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Management Information Systems In Private Universities And Its Impact On Productivity

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ABSTRACT

Because of its efficiency and efficacy, the use of information technology in school management has grown rapidly. The primary goal of management information systems (MIS) in their early phases was to improve the efficiency of school and office activities. Overall, a review of the literature revealed that MIS has a positive impact on school administration and management, including improved information accessibility, more efficient administration, higher utilization of school resources, reduced workload, better time management, and improved report quality. Despite all of the advancements in educational management, most educational institutions face various obstacles, particularly in the field of information and communications technology. Among other things, a study into Management Information Systems and their impact on productivity in higher education institutions was conducted to examine the relevance of MIS in improving educational management, assess ways MIS could improve capacities in data processing, storage, analysis, and the timely supply of educational information to management and administrators to enhance quick and efficient decision making. The major sample strategies used were stratified and purposive sampling. To collect pertinent data, a questionnaire and an observational program were utilized. The data was analyzed using the Statistical Package for Social Sciences (SPSS version 25). According to the study, the key barriers militating against the introduction of MIS in understudy institutions were cost, a lack of competent Information Technology people to administer the system, a shortage of computer systems and peripherals, and an inferiority mentality (technology phobia). Recommendations, as well as proposals for additional research, were thus made to address the issues discovered.

1. INTRODUCTION

Computers are considered as having the ability to significantly contribute to school teaching, learning, and administration. A significant amount of money invested in introducing information and communications technology (ICT) into schools, including hardware, software, networking, and staff development, will be considered worthwhile if there is evidence that it has had a corresponding impact on school performance and effectiveness (Condie & Munro, 2007). Today, as numerous technical breakthroughs have occurred, the greatest risk that a company could face is being indifferent to change. Many key variables, such as ongoing advancements in information technologies, information exchange, rising societal demands, current management attitudes and applications, drive enterprises all over the world to build new applications in order to survive (Demir, 2006).

Because of its efficiency and efficacy, the use of information technology in school management has grown fast. School administrators who used to spend a significant amount of time handling difficult allocation problems (e.g., personnel allocation, resource allocation, timetabling) and monitoring school operations now have more options as a result of improved technology. Information technologies enable the decentralization of job duties and their coordination in a real-time interactive network of communication (Castells, 2001). They make more available flexibility and networking possible, emphasizing dependency, interaction, and ongoing adaptability to an ever-changing environment (Castells, 1996).

Schools employ management information systems (MIS) to support a variety of administrative functions such as attendance monitoring, assessment records, reporting, financial management, and resource and staff allocation. MIS provides managers with the information they need to run their businesses efficiently and successfully. These systems differ from other types of information systems in that they are intended to be used to analyze and facilitate organizational strategic and operational tasks (O'Brien, 1999).

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Waston et al. (1987) defines management information system (MIS) as a means of giving past, present, and prospective information on internal operations and external intelligence. It supports an organization's planning, control, and operation functions by providing consistent information in a timely manner to aid decision makers. MIS is defined by Telem (2014) as "a management information system designed to match the structure, management tasks, instructional processes, and special needs of the school." MIS is also defined as "a discipline focused on the integration of computer systems with the aims and objectives of an organization." According to the definitions above, MIS is a system that uses the information necessary by the organization's management at all levels to make operational, tactical, and strategic decisions. Its primary goal is to create and implement methods, processes, and routines that provide sufficiently thorough reports in an accurate, consistent, and timely manner.

MIS is important in decision making because it can monitor system disturbances, establish a course of action, and take action to bring the system back under control. It is also relevant in non-programmed decisions since it supports the decision-making process by providing information for the search, analysis, evaluation, choice, and execution (Obie, 2003). These systems can give their users with processed information, analytical models, real-time updates, and hypothetical situations to help them make decisions. Management information systems have also influenced school administration in terms of leadership, decision-making, workload, human resource management, communication, responsibility, and planning (Gurr, 2007).

