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Enhancing Decision-Making through Integration of Management Information System for Administrative Effectiveness in Nigerian Colleges of Education

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Abstract

This paper was on enhancing decision making through integration of management information system for administrative effectiveness in Nigerian Colleges of Education. One thousand six hundred and seventy respondents were randomly selected using stratified random sampling technique from 24 out of the existing Colleges of Education in Nigeria. The sampling was made up of 895 academic staff, 522 non academic staff and 253 students 'representatives from the Colleges. A self-designed questionnaire tagged "Management Information System, Decision-Making and Organizational Effectiveness Questionnaire (MISDMOEMQ)" was used to collect relevant data. The questionnaire was validated by experts. The reliability of the questionnaire was ensured through a pilot test using test re-test method to obtain a reliability co-efficient of 0.76. The data collected was analyzed using descriptive and inferential statistics. Multiple Regression and Pearson Moment Correlation Co-efficient were used to analyze the hypotheses formulated at 0.05 level of Significance. The findings revealed that a significant relationship existed among Management Information System, Decision-Making and Organizational Effectiveness in Nigeria Colleges of Education. There was a significant relationship between DSM and academic staff job performance in the Colleges while it was discovered that decision making in the Colleges did not significantly relate to non-academic staff job performance. Equally, a significant relationship was found between decision-making and Provosts' Managerial performance in the Colleges. Based on the findings it was recommended that: use of Electronic based Management Information System should be encouraged in the Colleges as Manuel MIS may only be efficient and effective in small organizations. Colleges of Education in Nigeria should endeavour to put in place proper use of Telephone, Internet system, Telex, Fax machine and E-mail services to enhance quick and appropriate decision-making in the Colleges.

Introduction

Management science discipline are bound together by more than a common method and shared philosophy and hence the need for more than rigorous analysis of complicated problems. This

can often be satisfied through an effective information system (encyclopedia Britannica P. 1152) undated.

Management of complex institutions like Colleges of Education in Nigeria cannot but involve the use of effective and efficient management information system in their decision making on Colleges plans, policies, purposes, programmes, procedures, problems and prospects.

In view of National Policy on Education of the Federal Republic of Nigeria (2004) Colleges of Education in Nigeria were categorized among the highest institutions whose goals were to be pursued through teaching, research dissemination of existing and new information, pursuit of services to the community and serve as a store house of knowledge. In this way, therefore, teacher Education in Nigeria is designed to achieve the following five cardinal objectives:

- i. To produce a highly motivated, conscious and efficient classroom teacher for all levels of the nations' educational system;
- ii. To encourage further the spirit of enhancement and creativity in the country;
- iii. To help teachers to fit into the social life of the community and the society at large and to enhance their commitment in National objective;
- iv. To produce teachers with intellectual for their assignment and to make them adaptable to any changing situation, not only the life of their country but in the wider world and;
- v. To enhance their commitment to the teaching profession.

All the aforementioned aims and designed methods of achieving them in the National Policy on Education of Federal Government of Nigeria can be best and only be made through an effective and efficient management information in the Colleges. Such decision may be short, medium or long term based. With this, the set aims, and objectives of the organization can best be achieved.

Literature review

Decision making is not only an accepted part of everyday human life but a central responsibility of the education administrator and fundamental process in an organization. Fashiku, (2008), sees it as the process of choosing from among alternative ways of achieving an objective or providing a solutions to problems. Decision making usually entails choice and cost, it is not an end in itself but a means to achieving organizational goals and objectives.

Peretomode, (1992) observed that to decide is to pass judgment or make up one's mind. This implies choosing from a set of alternatives and by so doing, bringing an end to vacillation of doubt and the like. In other words, man is continuous in choosing courses of action to guide and direct his behavior in taking a decision.

In line with Peretomode, (1992), Ogunsaju (2004), opined that decision making is the actual selection among several alternatives in taking an action. It goes along with the process of deliberating calculating or reflecting over and thereby leading to a particular action. As such, whatever happens as a result of previous deliberations or reflection is tagged, 'decision' which can be referred to as the "heart" of planning.

Decision making is the key responsibility of the Provost as the College Administrator because it is involved in most of the key elements in management process which include organization and

structure, power and authority, centralization and decentralization, control and influence as well as leadership. The major issues in decision analysis concerns; what type of decision, who is making the decision at what level and how it was made. (Cape Land, 2010). In the College, the Provost is often confronted with the need to take decisions on issues in the area of curriculum planning, personnel, organizational structure and school community relations. In any of those areas of school life activities, quite a number of decision types are opened to the leader. These areas according to Ejiogu (1990) include: no change decision, personal involvement decision, consultative decision, (structure) emotional decision and rational decision.

