

Role of School Management Information System on School Operations and Administrative Decision-Making,

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Abstract: *This study delved into school management information systems' role in school operations and administrative decision-making. The study assessed the impact of SMIS and software programs on school operations and school administrators' function as decision makers. The study concentrated on the availability of computers, internet connection, program systems, software programs, experiences of school leaders, and the effects and contributions of software to their leadership and professional development. The results and findings of the study showed that School Management Information Systems and Software Programs are essential in school operations and in making sound decisions. The study revealed the significance of SMIS/Software in dealing with tasks, documents, data, and information so the school can function independently and allow access to information for better outputs and procedures.*

Keywords: School Management Information System, School Operations, Administrative Decision-Making

INTRODUCTION

A school management system is the most effective way to handle everyday school operations. It enables the school to manage registration, admissions, the academic calendar, attendance, and other functions.

This system has numerous appealing features that assist reduce redundancy and repetitive work. It is also known as school management software since it automates school activities such as admissions, lowering the strain on management. As a result, instructors may focus on offering higher-quality education to their students.

A school management system is an efficient approach to managing your school's operations. All you need is school administration software to keep an accurate record and communicate with parents and staff. It contributes to giving parents and students the best admissions experience possible. The digital admittance mechanism ensures that entrance is error-free. Most significantly, this technique enables you to save money and time.

The primary application of EMIS data is - and has been at the national level. It is rarely utilized at the district level since this level is usually assigned minimal responsibility. Countries primarily use EMIS for national-level planning, budgeting, and resource allocation, but it is not yet used to manage regular and day-to-day education system activities.

Typically, countries do not provide EMIS data application at the institutional (school) level. However, using EMIS data may broaden the function of day-to-day management in EMIS, such as documenting transactions involving instructors, students, and equipment, which can contribute to enhanced transparency, improved administrative management quality, and the supply of quality data for M&E.

EMIS data should be customized and made available to all levels of decision-making within the school system to be helpful. According to UNESCO, there are three primary levels of data utilization, which correspond to the three levels of education administration in most education systems. The greater the amount of detail and information disaggregation to be used, the lower the decision-making level, i.e., closer to the school level.

With the growth of technology, the demand for government, businesses, industries, schools, and other public-private entities to use Management Information Systems (MIS) in dealing with vast amounts of data and information has expanded. Organizations may utilize MIS to quickly monitor and manage processes and activities for improved everyday operations.

Information and data are typically technical, but the use of MIS has the function of translating or converting data into layman's language that is meaningful and useful for a specific user. The MIS has systematic elements to input vast data and produce consolidated and organized data.

In any company, management is critical. It is vital in today's fast-paced world of technological breakthroughs and revolutions. Control governs human attempts to generate well-coordinated and planned products or services as a group. Every firm has objectives and goals. A successful management force must employ better, optimize, and organize resources, information, and data to provide an efficient and enhanced output to reach these specific results.

People, technology, organizations, and their interrelationships create the Management Information System (MIS). The software focuses on managing information technology to get efficient and effective results. This is also used to make sound judgments, particularly for those in upper management.

Private schools deal with statistics and other information related to their day-to-day operations, such as learning outcomes and grades, student data, activities, curriculum and pedagogies, and fees. Private schools have difficulty collecting tuition and other fees from their students. Not all schools can collect 100% of their expenditures for a school year. They have a problem tracking collections

from previous years to now since not all private schools use management information systems. That is, they are manually arranging and integrating financial data.

Using MIS in dealing with school finances can result in more accurate, efficient, and effective reporting about fees, making duties easier and improving decision making.

Information systems help governments to arrange education cost-effectively and efficiently. An Education Management Information System (EMIS) assists policymakers in managing an education system to deliver excellent outputs when institutionalized and led by a clear vision and strategic planning. Unfortunately, while many nations have committed resources to develop education management information systems, these systems are frequently poorly institutionalized, lack a guiding vision, and are not integrated into strategic planning procedures.