Strategically, management information systems assist the manager in identifying the goals of the school, developing long-term planning, allocating resources, developing future teaching techniques, determining teacher performance, and determining the school's success (Telem & Buvitski, 1995). Management information systems can thus be utilized as a tool to establish and implement managerial educational leadership. Despite the fact that MIS operationally facilitates institutional management, empirical evidence on the actual value MIS delivers to academic organizations is sparse. While study on this topic has been conducted extensively in other countries, very little has been investigated in the context of private higher educational institutions. The purpose of this study was to investigate the influence of MIS on productivity in higher education institutions, with a focus on private university in Banten. The research questions were primarily addressed in the study: (a) What role does MIS play in higher education institutions?, and (b) How may MIS be utilized to boost productivity at higher education institutions?.

2. METHODS

This study used a quantitative approach underpinned by the positivist paradigm, with a cross-sectional survey design that provided the researchers with numerous benefits such as examining the relationships between variables and establishing cause and effect in highly controlled circumstances. This strategy also frequently lowers and restructures a complex problem to a small number of variables.

Stratified sampling and purposive sampling were the two (2) main sample techniques used. The sample size was divided into two groups using stratified sampling: administrative staff and management. These classifications would allow data from each stratum to be collected and examined. Purposive sampling was then used to acquire data from respondents from the institutions as a result of their consistent interactions and data consumption to boost the growth of the educational organizations. The researchers used the two sampling approaches because they allowed them to acquire data relevant to the study and minimise percentage errors during data processing.

A sample of 120 respondents was selected on the basis of their constant access to data within the institutions. Six Heads of Department, Student Records, and Examinations, together with their respective sectional heads and administrative assistants, were monitored via observational schedule. Additionally, five staff members from the Central Accounts Units, four from the Audit Units, and five from the Student Accounts Units. The heads of the General Administration, Planning, and Development Departments, as well as their sectional heads, secretaries, and clerks, were chosen. The questionnaires were completed by a total of 25 people from the three departments, including Deans, School Administrative Officers, Accountants, and Department Heads. Four management staff members were chosen, each with their own sectional head and clerk. Examinations officers and their assistance were also observed utilizing an observational schedule since they work on examination activities. An observational schedule was deemed critical because people do not always do what they claim. The data from the observational schedule was also quantified and added to the questionnaire data to strengthen and supplement the study's data analysis.

Data sources

Primary data was gathered from the study's population. The study's population included management and administrative staff from St. Joseph's, Berekum, and St. Ambrose Colleges of Education. Based on the

statistics from the aforementioned institutions, the population's numerical strength is 175. In accordance with this, using the chart for estimating sample size of a particular population as a guide, the acceptable sample size was 120, which fairly reflected the finite population. The population selection became required since the aforementioned colleges share features with other private universities in terms of the use of Management Information Systems in educational management and planning activities. It then captured persons involved in the day-to-day operations of the institutions. The management team consists of the principals, vice-principals, registrars/secretaries, and finance officials. Administrative personnel are those whose activities ensure that data is constantly flowing from management to staff or vice versa.

Data analysis and results

Respondents' Educational Background

In terms of respondents' educational qualifications, it was discovered that just 5 people have less than a diploma. This means that the vast majority of respondents had academic credentials above the diploma level, indicating their willingness and preparation to acknowledge, accept, and adopt any newly offered system based on the system's perceived simplicity of use and usability friendliness. This enormous number of responders with the necessary qualifications constitutes the well-versed individuals who serve as the study's pivot.

Table 1. Educational Qualification of the Respondents

Level	Frequency	Percent	Cumulative Percent
Diploma	5	4.2	4.2
Undergraduate	65	54.2	58.4
Postgraduate	38	31.6	90.0
Others	12	10	100.0
Total	120	100	

Departments and Units Involved in the Research

According to the proportion of data from various departments and units, it is clear that individuals from admissions, examinations, students' records, students' accounts, central accounts, and others were very interested in the research, with a total percentage of 92.3%.The others are mostly employees from the General Administration Department and departments within the institutions' numerous components who routinely process data. This means that the vast majority of administrative personnel who routinely input data are given full representation in the research's conduct.

