MIS in universities in Southwestern Nigeria.

## Methodology

In this study, the descriptive survey design of the correlation type was adopted. This design enabled the research to investigate status and services rendered by MIS and the extent to which MIS enhance exchange of data/information among departments and unit in universities in southwestern Nigerian. The population of this study comprised all the thirty five (35) universities in Southwestern Nigeria, defined at three levels. i) Chairmen/Directors of MIS/ICT units. ii) Top management (strategic), mid-level management (tactical). iii) Applications end-user in all the 35 universities in Southwestern Nigeria. A sample of six universities located in Southwestern Nigeria were selected to take part in the study, they were as follows. i) University of Ibadan, Ibadan. ii) Obafemi Awolowo University, Ile-Ife. iii) Federal University of Technology, Akure. iv) Lead City University Ibadan. v) Adeleke University, Ede. vi) Joseph Ayo Babalola University, Ikeji-Arakeji. A total of 1681 respondents were selected. Triangulation strategy, which involved the combination of scales, questionnaires and observation were used as data collection instruments. Tables, cross tabulations, simple percentages, frequency counts and ranking of means were the descriptive statistics employed in this study. The Two-way Analysis of Variance was used in determining whether there is significant difference in the services provided by MIS within and across

universities located in Southwestern Nigeria.

## Finding

### *Status of MIS in universities in Southwestern Nigeria*

As regards the status of MIS in universities in Southwestern Nigeria, the observation revealed that the physical MIS unit of UI is located at the senate building (ground floor). MIS unit is separated from the ICT unit located directly on the first floor, it has an online unit responsible for the UI portals (such as student admission, student registration, school fees). There is also the Information Technology and Media Services (ITeMS) a subset of MIS unit. The Information Technology Network and Hardware (ITN&H) is another subsidiary of MIS unit. At the UI, the oversight functions of ITN&H include deployment and installation; operating and maintaining of networks.

At the OAU, MIS unit is located within a new complex, ICT centre. Apart from the ICT centre, there are other physical ICT structures, which include the Student Internet Access Laboratory (SIAL), the Information Technology and Communication Unit (INTECU) and the Application of Information Technologies to Teaching Research and Administration (AICTTRA) Conference, powered by Carnegie Corporation of New York. This shows that the university is not funding MIS unit alone, but enjoys donations and aids from foreign agencies. At the FUTA, MIS unit is housed within the senate building (ground floor). The unit was acquired and use commenced in 1998. Seven out of eight workers in this unit are female. MIS unit is essentially Personnel Management Systems (PMS).

The unit is headed by a professor of computer sciences at the AU. MIS are still at formation stage (developing) at the LCU and the JABU. These two universities have no physical units or structures called MIS. Their ICT units are rendering the services of MIS. For instance, at LCU, the services of MIS were decentralised comprising of the Human Resources Systems (HRS), the Student Information Systems (SIS) and the Health Information Systems (HIS) for students and staff.

**Table 1. State of MIS/ICT Units in the sampled Universities**

	<i>UI</i>	<i>OAU</i>	<i>FUTA</i>	<i>LCU</i>	<i>AU</i>	<i>JABU</i>
<i>Year of acquisition</i>	1995	1995	1998	2015	2011	2006
<i>Mode of acquisition</i>	University	Donour Agencies & University	University	University	University	University
<i>Year of Installation</i>	11 <sup>+</sup>	11 <sup>+</sup>	11 <sup>+</sup>	0-2	3-5	6-10
<i>commencement of use</i>	1995	1995	1998	Not Specified	2011	2006
<i>Assessment</i>	Functional	Functional	Functional	Formation	Functional	Functional

Table 1 shows the year of acquisition, mode of acquisition, year of installation, date of commencement of use of MIS in the six sampled universities in Southwestern Nigeria. UI and OAU acquired and commenced the use of MIS about 20 years ago. FUTA acquired and commenced the use of MIS about 18 years ago, while JABU acquired and commenced the use of MIS about nine years ago, the AU about four years ago and LCU in 2015. In all the six sampled universities, MIS were provided and sponsored by the institutions except OAU that was funded by external body. The overall assessment shows that MIS in these

universities were functional, with the exception of the LCU, where MIS were still at formation stage.