Tacoma Public Schools (2016) noted that SMIS should improve administrators' work functions by reducing the burden and providing accurate, up-to-date, and timely judgments to run institutions efficiently and effectively. Due to the complicated and unpredictable character of the school environment and increased demands from educational institutions, decision-making is at the core of educational administration. As a result, school administrators must continually obtain and evaluate information to make judgments in shorter, more frequent, and more complex schools. As educational software companies develop new analytical methodologies and the significant data era expands, the usefulness of SMIS will become increasingly crucial for educational decision-making. This approach was visible in the Tacoma, Washington, public school system. It used predictive analytics and data from its SMIS to develop intermediation techniques that increased its high school graduation rate from 27.6 percent to 82.6 percent in six years.

According to Al-Taie (2008), the relevance of the information for the leader resides in achieving the intended goals. A well-informed leader will base his choice on knowledge and a high expectation of success. Meanwhile, a leader who lacks information will make judgments based on the unknown or luck, correct or wrong.

An administrative choice made with correct and precise information has sound effects, as opposed to a decision made without or with unclear information, which produces harmful and destructive results since certain judgments are fateful. Companies are often obliged to make a disastrous decision to accomplish their market objectives, confirming the relevance of knowledge in decision-making.

As per Mwalongo (2011), the computer's contribution to modern administrations is evident given that it is the instrument used to process information and manage its preservation and retrieval procedures. In contemporary society, computers and data are like the heart and blood. Computers serve all places where information is available as part of knowledge and information systems. The value of this information relies on how it contributes to all operations and activities of the institution.

According to Mihaylov (2019), information is the primary factor that lowers suspicion and raises the degree of trust in a given circumstance or choice; as a consequence, the value of information is measured by the number of losses brought on by ignorance. It is also now possible to design specialized, complex mathematical models that make use of the computer's speed and accuracy in the execution of a variety of applications, in which a massive amount of descriptive and digital data is addressed, thanks to the use of computers and the accompanying great boom in information technology.

Al-Freijat (2013) emphasized that despite advancements in information industry technology, significant advancements in its transmission and circulation methods, the enormous capabilities of the computer in its many forms, the emergence of new applications, information systems, and decision-making support, information still serves as the primary support for decision-makers. These elements will significantly assist the best decision to handle emergencies, crises, and disasters. Due to this, the science of operations study has developed into a computer technology application that enables simulation models to be used to implement the best course of action to deal with a specific problem or crisis, as determined by the specialist using the criteria set forth by the decision-maker. According to Al-Taie (2008), decision-makers and information managers often fall into one of six broad categories: informal information (gossip), situational information, comfort information, warnings, critical indicators, and external information. Without a doubt, education gives people the tools to better their health, abilities, knowledge, and ability for helpful labor, advancing and enriching cultural, social, and economic growth in all civilizations. One of the most significant difficulties in education is still how to maximize student learning in systems with constrained resources. This necessitates ongoing observation and assessment of the educational system's learning outcomes by gathering and analyzing data and other relevant information.

Increased access, effectiveness, efficiency, equity, and quality of education are the objectives of information-based decision-making in the management of the educational system. This is accomplished through efficient monitoring and evaluation systems, planning and budgeting, and policy research and analysis. By providing the essential data and information and by establishing an atmosphere where the need for this information drives its usage, education management information systems (EMIS) enable these well-informed decisions to be made. EMIS development is centered on integrated data and information systems, which support educational management tasks across the whole educational system.

The production of educational data and information is a critical cornerstone for this information-based decision-making framework. Deficiencies or inadequacies in availability, utility, or quality have far-reaching implications. This article will examine the production and use of education information in the EMIS framework.

Impact of MIS on School Administration

- Reduction In Workload

MIS lessens staff workload is one of the critical advantages that has aided the school administration team. The school personnel may significantly minimize their manual labor, which can be tiresome and unpleasant, by segregating and systematizing data relating to attendance, accounts, grades, classroom timings, test schedules, fees, and library records.

- **Beneficial Impact on Time Management**

With simply a press of a mouse, the MIS in schools may assist in managing the school data. This helps the school administration staff save a significant amount of time. This time may also be utilized to develop methods and plans to give the kids a better and more enriching learning experience.

