

Administrative Factors and the Implementation of Education Management Information System in TVET Institution in Trans-Nzoia County, Kenya

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Abstract: An information system that provides information for the management of educational development and for effective decision-making, monitoring, and evaluation of education activities, is called an Education Management Information System (EMIS). The main purpose of this study was to examine the extent to which administrative factors influence the implementation of the Education Management Information System in TVET institutions in Trans Nzoia County. The theory applied in the study is the Concerns-Based Adoption Model (CBAM). The research design that was adopted in the study was a mixed research design with a target population of 238 TVET instructors drawn from the 34 TVETs in Trans-Nzoia County. The study applied stratified sampling and the simple random technique through which a sample size of 149 instructors was drawn. Data collected through surveys, questionnaires, interview schedule and the observation of the system. Data was analyzed using a statistical package of social sciences (SPSS) Version 27.0. The multiple regression analysis models was developed to establish the relationship between dependent and independent variables while correlation was used to determine the strength of the relationship. The analysis of variance (ANOVA) was used to test significance of variance of one variable over the other. The results of the analysis revealed that administrative factor positively and significantly influence implementation of EMIS at $r=.941^{**}$, $P<.01$.

Keywords: Administrative factors, Implementation, Management Information System.

1. Introduction

The education management Information Systems is an information system that generates reports which assist the administrators to monitor and control organizational functions, resources or other responsibilities (Pushpakumara, 2014). According to Kamruddin *et al.*, (2017) educational goals and objectives in many countries have transformed their focus on access, expansion, maintenance and control to quality, development, efficiency, effectiveness, equity and performance. These changes need monitoring and evaluation very closely and a feedback mechanism should be active real-time. Hence the education management system provides services to multiple sources and from multiple levels in the education institutions. Collecting, organizing, integrating and

analyzing these data will give an insight to the education managers to make decision accurately.

Khresat (2015), pointed out in his findings that the education system requires an effective policy-making mechanism and monitoring system through data and information. According to Khresat most of the current Education Management Information Systems (EMIS) are typically limited to centralized databases. They collect basic information and school level data. Moreover, there is evidence that the EMIS could potentially provide a powerful management tool capable of contributing to the improvement of educational performances. It enables decision makers to identify problem areas, reduce operational costs and provide a systematic way of addressing educational challenges. If effectively implemented, the EMIS is capable of raising educational awareness, motivating employees to search for innovative solutions and increasing educational efficiency (Shehaheh *et al.*, 2016). Furthermore, the EMIS makes efforts to assess the performance of the Ministry of Education system. It monitors the distribution of resources, and plays an active role in providing information to decision makers (Abbas *et al.*, 2017). Information also acts as a monitoring and evaluation mechanism that enables planners and policy makers to assess whether education strategic plan (ESP) was achieving its stated goals. In addition, another major function of the EMIS, other than collecting, storing and processing information, is to facilitate detailed analysis and synthesis of data in order to draw upon the most relevant information to help in educational planning and policy decision-making (Damin *et al.* 2014). The main purpose of an EMIS is to integrate information related to the management of educational activities, and to make available for the decision makers, as well as the other parties, to use in helping them to make the correct decisions.

Molala (2014) pointed out in his study that establishing effective working relationships between three management layers presents a significant challenge for EMIS development in Nigeria and also common with other developing countries, where there are issues of capacity and commitment. Implementation of EMIS for education and public sector organizations had become a challenging task. According to

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Munene (2015), EMIS should be able to provide comprehensive, integrated, relevant, reliable, unambiguous and timely data to education leaders, decisions makers, planners and managers to perform their responsibilities efficiently to achieve the set goals.

The objective of an EMIS is not only to collect, store, and process, analyses, manage and disseminate information, but also to help education policy making by providing reliable, relevant, timely and accessible information. The EMIS is gradually being recognized as an indispensable tool and support for the formulation of policies, management and evaluation in the education system (Hamid 2014). Munene (2015) pointed out that information supports strategic planning for education while acting as a diagnostic tool in assessing the existing capacity and characteristics of the education system. He further indicates that these attributes assist with setting priorities for future development and identifying areas of greater need for resource allocation.

Nkonge (2015) asserted that the introduction of EMIS to knowledge imparting institutes improved destiny of education by linking one institute to other and that EMIS are an integral component in the running and management of institutions. Information communication technology is promoting new approaches to working and learning, and new ways of interacting. Kiberenge (2015) noted that EMIS played a significant role in improving management practices in educational systems. As a result, parents, students, teachers and the general public could access the institution's database to seek information. Today, most learning institutes are adopting EMIS for transformational ways to ensure effectiveness and efficiency in considering information technology in all the stages of product or service delivery. These institutions are trying to be at par with other organizations.

In Kenya, education management information system in technical institutes has been used to provide information that institutes need to manage themselves efficiently and effectively. In this institutes, Education Management information systems are typically computer systems used for managing five primary components: hardware, software, data (information for decision making), procedures (design, development and documentation), and people (individuals, groups, or organizations) (Martins, 2019). Education Management information systems are distinct from other information systems, in that they are used to analyze and facilitate strategic and operational activities. EMIS is commonly used to refer to the study of how individuals, groups, and organizations evaluate, design, implement, manage, and utilize systems to generate information to improve efficiency and effectiveness of decision making, including systems termed decision support systems, expert systems, and executive information systems. Organizations view the effective adoption of Education Management Information System (EMIS) as a way to combat competition by improving productivity, profitability, and the level of information which is one common asset shared by all departments within the institute regardless of their nature because it is a vital part of any entity irrespective of their functions as it enables conceptualization and creation of

new products and services (Walekhwa *et al.*, 2016).