*Magnitude within which MIS enhance exchange of data/information among units/departments in universities in Southwestern Nigeria*

**Table 2. Magnitude of Exchange of Data/Information among Units/Departments in Universities in Southwestern Nigeria**

<i>Regularity of exchange</i>	<i>Frequency</i>	
	<i>No</i>	<i>%</i>
<b>Very often</b>	15	9.5
<b>Often</b>	50	31.3
<b>Occasionally</b>	45	28.1
<b>Rarely</b>	40	25
<b>Never</b>	10	6.2

The results as shown in Table 2 indicated the magnitude to which MIS enhance exchange of data/information with units and departments in Nigerian universities, only 50 (31.3%) and 45 (28.1%) respectively responded that data/information were often and occasionally enhance exchange between MIS and departments. Notwithstanding, there were instances when exchange of information never happened. In few instances, directorates, units/departments in universities in Southwestern Nigeria very often and rarely exchanged data/information with their respective MIS units.

**Table 3. Format within which Data/information were exchanged**

<i>Format</i>	<i>Frequency</i>	
	<i>No</i>	<i>%</i>
<b>Letter</b>	10	6.3
<b>Memo</b>	55	34.4
<b>Bulletin</b>	55	34.4
<b>Personal Contact</b>	15	9.4
<b>Telephone</b>	25	15.6

Table 3 indicated that data/information were exchanged mostly in form of memo and bulletin between MIS and units in universities in Southwestern Nigeria. This was followed by telephone call. Personal contact and letter were rarely used as media for communicating MIS messages.

**Table 4. Adequacy of exchange of information**

<i>Adequacy</i>	<i>Frequency</i>	
	<i>No</i>	<i>%</i>
<b>Strongly Adequate</b>	10	6.3
<b>Adequate</b>	60	37.4
<b>Inadequate</b>	70	43.7
<b>Strongly Inadequate</b>	10	6.3
<b>Don't Know</b>	10	6.3

Table 4 presented the opinions of respondents in respect of adequacy of information exchange by MIS. The results show that exchange of information between MIS and units/departments in universities in Southwestern Nigeria was relatively inadequate. This was attested to by 70 (43.7%) of the total respondents who opined that data/information exchanged were strongly inadequate. Another 10 (6.3%) were of the opinion that the

data/information exchanged were strongly inadequate. Only 60 (37.4%) and 10 (6.3%) of the respondents felt the data/information exchanged between MIS and units/departments in universities in Southwestern Nigeria were adequate and strongly adequate respectively.

**Table 5. Speed of Exchange of Information**

<i>Speed</i>	<i>Frequency</i>	
	<i>No</i>	<i>%</i>
<b>Very Fast</b>	20	12.5
<b>Fast</b>	45	28.1
<b>Slow</b>	85	53.1
<b>Don't Know</b>	10	6.3

From Table 5, it could be observed that the speed of information exchanged by MIS and other departments in universities in Southwestern Nigeria was relatively slow. This was confirmed by 85 (53.1%) of the respondents. Meanwhile, 20 (12.5%) and 45 (28.1%) described the speed within which MIS exchanged data/information with units/departments in universities in southwest Nigeria as very fast and fast respectively.

#### *Services provided by MIS in universities in Southwestern Nigeria*

Services provided by MIS in Nigerian universities were ranked and presented in Tables 6, 7, 8 and 10 respectively.

**Table 6. Ranking of Services provided by MIS for Students in universities in Southwestern Nigeria**

<i>Rank</i>	<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>	<i>5</i>	<i>6</i>	<i>7</i>	<i>Mean</i>
Logging on to the system	68	57	57	100	131	95	103	<b>4.49</b>
Processing of admission	50	61	75	102	126	126	71	<b>4.39</b>
Processing of school fees	46	76	72	104	106	138	69	<b>4.37</b>
Course registration	73	64	75	131	102	97	69	<b>4.13</b>
Student identity card	71	78	103	111	97	84	67	<b>3.99</b>
Allocation of accommodation	102	105	78	96	103	74	53	<b>3.74</b>
Processing of result	107	80	76	95	101	82	70	<b>3.95</b>

The undergraduate and postgraduate students in the sampled universities were requested to rank services provided by MIS. Accordingly, seven indicators were ranked. Table 6 showed that the least mean of 3.74 and the highest 4.49 for allocation of student accommodation and logging on to the system respectively. Students in universities in Southwestern Nigeria revealed that MIS rendered information such as logging on to the system, processing of admission and school fees. However, MIS sparingly provided information pertaining to allocation of student accommodation and processing of results.