Table 2. Departments covered and units by the study

Department	Frequency	Percent	Cumulative Percent
Admissions	6	5.0	5.0
Examinations	18	15.0	20.0
Students' Records	5	4.2	24.2
Students' Accounts	4	3.3	27.5
Central Accounts	12	10.0	37.5
Others	75	62.5	100.0
Total	120	100.0	

Years of Service in the Colleges of Education

According to a survey on the number of years spent by respondents within colleges, 97.5% of respondents had worked within the institutions for a duration of more than 6 years. This means they are familiar with the procedures and processes within the institutions and would be able to provide information on their current work processes and the difference they anticipate MIS will make.

Tabe 3. Years of Service in the Colleges of Education

Office	Years Served	Frequency	Percent	Cumulative Percent
Management	6	3	2.5	2.5
Administrative	15	30	25.0	27.5
Others	20	87	72.5	100.0
Total		120	100.0	

Traditional Data Processing

The results of the respondents show unequivocally that manual data processing within the institution takes a longer period of time, as evidenced by a cumulative percentage of 86.7%. This suggests that without computers, 86.7% of all work procedures would take much longer to execute, affecting job performance and production.

Table 4. Traditional data processing

Duration	Frequency	Percent	Cumulative Percent
Short	6	5.0	5.0
Very short	10	8.3	13.3
Long	35	29.2	42.5
Very Long	69	57.5	100
Total	120	100	

3. RESULTS AND DISCUSSIONS

Factors working against the successful deployment of MIS Educational Management

Schools employ management information systems (MIS) to support a variety of administrative functions such as attendance monitoring, assessment records, reporting, financial management, and resource and staff allocation. MIS also provides managers with the information they need to run their businesses efficiently and successfully. These systems differ from other types of information systems in that they are intended to be used to analyze and facilitate organizational strategic and operational tasks (O'Brien, 1999). Regardless, the application of MIS in educational management and, for that matter, Colleges of Education has been met with numerous hurdles. This is reflected in the responses of the respondents as follows: the cost involved in the acquisition, deployment, and management of the system has always been a major worry. According to the data obtained, 37.5% of respondents stated that the issue of cost has hampered the deployment of MIS usage in institutions. An additional 16.7% of respondents stated that the problem arises from management's ignorance, which has purposefully refused to acknowledge the enormous contribution of MIS in other educational settings. Some respondents (20.0%) stated in one breath that the issue affecting system implementation is a lack of skilled employees to manage the system. Other respondents' thoughts on this issue (25.8%) were attributed to insufficient computers and peripherals, staff members' concern about change, and computer illiterate workers.

Table 5. Factors militating against smooth implementation MIS in Educational Management

Item	Frequency	Percent	Cumulative Frequency
Cost	45	37.5	37.5
Management Ignorance	20	16.7	54.2
Incompetent Staff	24	20.0	74.2
Inadequate Computing Resources	31	25.8	100
Total	120	100	

The role of MIS in shaping educational management

Management information systems are believed to play critical roles in educational management, particularly in maintaining student personal data, assigning index numbers, and course allocation, among other things. According to the findings, Management Information System (MIS) contributes significantly to efficient and effective educational management, as 95.8% of respondents agreed that the adoption of MIS would have a significant impact on successful decision-making inside Colleges of Education.

This is consistent with Gurr's (2007) contention that MIS has revolutionized school management in areas such as leadership, decision making, workload, human resource management, communication, responsibility, and planning. Similarly, Christopher (2003) emphasized that accurate and up-to-date information provided by MIS allows school administrators to make effective and timely judgments. Because decisions could be made precisely and quickly, it would assure realistic numerical and financial growth inside the institutions. It should be underlined with grave worry that the adoption of MIS adds value to the flow of data within and across departments, making it easier for all personnel to conveniently access data for effective decision making.

In another statement, Obie (2003) agreed that MIS is important in decision making since it can monitor disturbances in a system, establish a plan of action, and take measures to bring the system back under control. It is also relevant in non-programmed decisions since it supports the decision-making process by providing information for the search, analysis, evaluation, choice, and execution.

