



Management Information Systems in Decision Making: Narrative Review

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ABSTRACT

Management has a role in generating information, which requires the use of information systems capable of producing relevant and better data. Systematic decision-making procedures are also needed to produce more focused data. In making decisions for hospital development, hospital management considers several factors, including health programs by looking at facilities and specialist doctors who can provide excellent service, as well as efforts with good numbers and services to introduce or convince the public of our services. general, company, and insurance This research uses a narrative review approach, with many articles on the same problem. Articles are taken from a database from Scopus, Science Direct, ProQuest, SpringerLink, Google Scholar, Nature, JSTOR, and Emerald Insight with a total of 29 articles used. The purpose of this study is to determine whether management has a significant influence in decision making. decisions in hospitals with strategic support systems such as human resource development, program selection, marketing, and facility growth.

Kata kunci:

Sistem Informasi Manajemen
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ABSTRAK

Manajemen memiliki peranan dalam menghasilkan informasi, yang mengharuskan penggunaan sistem informasi yang mampu menghasilkan data yang relevan dan lebih baik. Prosedur pengambilan keputusan yang sistematis juga diperlukan untuk menghasilkan data yang lebih terfokus. Dalam mengambil keputusan untuk pengembangan rumah sakit, manajemen rumah sakit mempertimbangkan beberapa faktor, antara lain program kesehatan dengan melihat fasilitas dan dokter spesialis yang dapat memberikan pelayanan prima, serta usaha dengan jumlah dan pelayanan yang baik untuk memperkenalkan atau meyakinkan masyarakat akan pelayanan kami. umum, perusahaan, dan asuransi Penelitian ini menggunakan pendekatan narrative review, dengan banyak artikel tentang masalah yang sama. Artikel diambil dari data base yang berasal dari scopus, science direct, ProQuest, SpringerLink, Google Scholar, Nature, JSTOR, dan Emerald Insight dengan total artikel yang digunakan sebanyak 29. Tujuan dari penelitian ini adalah untuk mengetahui apakah manajemen memiliki pengaruh yang signifikan dalam pengambilan keputusan di rumah sakit dengan sistem pendukung strategis seperti pengembangan sumber daya manusia, pemilihan program, pemasaran, dan pertumbuhan fasilitas.

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INTRODUCTION

Hospital performance is an important factor in determining the quality of hospital services. To analyze hospital performance, indicators are required. The

performance indicators that are developed include not only financial (financial) indicators, but also non-financial indicators, particularly those used to monitor outcomes. (Undang-Undang Republik Indonesia nomor 44 Tahun 2009 tentang Rumah Sakit, 2009)

The development of cutting-edge health services is followed by the creation of a marketing system. Apart from being passive and dependent on intuition and experience, the previous hospital marketing pattern must be transformed into active and based on a trustworthy information system for top management decision making to be more accurate. Similarly, the availability of advanced diagnostic, therapeutic, and rehabilitation facilities at exorbitant rates, all of which are required to enhance health services and must be carefully examined in procurement.(Sabarguna, 2014)

Management information systems (MIS) is an organized, diverse, and automated information system concerned with the process of gathering, storing, and sending applicable data to support an organization's management operations. An organization's data is divided throughout its numerous divisions. Data is processed in a variety of ways, including graphs, diagrams, charts, and reports, to start generating useful and timely information for management. All company information is stored centrally via MIS. Management information systems (MIS) are employed at all levels of a company. Management information systems are classified into many categories. The decision-making process information system is the topic of this article. MIS is critical in not only collecting and managing information but also in trying to represent it in various formats that management can use to make important organizational decisions.(Sharon Ross & Venkatesh, 2016)

An information system is required to aid decisions by monitoring the scope and utilization of hospitals by the community via a geographic-based information system that is designed to work with spatial data, so that this system not only captures but also checks, integrates, and analyzes data that spatial refers to the condition of the earth such as. Database integration techniques such as querying and statistical analysis are used to depict and evaluate the unique properties of mapping that separate GIS from other information systems and are effective in explaining occurrences and even creating strategies that may forecast what will happen.(Hariyanto, 2016; Wahjono, 2014)

The presence and role of information technology has ushered in a new age of growth in all sectors, but this progress has not been matched by a rise in human resources, which define the achievement of the institution's aims. Any sort of communication that adds understanding and knowledge that is valuable to the receiver of the information is considered information. Information is like the blood that travels through an organization's body. Data, or facts that describe genuine occurrences and real things, is the source of information. Data is in its raw state and cannot tell us much, thus it must be processed further. To generate information, the data is run through a model.(Mishra, 2018; Rochaety, Eti, & dkk, 2008)

The usage of management information systems in the workplace is widespread. One of the applications of management information systems in the company is in the field of Human Resources Development (HRD), where the main activities carried out by the Human Resources are recruiting, training and education, data management, mutation, benefits administration, and employee termination. All of these operations will be successfully provided management makes effective use of the information system.(Syamsi, 2000)

A solid information system will result in excellent judgments in policy creation, program and program execution, and human resource management. Managers need to be able to guarantee that the data gathered is accurate for the subsequent information to be accurate. This study will examine the function of Information Systems Management in

decision making based on the fundamental notion.(Nowduri, 2019; Sabarguna, 2014)