**Table 7. Ranking of Services provided by MIS for Staff in Universities in Southwestern Nigeria**

<i>Rank</i>	<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>	<i>5</i>	<i>6</i>	<i>Mean</i>
Logging on to the system	36	12	19	14	17	16	<b>4.06</b>
Processing of employment	20	20	16	28	24	13	<b>3.93</b>
Promotion/advancement	12	14	22	33	27	14	<b>3.95</b>
Staff identification card	5	12	15	26	22	25	<b>4.81</b>
Allocation of accommodation	13	13	21	22	30	10	<b>4.27</b>
Disengagement	12	22	17	15	29	25	<b>4.16</b>

Staff (lecturers, administrators and technologists) ranking of services provided by MIS was subjected to mean rating. Table 9 revealed that the mean for the six indicators ranged between 3.93 and 4.81 for processing of employment and staff identity cards, respectively.

Staff in universities in Southwestern Nigeria responded that MIS provided useful information relating to staff identification card, allocation of accommodation and logging on to the systems, but sparingly provided information linking processing of employment, and issues connecting promotion and advancement of staff.

**Table 8. Ranking of Services provided by MIS for Management (tactical decision-making) in Universities in Southwestern Nigeria**

S/N	Indicators	Mean	S/N	Indicators	Mean
1.	Student course registration	11.11	11.	Staff recruitment	11.11
2.	Student identification card	11.45	12.	Promotion of staff	10.17
3.	Student lecture attendance	13.77	13.	Staff training and development	9.78
4.	Student course grade	9.85	14.	Appointment of Dean/HOD/Director	9.45
5.	Mobilisation for NYSC	9.64	15.	Allocation of offices to staff	8.68
6.	Student passages	9.89	16.	Allocation of staff car parking space	8.19
7.	Allocation of student hall of residence	9.17	17.	Allocation of residential quarters	7.77
8.	Allocation of student car parking space	9.21	18.	Lecturer performance	6.28
9.	Allocation of lecture rooms/theatres	9.53	19.	Staff passages	4.83
10.	Staff recruitment process	7.19	20.	Others	

The responses from management in universities in Southwestern Nigeria as regards MIS providing needed information services for tactical decision-making were mean rated. The highest was 20 and the lowest, 1. The summary was as presented in Table 8, 19 indicators were ranked, the mean ranged between 4.83 and 13.77 for staff passages and student lecture attendance respectively. MIS provided information services relating to: student lecture attendance, processing of student identification card, student course registration, staff recruitment and promotion of staff. MIS barely provided managements in universities in Southwestern Nigeria with needed information services relating to: staff passages, manpower (staff) projection, lecturer performance, allocation of residential quarters.

**Table 9. Ranking of Services Provided by MIS for Management (strategic decision-making) in Universities in Southwestern Nigeria**

Strategic	Rank								
Indicators	1	2	3	4	5	6	7	8	Mean
Student admission	8	6	1	1	-	7	10	14	5.34
Student academic record	7	4	3	-	-	7	12	12	8.51
Manpower (staff) projection	8	1	1	5	4	18	7	3	4.98
Staff recruitment exercise	12	9	1	1	5	5	13	1	4.06
Staff promotion	9	5	8	7	3	4	3	8	4.14
Establishing new faculty/department	3	2	9	15	4	7	3	4	4.45
University academic programmes	4	3	12	6	8	1	6	5	4.93
Stocking library with books & journals	8	4	2	5	8	8	4	6	5.10

The responses from management in universities in Southwestern Nigeria as regards MIS providing needed information for strategic decision-making were also mean rated. The highest was 8 and the lowest, 1. As presented in Table 9, eight indicators were ranked, the mean ranged between 4.06 and 8.51 for staff recruitment exercise and student academic record, respectively. MIS provided information services pertaining to student academic record, student admission, stocking of library with books and journals and manpower (staff) projection.