- **Improvement in the Quality of Reports**

MIS reports emphasize the raw data, patterns, and trends that allow for comparisons and precise forecasting. The quality of reports and the school's short- and long-term performance are improved by using valid data points in the MIS reports.

- **Improved Decision Making**

The administration team and school managers may make effective judgments with a school MIS system. The managers may make wise and well-informed judgments by giving them access to accurate and current information produced by school management information systems.

- **Facilitating Alternative Solutions for Sophisticated Problems**

The school management and administrative staff will be able to concentrate their energy and attention on more critical concerns thanks to a decrease in burden, time savings, and access to correct data. They will be able to design and produce a better educational experience for the students in addition to coming up with new approaches to challenges.

This study focused on the function of SMIS and how it affects administrative choice-making and school operations.

METHODOLOGY

Research Design

This study used descriptive and correlational research approaches to assess how the school management information system affected operational and management decisions. The descriptive technique was used to analyze how SMIS affected how schools operated and made decisions and to explain various aspects of the research variables.

To avoid any mediating factors—differences in culture, tradition, norms, and other factors—that would affect the study's conclusions if all other institutions in the province were included, the researcher limited the study's scope to a small number of schools.

Respondents of the Study

The populations of interest in this research were administrators of private schools in Bulacan. All administrators served as respondents in this study.

Table 1 summarized the sizes of the population.

Table 1

Respondents of the Study

SCHOOLS	Population (Admin)	Sample Size (Admin)	Actual Sample Size (Admin)
A	4	4	4
B	3	3	3
C	5	5	5
D	8	8	8
E	14	14	14
TOTAL	34	34	34

Research Instruments

This study utilized a standardized instrument to assess the role of school management information systems and their impact on school operations and administrative decision-making.

Data Gathering Procedure

The use of questionnaires was employed in the data gathering process. Each respondent was given a set of well-organized questions.

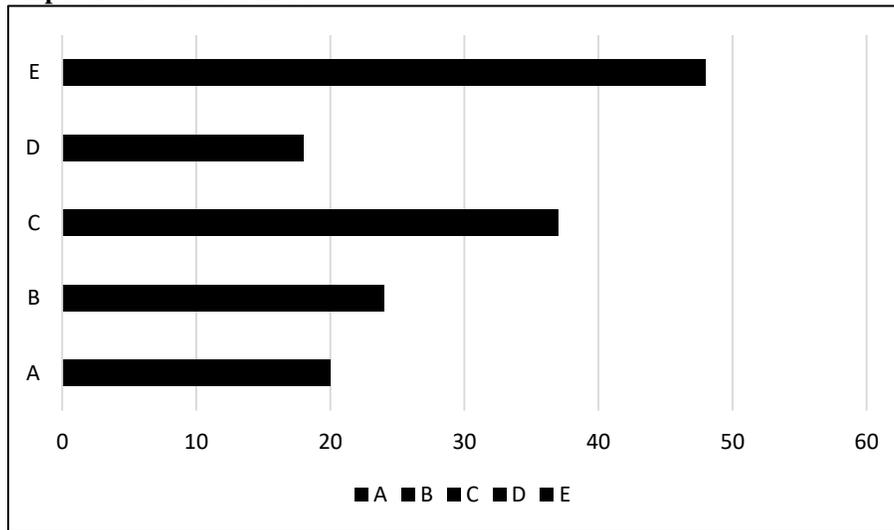
Statistical Treatment

The gathered data from the respondents was presented using tables to simplify the information and to understand better how the data were analyzed and evaluated.