Impact of MIS on improving data processing, storage, handling, analysis, and timely information distribution to management and staff

The purpose of using MIS in educational management is to help with data storage and processing. Traditional data processing and handling methods, which have been around for centuries, have slowed the rate at which information is gathered and retrieved in institutions. Data delivery via traditional paper for correspondence and reports significantly slows data transfer. As a result, there is little doubt that over eighty (85%) percent of respondents agreed that including MIS would ensure appropriate data storage. Furthermore, the overwhelming majority of respondents (95.8%) agreed that MIS would speed up the execution of departmental decisions. According to Telem & Buvitski (1995), strategic management information systems assist the manager in determining the goals of the school, making long-term plans, allocating resources, developing future educational methods, determining teacher performance, and determining the school's success. Similarly, when asked about departmental coordination, over 95% of respondents agreed that implementing MIS would increase departmental coordination and assure improved performance efficiency. According to this research, Gurr (2007) endorsed the ability of these systems to provide their users with processed information, analytical models, real-time updates, and hypothetical situations to aid their decision-making process. Visscher (1994) believes that MIS can offer administrators and instructors with the information they need for informed planning, policy-making, and evaluation.

Importance of MIS in educational planning, coordination, and implementation

It is critical to use the proper management practices to ensure the effective coordination and implementation of educational activities. According to the majority of respondents, the deployment of MIS in colleges of education has been long anticipated in order to aid educational planning and coordination. Nonetheless, the costs associated with system purchase, deployment, and management have long been unfathomable. According to the data obtained, 37.5% of respondents stated that the issue of cost has hampered the deployment of MIS usage in institutions. An additional 16.7% of respondents stated that the problem arises from management's ignorance, which has purposefully refused to acknowledge the enormous contribution of MIS in other educational settings. Some respondents (20.0%) stated in one breath that the issue affecting system implementation is a lack of skilled employees to manage the system. Other respondents' thoughts on this issue (25.8%) were attributed to insufficient computers and peripherals, staff members' concern about change, and computer illiterate workers (Afshari et al., 2009).

In accordance with this discovery, Kirkman (2000) identified some of the impediments as a lack of training, a lack of senior management support, a lack of technical help, a lack of ICT resources, a lack of a genuinely supportive culture, and a lack of staff individual confidence and drive. In a related development, Carnoy (2004) concluded that one of the most significant barriers identified in research for ICT use in educational management is a lack of data analysis skills among administrators, a lack of training in using ICT-based management tools, and a lack of user-friendly software for analyzing test results at the school level.

MIS capabilities in dealing with data redundancy and addressing issues with information dissemination

It is critical that information distribution inside institutions is properly addressed in order to ensure quick, effective, and efficient decision making. In terms of the findings, it was evident that data redundancy is one of the most significant issues that staff members face on a daily basis. 86.7% of respondents agreed that they confront data duplication difficulties at work on a daily basis, which surely doubles financial commitments for stationery buying. Furthermore, 95.0% agreed that there are several information dissemination gaps when data transmission is done manually, and that inefficiencies in data storage and editing hinder overall productivity.

Because a significant quantity of data and information are missing, certain files cannot be identified or found in time for efficient and appropriate decision making procedures. Next, 95.8% of respondents agreed that with the proper system in place, vital decisions could be made quickly and specific plans made to ensure the institutions' rigorous progression and growth. Cunningham et al. (2003) noted that the major impact of MIS on school administration and management has been highlighted as a reduction in effort, good impact on time management, and improvement in the quality of reports. Granville et al. (2005) discovered that personnel at his chosen schools believed that the use of technology had made administrative work easier in terms of accounting, attendance statistics, and the exchange of confidential information.

4. CONCLUSION

The study of Management Information Systems and their impact on productivity in Higher Educational Institutions is not usually considered in most tertiary spaces (Colleges of Education), primarily because it is perceived that with the right Information and Communication Technologies in place, all potential challenges associated with information flow would be addressed. Nonetheless, this study discovered that MIS is more than just the configuration of computer systems, their relevant computer software, and accessories; it is also the motivation of management to acquire the appropriate hardware and software, the willingness of administrators and other supporting staff to use the system, and the availability of knowledgeable ICT personnel to support the system's operational use. Information technology in educational management is a relatively new topic that requires in-depth research not just on the use of systems in schools, but also on their influence on school procedures and possibly outcomes.

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