*H<sub>01</sub>: There is no significant difference in the services provided by MIS in universities in Southwestern Nigeria.*



In testing for the significant difference in services provided by MIS in universities in Southwestern Nigeria, the means as presented in Tables 7, 8, 9 and 10 were subjected to two-way ANOVA.

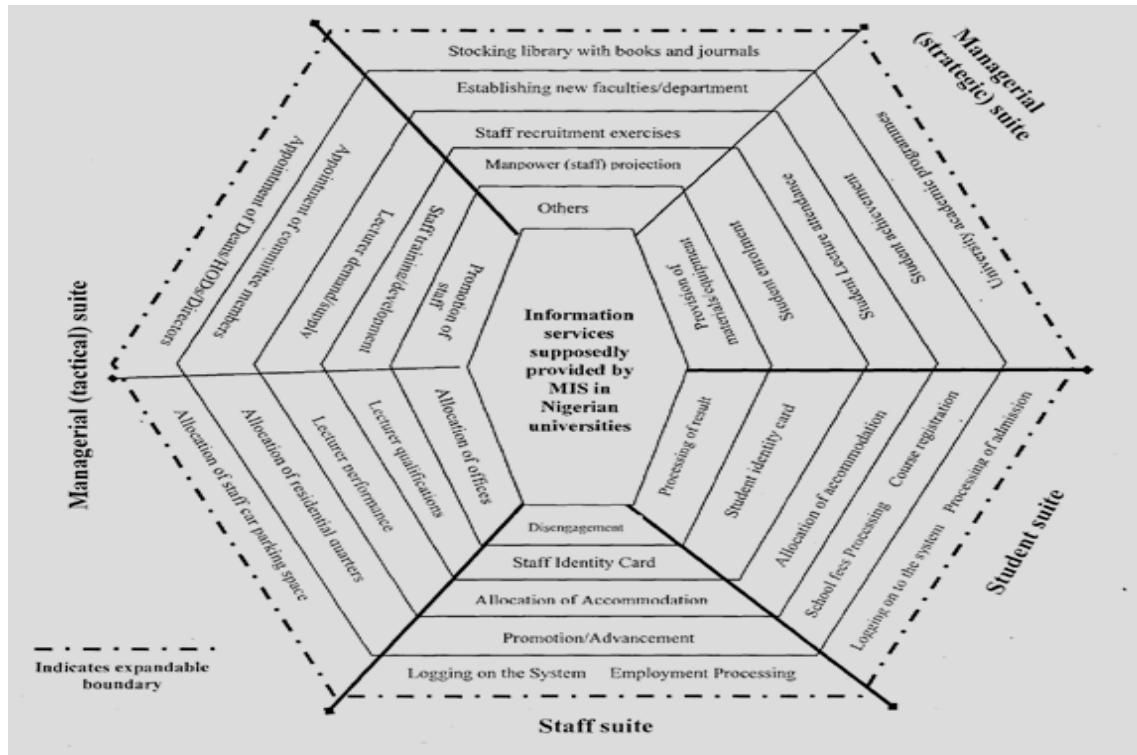
**Table 10. Two-way ANOVA Table**

					5%		
Source	SS	df	MS	F	F <sub>critical</sub>	p-value	
Row	46.03	5	9.21	3.08	2.49	0.02	<b>Reject</b>
Column	135.07	18	7.50	2.51	1.99	0.01	<b>Reject</b>
Interaction	31.13	90	0.35	0.12	1.64	0.00	<b>Reject</b>
Error	104.49	35	2.99				
Total	316.72	148					

Table 10 revealed the significant differences the mean responses of management, staff and student about services provided by MIS in universities in Southwestern Nigeria. Since p-value for between 0.0005 is lesser than 0.05. There was significant difference among the three categories of respondents of the study:  $F_{(5, 148)} = 3.08$ . Within the categories (management, staff and student) there was significant difference,  $F_{(5, 18)} = 2.51$ , since p-value for column is found to be 0.0000 which is lesser than 0.05; for interaction  $F_{(5, 35)} = 0.12$  within the three categories of 0.0006 and is also lesser than 0.05. This study concluded that there existed significant differences in the services provided by MIS in universities in Southwestern Nigeria. The null hypothesis was rejected.