RESULTS

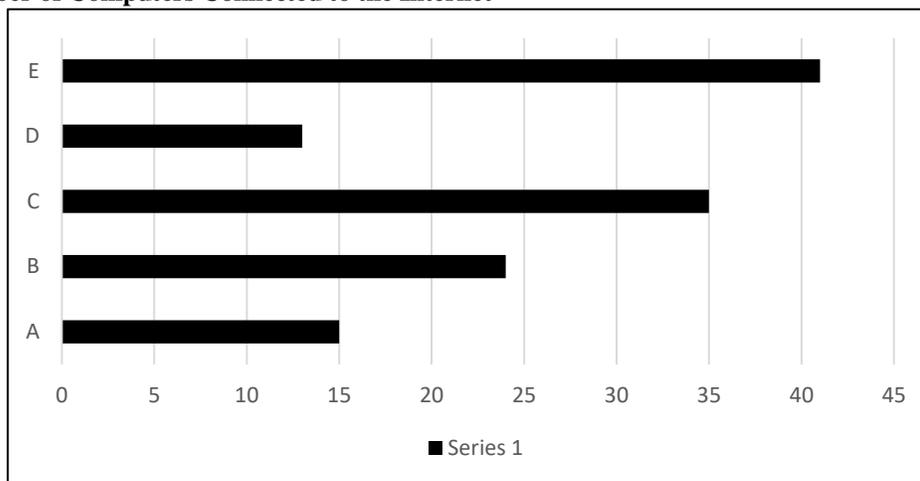
The classifications used to present the study's findings were "Information Technology Facilities of Schools," "Studies Done with the Managing Information Systems in Schools," "Contributions of Managing Information Systems to School Management," and "Problems Suffered." The study also covered school managers' experiences with information systems and how they affected them. The following graphs and tables provide information about the number of computers, internet-connected computers, their locations, the software used in schools, and the views of school administrators regarding the program.

Table 1: Number of Computers in School Offices



When the number of computers in the study's target schools was counted, it was discovered that School A has 20, School B has 24, School C has 37, School D has 18, and School E has 48 computers that are used by school personnel, staff, and administrators.

Table 2: Number of Computers Connected to the Internet



Given the overall number of computers accessible in all schools, as shown in Table 2, the number of computers linked to the internet is comparatively high. School A has 15 computers with internet access, followed by School B with 24, School C with 35, School D with 13, and School E with 41 computers.

Table 3: Computers Connected to the Internet in the school offices

Location	Yes	Percentage	No	Percentage
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Principal's Office	34	100%	0	0
Coordinator/Admin Office	34	100%	0	0
Faculty Room	26	76.47%	8	23.53%
Registrar Office	22	64.71%	12	35.29%
Guidance Office	29	85.29%	5	14.71%
Admission Office	27	79.41%	7	20.59%
Business/Finance Office	34	100%	0	0
Library	31	91.18%	3	8.82%

The locations of computers and internet connections in each school are displayed in Table 3. The principal's office, coordinator/admin, and business/finance office are equipped with computers and internet access. While 23.53 percent of faculty rooms lack computers and internet access, 76.47 percent do. Computers and the internet are available to 64.71 percent of students in the registrar's office, while only 35.29 % lack connectivity. 14.71 percent of students have no connections, compared to 85.29 percent. Conversely, 20.59% of the schools lack links, whereas 79.41% of the institutions have connections in their admission offices. Finally, 91.18 percent of respondents have connections in their libraries, compared to 8.82 percent who do not.

Table 4: Software programs

Software	YES	Percentage	NO	Percentage
School Management Information Systems	19	55.88%	15	44.11%
Financial System	26	76.47%	8	53.53%
MS Word	34	100%	0	0
MS PowerPoint	34	100%	0	0
MS Excel	34	100%	0	0
Google Mail / Email	34	100%	0	0
Library System	21	61.76%	13	38.24

Table 4 shows that Microsoft Office (Word, PowerPoint, and Excel) and Gmail/Email are the two software tools used by 34 (100%) school administrators and leaders most frequently. The finance system comes in second, with 26 (76.47%) school administrators using it at their institutions. Thirdly, 21 school administrators (61.76%) use library systems in their institutions. The SMIS is the least utilized program, with 19 (55.68%) administrators using it at their schools.

Table 5: Ideas of School Administrators about the Programs

Software	YES	Percentage	NO	Percentage
Do you find them useful?	34	100%	0	0
Do you use these programs will all their functions?	27	79.41%	7	20.59%
Do you pay attention to computers being ready to use all the time?	34	100%	0	0
Can you get help easily when you come across a problem with the programs?	18	52.94%	16	47.06%

All school administrators agreed that these programs helped manage their institutions. However, 79.41 percent entirely used the applications' features. Additionally, all administrators focus on keeping computers up and running at all times, yet only 52.94 percent of them can quickly access assistance for troubleshooting.

