

Influence of Educational Management Information System (EMIS) on Effective Planning and Administration of Primary Schools in Osun State, Nigeria

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Abstract

The influence of Educational Management Information System (EMIS) on efficient planning and management of public elementary schools in Osun State, Nigeria, was investigated in this study. One hundred and ninety respondents selected from 10 schools sampled from the 3 senatorial districts using the descriptive survey design constitute the sample size for the study. Questions were drawn from the objectives and used to gather information from respondents. Descriptive statistics of frequency counts and percentages were employed to analyse the data. The study revealed that EMIS aided in the management of teaching staff through promotion, transfer, and allocation decisions. The State Universal Basic Education Boards (SUBEB) and Local Government Education Authorities (LGEAs) extensively used information from EMIS for effective planning and policy implementation. There were adequate computer machines, data storage devices, and skilled personnel for operating EMIS in Osun State. However, the study found that many headteachers were not proficient with the use of EMIS because they lacked the confidence and skills to update or alter the system independently. Thus, the study concluded that EMIS had a positive significance on educational planning and administration in Osun State, Nigeria, although it was not embraced by school Administrators. The study recommended continued development of ICT and capacity-building programmes for effective utilization of EMIS to achieve sustainable educational planning and management in Nigeria.

Keywords: *Educational Management Information System (EMIS), School Administration, Educational Planning, Primary Education, Osun State*

Introduction

Education planning and administration require information for decision-making processes. In view of this, Educational Management Information Systems (EMIS) have been widely used to gather, process, store, and distribute data in order to support the creation of policies, the distribution of resources, and the administration of schools (UNESCO, 2022). EMIS contributes to accountability, transparency, and efficient management of educational systems by offering data on staff deployment, student enrollment, facilities, and finances (World Bank, 2021).

EMIS was introduced to address the issues of inadequate record management, databases, and resource management in basic education (Umar & Aliyu, 2022). Through the State Universal Basic Education Boards (SUBEB), teachers' management, infrastructure planning, monitoring, and policy implementation were achieved using EMIS (Adeoye & Adeoye, 2021). However,

the utilization of EMIS for effective planning and administration faces challenges such as insufficient information communication technologies (ICT), resource inadequacy, and inadequate skills among school Administrators (Ogunode, 2020).

Studies conducted in developed and developing countries showed that EMIS played a significant role in enhancing education planning and administration through improved decision-making and increased efficiency (Benavot & Lockheed, 2020; Alshammari, 2021). However, the lack of sufficient ICT facilities and trained personnel affects the effective adoption and utilization of EMIS (Kitainge & Wekesa, 2019). Similar problems were reported in Osun State, Nigeria, where despite the availability of resources for operating EMIS, little was known about the extent of its use for effective planning and administration.

Although the State had fully embraced the use of EMIS through SUBEB, the lack of user competence in utilizing the system's features limited the potential for achieving planning and administrative objectives. The essence of this study was to determine the influence of the Educational Management Information System (EMIS) on the planning and management of public primary schools in Osun State, Nigeria.

Purpose of the Study

The study specifically sought to:

- i. determined the advantages of EMIS on effective planning and administration of primary schools in Osun State in terms of personnel management.
- ii. investigated the utilization of data stored in EMIS for school planning and administration.
- iii. assessed the adequacy of resources available for EMIS officers in planning and administration.
- iv. determined the user-friendliness of EMIS among primary school heads in Osun State.
- v. investigated the influence of Educational Management Information System (EMIS) on effective planning and administration of primary schools in Osun State, Nigeria.

Research Questions

The study was guided by the following research questions:

- a. What advantages do EMIS have on effective planning and administration of primary schools in Osun State in terms of personnel management?
- b. How well are the data stored in EMIS utilized in the planning and administration of primary schools?
- c. What resources are available for EMIS officers in the planning and administration of primary schools in Osun State?
- d. How user-friendly is EMIS to primary school heads in Osun State?

Hypothesis

H₀: Educational Management Information System (personnel management, data utilization, resource adequacy, and user-friendliness) has no significant joint influence on effective planning and administration of primary schools in Osun State.

Synthesis of Related Literature and Theoretical Framework

By collecting, processing, analyzing, and disseminating data, the Educational Management Information System (EMIS) makes planning, monitoring, and decision-making in education easier (UNESCO, 2022). By providing information on enrollment, staffing, facilities, finances, and school performance, it encourages transparency and evidence-based education management (World Bank, 2021). According to Adeoye & Adeoye (2021), the implementation of EMIS requires both adequate information communication technologies (ICT) and user competency.