### Discussion of Major Findings

Information services provided by MIS vary in meaning from one campus to another. This variation may be due to the evolving and fragmented nature of student, staff and management services. Over time, campuses may add other services as the need for them arises. These services were centralised in many universities, but in some they were not. To establish some harmony for discussion, this study adopted a web of information services provided by MIS. This graphical representation depicts an array of information services provided by MIS to universities in Southwestern Nigeria. The dotted lines at the outer edges indicate that this is not an exhaustive list.



**Figure 1. Services provided by MIS in universities in Southwestern Nigeria**

Within and across universities in Southwestern Nigeria, MIS should ordinarily provide an opportunity to deliver integrated information services. These services should be blended, customised and personalised for the all stakeholders. This will set the stage for the development of National Educational Management Information Systems (NEMIS). With NEMIS, data from multiple sources within and external to the education system as well as from multiple levels in the education system can be linked, integrated or merged with ease. Integration will only be possible if there is compatibility across multiple subsystems. NEMIS could be organised group of information, a centre or a unit (usually in the Ministry of Education) responsible for collection, processing, analysing, publication, distribution, rendering information services to support educational management at whatever level needed. This finding corroborates Mohamed, Abdul Kadir, May-Lin, Abdul Rahman&Arshad (2009) and Rwehera (2009). These authors asserted that EMIS played vital role in supporting education systems by providing information to monitor developments and the education policymakers, decision-makers and managers to make timely and good decisions.

### Recommendation

Management Information Systems in universities should ordinarily provide an opportunity to deliver integrated service and enhance frequent exchange of data/information.

- To this end, universities managements should ensure frequent exchange of data/information. Services rendered by MIS should be blended, customised and personalised for the all applications end-users in universities located in Southwestern Nigeria.
- Universities should seek support and funding from external organisations. Spirited individuals and corporates bodies could assist in training of MIS personnel, procuring, upgrading and maintaining of MIS components.



### Conclusion

Since information needed by student, staff and management varied from one campus to the other, the services provided by MIS must also vary. This has great implication on the possibly of integrating data/information from different sources, levels and years within and outside university systems in Nigeria in general and universities in Southwestern Nigeria in particular. National University Commission, Ministries of Education and Universities managements especially, must ensure compatibility in services rendered by MIS within and across universities, such that integration of data/information is possible. This will set the pace for establishing and reaping the benefits of National Educational Management Information Systems

### References

- Beal, V. 2014. MIS - management information system. Retrieved 19 November, 2014  
<http://www.webopedia.com/TERM/M/MIS.html>
- Mohamed, A., Abdul Kadir, N., May-Lin, Y., Abdul Rahman, S. and Arshad, N. H. (2009). Data completeness analysis in the Malaysian Educational Management. *International Journal of Education and Development using Information and Communication Technology. (IJEDICT)*, 5(2) 106-122.
- Oladapo, O. S. (2017). Structure of Management Information Systems and Decision-making in universities in southwestern Nigeria. An unpublished Ph.D. Thesis submitted to the Department of Educational Management, University of Ibadan, Ibadan, Nigeria.
- Rwehera, M. 2009. Strengthening the education system to make it a Pillar of Nigeria's vision 2020. Education Sector Support Programme in Nigeria (ESSPIN). Assignment Report Number ESSPIN 226. A contribution to the National Technical Working Group Report.

**About the Author:** Oladapo. O. S. holds a B. Sc. (Geography) 1996, M. Sc. (Geography) 2002, M. Ed. (Educational Management) 2004, Master of Information Science 2006, PGD (Education) 2010 and Doctor of Philosophy (Management Information Systems) 2017. He is presently a Chief Lecturer at Oyo State College of Education, Lanlate.