Table 6: Troubleshooting options

Source	YES	Percentage
We don't get help	0	0
Server	0	0
Computer Teachers	12	35.29%
IT expert	19	55.88%
Online Help	0	0

Outsourcing Services	4	11.76%
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As per Table 6, 55.88 percent of administrators sought the assistance of IT professionals to fix computer-related issues, compared to 35.29 percent who turned to their professors and 11.76 percent who sought outside assistance.

Table 7: Data Entries using software programs

Source	YES	Percentage
Students' Information	34	100%
Student Grades	34	100%
Attendance	17	50%
School Information	34	100%
Teachers' Information	34	100%
Curriculum	34	100%
Budget/Finances	34	100%
Salary	34	100%
Fixtures	18	52.94%
Library Data	19	55.88%

The following data were entered into school information systems with the most significant frequency, as indicated in Table 7: student information, student grades, school information, instructor information, curriculum, and pay. 52.94 percent-encode data beneath fixtures, 50 percent utilize software programs for attendance and 55.88 percent use programs for library data.

Table 8: Contributions of SMIS/Software Programs to School Management

Contributions	Yes	Percentage	No	Percentage
Preparations of documents became easier	34	100%	0	0
Keeping the records became easier	34	100%	0	0
Correspondence became easier	34	100%	0	0
Many more operations can be performed	34	100%	0	0
It is easier to make corrections	34	100%	0	0
Information can be transmitted easily	34	100%	0	0
It is easy to detect mistakes	34	100%	0	0

Table 8 lists school administrators' software program usage experiences and their contributions to how school administration was influenced. All school administrators unanimously agreed that software programs helped the school's management because document preparation, record keeping, correspondence, and more operations could be performed. It also made finding errors and corrections simpler, and information could be transmitted smoothly.

Table 9: Software-Program Effects on the Management Effectiveness of School Administrators

Effects to Managerial Efficiency of the School Administrators	Frequency	Percentage
It makes it easy for me to reach the information I need to solve problems	34	100%
The data in the software are effective in making decisions	34	100%
I can make use of time more efficiently	34	100%
My workload has reduced.	34	100%
My responsibilities have reduced.	34	100%
I became more productive.	34	100%

Given the usage of SMIS or software applications, all school administrators are given preference in their duties as school managers. They were able to solve issues, come to choices, manage their time, take on fewer tasks and responsibilities, and operate more efficiently.

Table 10: Contribution to School Administrators' Professional Development

Contributions to Professional Development	Frequency	Percentage
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It improved my desire to develop myself.	34	100%
It changed my perspective of the technology.	34	100%
It improved the quality of my work.	25	73.53%
It made more innovative in finding solutions.	31	91.18%
It improved my skills in solving problems.	29	85.29%

Table 10 indicates that all school administrators increased their desire to grow personally and altered their views on technology. On the other side, 91.18 percent said that it increased their capacity for creative problem-solving, 85.29 percent claimed that it enhanced their problem-solving abilities, and 73.53 percent claimed that it increased the quality of their work.

DISCUSSIONS

Based on the research's findings, which examined the functions of SMIS/software programs and their effects on educational practices and administrative decision-making, it can be concluded that school administrators effectively manage their institutions through the use of systems and software. It has been noted that comparatively adequate computers support the number of offices and administrators in schools. Although many computers are linked to the internet, more work must be done before they can fully use the programs and apps that will make their job more straightforward and effective. These two key issues must be resolved for school operations and administrators to utilize the systems and software to systematize the practices. According to Mwalongo (2011), the computer's contribution to modern administrations is evident given that it is the instrument used to process information and manage its preservation and retrieval procedures. In contemporary society, computers and information are like the heart and blood. The computer similarly serves information and information systems to how the heart circulates blood throughout the body. The quality of this information determines how much it contributes to all operations and activities of the institution.

Enough technological alternatives must be made accessible to educators, especially school administrators, to push them to accept and incorporate the innovations. The problems show how information system applications must be implemented within the constraints of a successful program. Access to this technology varies significantly amongst the universities as well. This discrepancy leads us to believe that the manager, teachers, and students may all have different access levels to these tools. Information transmission that is heavily dependent on online access is still challenging since it has been shown that certain firms do not have a reliable internet connection.