Researches have demonstrated that EMIS has a major impact on staff management and resource allocation choices in the educational sector (Benavot & Lockheed, 2020; Alshammari, 2021). Nonetheless, researchers have pointed out how system integration and data quality can improve EMIS's efficacy (Kitainge & Wekesa, 2019). Lack of ICT facilities and skills in Nigeria affects the utilization of EMIS in achieving efficient educational planning and administration (Ogunode, 2020). In contrast, the authorities in Osun State reported increased reliance on EMIS for effective policy implementation despite the challenges experienced in resource allocation and insufficient user training (Umar & Aliyu, 2022). Hence, the study was guided by the General Systems Theory and Transactive Memory System.

The General Systems Theory explains how information from various components in the education system is managed to produce useful information for planning and decision-making (Skyttner, 2006). The Transactive Memory System, on the other hand, was used to establish how collaboration occurs among EMIS officers, headteachers, and other stakeholders in promoting effective planning and administration (Ren & Argote, 2011; Lewis & Herndon, 2022).

Methodology

A descriptive survey research design was adopted for the study. The population comprised headteachers and teachers in public primary schools in Osun State, Nigeria. A 190 respondents 50 head teachers and 140 instructors were chosen from ten public primary schools spread throughout the three senatorial districts using a multistage sample procedure. Using simple random sampling, one Local Government Area (LGA) was chosen at the first stage from each of Osun State's three senatorial districts, for a total of three LGAs. At the second stage, schools were selected proportionately from the sampled LGAs through simple random sampling to obtain a total of ten public primary schools. At the third stage, all headteachers in the selected schools were purposively included because they are directly responsible for school planning and administration, while teachers were selected using simple random sampling. This procedure resulted in a sample of 190 responders overall, comprising 50 head teachers and 140 teachers.

Data was collected using the researcher's own questionnaire, the Effectiveness of Educational Management Information System in Planning and Administration of Primary Schools Questionnaire (EEMISPAPSQ). The instrument was validated by experts in Educational Management and Measurement and Evaluation, and the test-retest method yielded reliability scores of 0.75 and 0.89. Descriptive statistics, such as frequency counts and percentages, were used to analyze the data. The research questions were analysed using multiple regression analysis to test the hypothesis at the 0.05 level of significance.

Results

Research Question One: What advantages do EMIS have on effective planning and administration of primary schools in Osun State in terms of personnel management?

Table 1: Advantages of EMIS on effective planning and administration of primary schools in Osun State

Items	Agree/Strongly Agree (n)	Percentage (%)
Distribution of school materials is easier through EMIS	125	65.8
EMIS is consulted when transferring teachers between schools	115	60.5
Teachers receive timely promotion due to EMIS record-keeping	160	84.2

Source: Field Survey, 2024

Most respondents agreed that EMIS provided several benefits in managing teaching staff. Indeed, 84.2% of respondents agreed that EMIS records prompted timely promotions of teaching staff, and over 60% of respondents agreed that EMIS eased the transfer and distribution of materials among schools.

Research Question Two: How well are the data stored in EMIS utilized in the planning and administration of primary schools?

Table 2: Utilization of EMIS Data in Planning and Administration

Items	Agree/Strongly Agree (n)	Percentage (%)
EMIS officers collaborate with teachers and heads on data gathering	150	78.9
SUBEB staff consult EMIS data for decision-making	135	71.1
SUBEB planning department is carried along by EMIS unit	161	84.7

Source: Field Survey, 2024

Most respondents reported that EMIS data were effectively used for planning and administration. Specifically, 78.9% of respondents agreed that EMIS officers collaborated with

teachers and headteachers in gathering relevant data for decision-making, while 84.7% of respondents stated that the planning department utilized the information from EMIS in implementing policies.

Research Question Three: *What resources are available for EMIS officers in the planning and administration of primary schools in Osun State?*

Table 3: Resources available for EMIS officers in the planning and administration of primary schools in Osun State

Items	Agree/Strongly Agree (n)	Percentage (%)
Adequate computers and storage devices are available	148	77.9
EMIS departments exist in all LGEAs of SUBEB	170	89.5
Essential facilities and materials are adequately provided	157	82.6
EMIS units have experienced officers adequately equipped	150	78.9

Source: Field Survey, 2024

According to the findings in Table 3, EMIS was well-resourced in terms of essential facilities, materials, and skilled personnel. Indeed, over 80% of respondents agreed that EMIS had adequate storage devices, computers, and experienced personnel to support effective planning and administration. Moreover, respondents agreed that EMIS departments existed in all LGEAs and were adequately provided with materials and facilities to execute their functions.