In the view of Capeland (2010) and Cole (1996) different types of decisions abound, these include: programmed, non-programmed, intermediary, appetite and creative decisions. All these can be taken under the condition of certainty, uncertainty and risk. Equally, Atlnon (1999) identified two decision making process models which are ecological model and bounded rationality model as thus:

In econologic model, leaders are assumed to be economically rational and want to maximize output in an orderly and sequential manner. This make each step in this model to be indispensable to the next step which results in an output. This type of decision making process in an organization provides a very orderly, logical method of processing data and useful insight on how people should make decisions. This type of model fails to describe how people actually take decisions.

The bounded rationality decision emerges as a result of the fails in the econologic model decision making process. Here, the decision maker is seen as an administrative Man rather than economic man. The administrator here takes decisions based on rationality as a result of the fact that man has limited information processing ability. College Managers are believed to make decisions that will adequately serve their purpose.

Participatory decision making was also encouraged by Davies [1991]. This approach is all about the College leaders allowing those working under them to take part in making decision that affect their job performance and behavior. It is on this general assumption that when staff participates in decision making, they become ego-involved with their jobs and are emotionally counted to make sure that decisions they make are effectively implemented in the organization.

In the aforementioned, management information system revolves round all the component of the College. This is because timely and effective information constitute not only a very vital resource but also, apparently the most strategic weapon in decision making for organization effectiveness in Colleges of education in Nigerian.

Methodology

This study was a co relational survey with attention focused on an already existing situation. Stratified random sampling technique was used to select 24 out of the existing Colleges of Education in Nigerian according to the geo-political zone in the country. This method was equally used to select 1670 respondents from the sampled College. These were made up of 895 academic staff, 522 non academic staff and 253 students. The students' representatives were selected among the student Union Government.

Questionnaire tagged "Management of Information System, Decision making and Organizational Effectiveness Measurement Questionnaire" (MISDMOEMQ) designed by the researchers was used to collect relevant data. This instrument was validated by test experts to ascertain its validity for use. The reliability of the instrument was ascertained through a pilot test using test re-test method and this yielded reliability co-efficient of 0.76.

This research hypothesis formulated to guide the study stated that:

"There was no significant relationship among management information system Decision-making and organizational effectiveness in Colleges of Education in Nigeria.

Data for the study were personally collected with the assistance of tutored research assistants. The data collected were analyzed using descriptive and inferential statistics. Multiple regression and Pearson Product Moment of Correlation Co-efficient were used to analyze the hypotheses formulated at .05 level of significance.

Results

Research Hypothesis 1:

There is no significant relationship among Management Information System Decision Making and Organizational Effectiveness in Nigerian Colleges of Education.

Table1: Result of organizational Effectiveness on Decision Making and management information system in Nigerian Colleges of Education

Analysis of Variance in Nigerian Colleges of Education						
Source	DF	Sum of Squares	Mean Squares	F-Value	T-Value	Sig.
Regression	2	80290.332	4014.166	577.73181	3.00	0.00
Residual	1667	11535.7451	69.48755			
Total	1669					
R ² 60867						

In Table 1, multiple regression of OGE on DSM and MIS which yielded the regression coefficient of 0.60938 being closer to 1 indicates higher relationship. The f-ratio of 577.73181 being greater than the tabulated F of 3.00 at 0.05 level of significance implies that there is a significant relationship among Management Information System (MIS), decision making (DSM) and Organizational Effectiveness (OGE) in Nigerian Colleges of Education. However, the coefficient of determination (R²) 0.60867 indicated that 61% of the variables in OGE is determined or accounted for by the independent variables (MIS&DSM).

Table 2: Parameters in regression equation of Organizational Effectiveness Management Information System and Decision Making in Nigerian Colleges of Education

Variables	Beta	Standard Error of P	t	Sign.t
X ¹	.38343	0.02891	13.229	0000
X ²	.43467	0.02877	15.107	0000
Constant	48.29086	3.53147	13.674	0000

The fitted regression model (equation) gives $Y = 48.29086 + .38243 \times X_1 + .43467 \times X_2$ (1)

Equation (1) shows that for every point increase in the prediction variables X^1 X^2 , there will be an increase of .38243 (38.290), .43467 change in the X_2 which implies that DSM will have 38.2% influence on OGE (Y). Also, a unit change in X_2 which is the MIS will have an influence of 43.5% on OGE (Y).