It was discovered that Microsoft Office applications like Word, Excel, and PowerPoint are used extensively in most schools. They also use email or Google Mail. Since not all schools have school management information systems, it is crucial to develop and fund this management tool so that all administrators and instructors can utilize the documents, data, and information methodically. Researchers Gurr (2000), Peterson (2000), Blake (2000), Borruso (2000), and May (2003) found that managers utilized word processor software more frequently than graphic and database software in their studies on school administrators.

Most school administrators find these applications useful in their day-to-day operations. However, not all administrators can utilize the software's complete feature set. Moreover, many of them could not get help with software or system problems. This indicates that schools need to provide more seminars or training to help students fully understand the programs and develop the skills necessary to run a system. The schools must also invest in SMIS to effectively utilize the papers, data, or information essential to operating a school.

Training managers remains a significant challenge even in other nations where management information systems are used in schools. For instance, Pelgrum (2001) has shown that inadequate education is one of the most significant barriers to using management information systems in schools in 26 different nations.

As Anderson and Dexter (2005) also underlined, school administrators should understand how to use technology while carrying out their duties to improve technology usage in schools. Therefore, managers need to have the same training in technology usage as teachers. Supporting more concepts, you do not understand is challenging. Every technical development needs leadership to succeed. No matter how much training they acquire in technology, instructors cannot implement it without the management of education's guidance. When using systems and software, most administrators enlist IT professionals' help. However, some people ask for assistance from service providers, while others rely on the expertise of their computer professors. Schools must make sure there are quick fixes accessible in case there are issues with the applications in question.

According to Pelgrum (2001), who performed research involving educational institutions from 26 different countries, one of the most prominent challenges managers have when implementing management information systems is that they never have enough aid readily available to them when they need it. The schools of Edirne exhibit this vividly. Schools seek specialists to help management with software and information technology problems. One of these experts may be one of the teachers specializing in computer technology or another who has received substantial training in this field until it is ensured that each school has an information systems specialist.

Much information is used in schools. These include information about the students, instructors, curriculum, finances, and other topics. It makes sense for schools to use a system to combine all of this data, especially in terms of data security, so that school operations function smoothly and effectively.

Using SMIS or digital tools indicated clear contributions to the institution's administration. This study makes preparing documents, records, and data more straightforward. It was also discovered that it enabled schools to carry out more tasks and effectively transfer information.

The school administrators have observed the effects of these systems/software programs on their managerial roles. They were able to make information more meaningful by solving problems, making decisions, managing time, reducing workload, and becoming more productive in terms of outputs. According to Tacoma Public Schools (2016), SMIS should improve the administrator's job duties by reducing the burden and enabling quick, accurate, and up-to-date judgments for managing institutions successfully. Making decisions is at the heart of educational administration because of the complexity and unpredictability of the school environment and the increased demands from educational institutions. As a result, school administrators must continually collect and evaluate data and make choices more often and in shorter time frames for increasingly complex schools. SMIS will be more significant for educational decision-making as the big data age booms and education software businesses develop new analytical methodologies.

In addition to these outcomes, the study focused on how SMIS/Software programs may help school administrators advance their careers. According to school administrators, their drive to advance professionally, their understanding of technology, the caliber of their work, and their ability to handle problems have all increased.

Al-Taie (2008) confirmed in his study that the significance of knowledge for the leader is in attaining the targeted objectives. An informed leader will make decisions based on the information and a strong expectation of the result. Without knowledge, a leader would wisely or incorrectly base his decisions on what is unknown or what he has learned via luck.

Effective school administrators focus there and the teaching staff's efforts on increasing the bar for student learning outcomes by utilizing their management skills and understanding of education. One component of this is up to date with the most recent trends and advancements in educational technology. Excellent interpersonal skills are also required as leaders communicate with students, staff, parents, and other groups to get continual feedback and spot opportunities for innovation. Administrators in schools must be well-versed in operational best practices and possess the capacity to encourage continuous development.

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