Research Question Four: *How user-friendly is EMIS to primary school heads in Osun State?*

Table 4: User-Friendliness of EMIS for School Heads

Items	Agree/Strongly Agree (n)	Percentage (%)
Head teachers can update data at their school locations	20	40.0
Some action plans are executed through EMIS without school visits	23	46.0
Information dissemination from SUBEB is effective via EMIS	25	50.0
Head teachers find EMIS training easy and friendly	23	46.0

Source: Field Survey, 2024

Based on the responses provided in Table 4, EMIS was not user-friendly because most headteachers lacked the skills to operate it. Only 40.0% of respondents agreed that headteachers could update data at their respective schools. Similarly, 46% of respondents agreed that although planning activities were executed through EMIS, the process was friendly and easy

to utilize. Only half of the respondents thought that information dissemination through EMIS was effective, indicating that the system was not user-friendly. Overall, the results demonstrated that EMIS was not user-friendly, which hindered its usefulness for administrative and planning duties at the school level.

Hypothesis Testing

H₀: Educational Management Information System (Personnel Management, Data Utilization, Resource Adequacy, and User-friendliness) has no significant joint influence on effective planning and administration of primary schools in Osun State, Nigeria.

Table 5: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of Estimate
1	.836	.699	.693	0.361

Here the predictors Personnel Management, Data Utilization, Resource Adequacy, User-friendliness, while the dependent Variable is Effective Planning and Administration

The model summary indicated a multiple correlation coefficient ($R = .836$), implying that the four independent variables predicted 69.9% of the variance in effective planning and administration of primary schools. Thus, the model fit was satisfactory for the study.

Table 6: ANOVA

Source	Sum of Squares	df	Mean Square	F	Sig.
Regression	62.140	4	15.535	119.54	.000*
Residual	24.041	185	0.130		
Total	86.181	189			

$p < .05$

The independent variables significantly jointly influenced the dependent variable, according to the ANOVA test: $F(4,185) = 119.54$, $p < .001$. This indicates that effective planning and administration were statistically significantly impacted by the four EMIS aspects taken together.

Table 7: Multiple Regression Coefficients

Predictor	B	Std. Error	Beta (β)	t	Sig.
Constant	0.958	0.218	—	4.39	.000
Personnel Management	0.331	0.054	.365	6.13	.000*
Data Utilization	0.289	0.049	.318	5.90	.000*
Resource Adequacy	0.244	0.057	.247	4.28	.000*
User-friendliness	0.167	0.046	.174	3.63	.001*

Dependent Variable: Effective Planning and Administration

$p < .05$

The regression analysis results revealed that the four independent variables jointly significantly predicted effective planning and administration of primary schools ($R = .836$, $R^2 = .699$, $F(4,185) = 119.54$, $p < .001$). Specifically, the influence of resource adequacy ($\beta = .247$), personnel management ($\beta = .365$), data utilization ($\beta = .318$), and user-friendliness ($\beta = .174$) on effective planning and administration was statistically significant at $p < .05$. Thus, the null hypothesis was rejected, indicating that EMIS significantly influenced the effective planning and administration of public primary schools in Osun State.

Discussion of Findings

The findings demonstrate that Educational Management Information System (EMIS) has significantly enhanced the planning and administration of public primary schools in Osun State. The positive influence of EMIS on personnel management, data utilization, and resource adequacy suggests that the system has strengthened evidence-based decision-making and improved administrative efficiency. These findings are consistent with previous studies (Adeoye & Adeoye, 2021; Benavot & Lockheed, 2020; UNESCO, 2022), which reported that EMIS enhances transparency in teacher management, resource allocation, and educational planning.

In addition, the study found that EMIS data utilization for policy implementation and planning had increased, supporting the evidence provided by Umar & Aliyu (2022) and Alshammari (2021). However, the study revealed that despite the availability of ICT facilities and skilled personnel, most headteachers lacked the confidence and skills to operate EMIS, corroborating the findings of Akinsola & Omotayo (2020).

Conclusion

The study concluded that Educational Management Information System had significantly improved the planning and administration of public primary schools in Osun State, Nigeria, by enhancing personnel management and providing adequate information for effective decision-making. Despite the numerous benefits associated with the system, the study recommended

continued capacity-building of users on the effective utilization of EMIS for achieving sustainable educational planning and administration.

Recommendations

Based on the findings, this study recommended that

- the State Universal Basic Education Board should strengthen continuous training of headteachers on how to embrace EMIS for efficient planning and administration.
- the government should invest more in maintaining and upgrading existing ICT facilities for effective EMIS utilization in all Local Government Education Authorities.
- EMIS should be made user-friendly by providing necessary accessibility at the school level to enhance its effective adoption for planning and administration.

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