The test of significance of each of the independent variables (X_1 X_2) at 0.05 alpha level shows that t-value is 13.229 while tabulated t is 1.658 for X_1 t-value is 15.107 and tabulated t is 1.658 for X_2 . In the variables, t values are greater than tabulated t indicated that each of the system variables (X_1 X_2) has significant influence on OGE. This implies that the hypothesis formulated is rejected. Therefore, a significant relationship exists among management information system decision making and organizational effectiveness in Nigerian Colleges of Education. In fact, MIS was found to have greater influence on OGE than decision making in the Colleges.

Research Hypothesis 2

There is no significant relationship between decision making process and academic staff members' job performance in the Colleges

Table 3: Relationship between decision-making and academic staff job performance in the Colleges

Variables	Cases	df	Mean	SD	Cal. R	Table r	remark
DSM	895	893	83.06	8.13	.6266	.1846	Not accepted
ACP	895	893	24.27	4.23			

The result of correlation analysis in table 3 shows that calculated r-value .6266 is greater than the critical table value .1946 at 0.05 level of significance and for 893 degree of freedom. The null hypothesis is therefore rejected. There is a significant relationship between decision making and academic staff job performance in colleges of Education in Nigeria. However, it should be noted that major decisions in the Colleges are taken at the academic board meeting whose membership is dominated by more than 90% of the academic staff of the College.

Research Hypothesis 3

There is no significant relationship between decision making and non-academic staff job performance.

Table 4: Relationship between decision-making and non-academic staff job performance in the Colleges

Variables	Cases	df	Mean	Sd	Cal.r	Table r	Remark
DSM	522	520	79.13	10.01	0.0560	.1946	Accepted
ACP	522	520	82.71	3.88			

Result of correlation analysis in table 4 indicated that calculated r-value 0.0560 and table r-value .1946 at 0.05 level of significance and for 520 degree of freedom. Since the calculated r-value 0.0560 is less than the critical table value .1946, hypothesis 3 is therefore accepted. That is, there is no significant relationship between decision making and non-academic staff job performance in the Colleges. It should be noted, that this may be as a result of the academic board whose membership were mainly academic staff and few members of non-academic staff in the Colleges. Hence, the observed acceptance of the hypothesis.

Research Hypothesis 4

There is no significant relationship between decision making and Provost's Managerial Performance in the Colleges.

Table 5: Relationship between decision making and Provost's Managerial Performance in the Colleges

Variables	Cases	df	Mean	Sd	Cal. R	Table r.	Remark
DSM	1670	16.68	80.98	9.31			
ACP	1670	16.80	33.53	5.13	.2367	.1946	Not Rejected

The result in table 5 reveals that calculated r-value .2367 is greater than the critical table value .1946 at 0.05 level of significance and 1668 degrees of freedom. The null hypothesis is therefore rejected. A significant relationship was observed between decision making and Provost's Managerial performance in Colleges of Education in Nigeria. Decision making in the views of Ejiogwu (1990) and Ogunsaju (2004) is the heart of planning and this has to do with a process of deliberating, calculating, communicating and reflecting over issues either consciously or unconsciously and thereby leading to a particular action. It can therefore be seen that Provost of each College, how-be-it must certainly take decision that may be either be programmed or non-programmed in the course of managing the College.

The finding of this investigation is in consonance with Alabi (1998) and Saad (2000) whose studies revealed that MIS was significantly related to decision-making in the Universities and Colleges of Education. Management Information System was also significantly related to academic staff job performance in Kwara State Colleges of Education. Equally, Adeniyi (2001) revealed that MIS was found to be a useful tool in enhancing decision making in Kwara State Education Board.

Conclusion and Recommendation

Based on the outcome of data retrieved and analysed in this study, Management Information System was found to have enhanced decision making in Colleges of Education in Nigeria. It was found to have influenced decision on academic staff job performance, and Provost's Managerial effectiveness in the colleges. However, it has no significant relationship with non-academic staff job performance in the Colleges.

In view of the foregoing, it is therefore recommended that use of electronic based management information should be encouraged in Nigerian Colleges of Education as manual MIS may only be efficient and effective in small organizations. The Colleges should endeavour to put in place proper use of telephone, internet system, telex, fax-machine and E-mail services, to enhance quick decision making for organizational effectiveness.

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