2. Methodology

A. Research Design

According to (Kothari and Garg, 2014) sample size refers to the number of items to be selected from the universe to constitute a sample. Both simple random sampling and stratified sampling will be used. The type of institute represent a sub group/ sub population/ stratum which represent a heterogeneous population. A sample size of 149 was drawn from a population of 238 instructors using the simplified Yamane (1967) formula for proportions. A 95% confidence level and $P = 0.05$ will be assumed.

$$n = \frac{N}{1 + N(e)^2}$$

Where:

n: is the sample size

N: is the population size (sampling frame)

e: is the desired precision level of 0.05 with desired confidence level of 95%.

$$\frac{238}{1 + 238(0.05)^2} = 149$$

The sample size was distributed proportionate to the number of TVETS in each sub county.

Sample size = (No. of TVETS in the sub county/target population) x sample size

Research assistants randomly select the required respondents.

B. Sample Size and Sampling Technique

Table 1
Sampling frame

Population	Target Population	Sample Size
Trans Nzoia East	161	44
Trans Nzoia West	161	26
Kiminiini	959	39
Endebess	220	22
Kwanza	1340	18
	2841	149

3. Results and Discussion

A. Influence of Administrative Factors on the Implementation of Education Management Information System

The research attempted to find out the influence of administrative factors on the implementation of education management information systems in TVET institutes in Trans Nzoia County. In doing this institutional stewardship, managerial commitment and institutions infrastructure related to EMIS systems were examined. The results of the study are illustrated below.

The results in table 2 show that the respondents agreed (mean 4.0) that; EMIS data could be used to improve accountability and transparency in the institution, decision making was an administrative function, preparation and implementation of the

Table 2
Institutional stewardship

N=144	Mean	Std. Deviation
EMIS data can be used to improve accountability and transparency in the institution	3.6667	1.25157
decision making is an administrative function	4.6667	.47305
Preparation and implementation of the institution improvement plans is an administrative function	4.6667	.47305
There are frequent administrative meetings related to EMIS in the institution	3.6667	1.25157
EMIS plays a crucial role in the acquisition of information regarding your institution's operations	4.5000	.70957
Valid N (listwise)		

Table 3
Managerial commitment

N=144	Mean	Std. Deviation
Policies made by institutions are data driven and help in managerial performance	3.8403	1.13226
Current data management process is organized	4.5764	.49586
Management is aware of the benefits that can be achieved by implementing EMIS	4.5833	.49473
Management support and encourages the use and implementation of EMIS	3.5764	1.18605
Target are set to show monthly, quarterly and annual performance	4.3125	.87281
Valid N (listwise)		

Table 4
Infrastructure related to the EMIS system

N=144	Mean	Std. Deviation
There is enough security for EMIS in the institutions	3.6250	1.27304
Departments are well supplied with email and internet services	3.7847	1.17171
There are enough spacious computer rooms in the institutions	4.5347	.64681
The EMIS is frequently maintained for sustainability	4.5625	.70680
The EMIS can accommodate various soft wares	4.3403	.85414
Valid N (listwise)		

Table 6
Correlation between administrative factors and implementation of EMIS

		Administrative Factors	Implementation
Administrative Factors	Pearson Correlation	1	.941**
	Sig. (2-tailed)		.000
	N	144	144
Implementation	Pearson Correlation	.941**	1
	Sig. (2-tailed)	.000	
	N	144	144

**Correlation is significant at the 0.01 level (2-tailed)

institution improvement plans was an administrative function, there were frequent administrative meetings related to EMIS in the institution and that EMIS played a crucial role in the acquisition of information regarding the institution's operations.

The results in table 3 show that the respondent agreed (mean 4.0) that; Policies made by institutions were data driven and help in managerial performance, Current data management process was organized, Management was aware of the benefits that could be achieved by implementing EMIS, Management supported and encouraged the use and implementation of EMIS and that Targets were set to show monthly, quarterly and annual performance.

The results in table 4 show that the respondent agreed (mean 4.0) that; there was enough security for EMIS in the institutions, departments were well supplied with email and internet services, there were enough spacious computer rooms in the institutions, the EMIS was frequently maintained for sustainability and that he EMIS could accommodate various software's.

The results of analysis from table 5 show that managerial commitment positively and significantly influences implementation of EMIS at $r=.923^{**}$, $P<.01$, it also shows that institutional stewardship positively influence the implementation of EMIS at $r=.956^{**}$ $p<.01$ and infrastructure

positively influence implementation of EMIS at $r=.838^{**}$, $P<.01$. The administrative variables were then merged to form administrative factor and correlated with implementation of EMIS as shown on table 6.

Table 5
Correlation between administrative variables and implementation of EMIS

		Implementation
Institutional stewardship	Pearson Correlation	.956**
	Sig. (2-tailed)	.000
	N	144
Managerial commitment	Pearson Correlation	.923**
	Sig. (2-tailed)	.000
	N	144
Infrastructure	Pearson Correlation	.838**
	Sig. (2-tailed)	.000
	N	144
Implementation	Pearson Correlation	1
	Sig. (2-tailed)	
	N	144

** Correlation is significant at the 0.01 level (2-tailed)

The results of the analysis revealed that administrative factor positively and significantly influence implementation of EMIS at $r=.941^{**}$, $P<.01$.

4. Conclusion

In view of the stated findings, a conclusion is made that; EMIS data could be used to improve accountability and transparency in the institutions administration and decision

making based on data from the EMIS which was reliable hence reduced any conflicts. Thus, institutions and managers should be committed to implement the EMIS.

5. Recommendations

In view of the study findings and the conclusion arrived at, the study recommended that the administrative factors should be clarified for the managers and staff of TVET institutions so that the implementation is embraced positively and the objective of the implementation be achieved in time rather than taking longer.

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