The information system is essentially a subsystem inside a bigger system. Information systems cannot be developed or run independently of other subsystems. A firm organization's information system is merely one of the multiple subsystems. The function of the other subsystems is fully dependent on the role organization. Sub-systems are often specified in terms of activities and according to a certain department within an organization.(Rustiyanto, 2011)

The function of information systems is to assist in the management and organization of the activities of the subsystem in the organization so that the organization may achieve its objectives. As part of their job, each member of an organization requires and generates information. Their work and information systems will integrate everyone's requirements. Coordination is a vital part of the systems approach.(W.D., Rokhim, & Febriyanti, 2015)

Information systems are critical for meeting fundamental everyday demands at all levels of society, from those with low economic and educational levels to those with advanced education and economic levels. the greater. The more a person's income and educational status, the greater the demand for knowledge.(Laudon, 2012) The execution of the leadership's major duties would be successful if it is backed by an effective information system. Logical decision-making necessitates an awareness of the issue as well as knowledge of potential solutions. More detailed information leads to better conclusions.(Satyanarayana Reddy, Rallabandi Srinivasu, Srikanth Reddy Rikkula, & Vuda Sreenivasa Rao, 2009)

METHOD

This study uses a review method with the type of narrative review. Narrative review aims to identify information system for management level to making decision. Sources of scientific articles are obtained from several databases and there are no standard or protocols in the collection of article narrative reviews.(Huedo-Medina, Ballester, & Johnson, 2013) Therefore, article screenings as figure 1.

RESULTS AND DISCUSSION

Based on the synthesis of 26 articles. There are 3 main ideas related to information systems in decision-making. The main idea is the definition of Management Information System (MIS), information system support organizational effectiveness and efficiency, and the role of management information systems in decision-making.

The management information system in this narrative review study found that MIS has a role in decision making. Connection with the other decision support systems, information inquiries, cross-referencing of external information, and prospective data mining so that managers can make decisions based on existing data and facts. So that the decisions, made can overcome or advance the business that is being carried out.

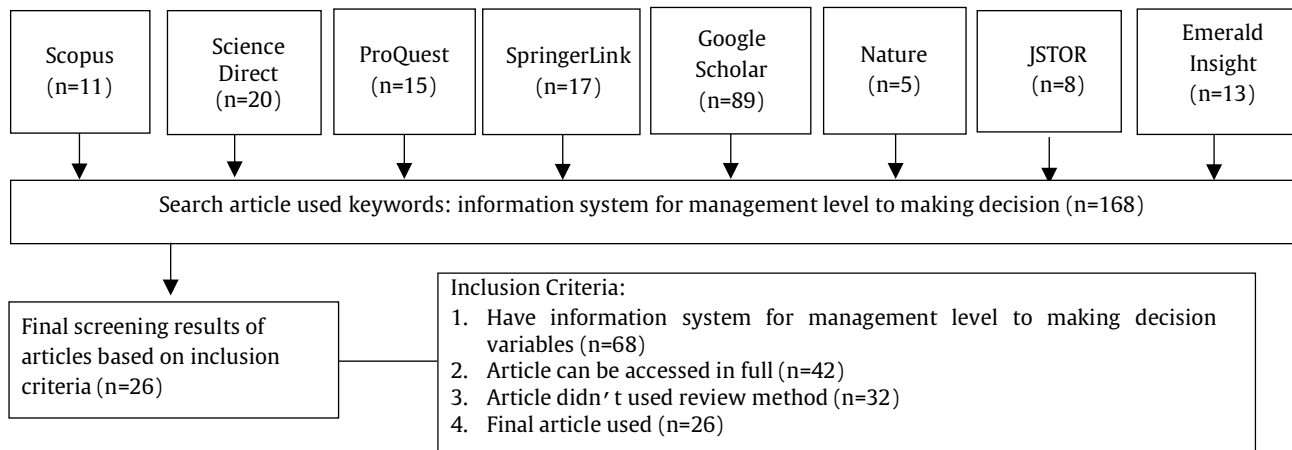


Figure 1. Flow Chart Screening Article

Table 1. Result Synthesis Matrix

No	Main Idea	Similarities of Research Findings
1	Definition of Management Information System (Berisha - Shaqiri, 2014; Murphi & Sidauruk, 2021; Ranisavljevic, Spasic, & Mladenovic, 2012; Setiawan & Permadani, 2016; Suhendar, 2021)	According to numerous sources of literature that were reviewed and examined, a management information system is a collection or set of procedures that enable data to be processed, analyzed, and presented in such a way that the data becomes valuable for decision-making. This system is an extremely beneficial instrument for assisting and controlling business such as hospital activities.
2	Information System Support Organizational Effectiveness and Efficiency (Berisha - Shaqiri, 2014; J. M. O. Gabriel & Obara, 2013; Kimiafar, Sarbaz, & Sheikhatheri, 2015; Meiryani, Siagian, Damanik, & Djuanda, 2020; Mishra, 2018; Nowduri, 2019; Ranisavljevic et al., 2012; Satyanarayana Reddy et al., 2009; Setyawan, 2016; Vittal A & Shivraj K, 2008)	Information systems that support business activities cannot be set up immediately and in real time. The information system must be aligned with the aims and characteristics of the company. Information systems are critical to the overall performance of a company. They provide numerous advantages to users, ranging from simple transaction processing to operational level for tough operations such as making crucial and competitive decisions at the company's strategy level. Information systems can help you make informed decisions by offering accurate and up-to-date data and conducting analytic tasks.
3	The Role of Management Information Systems in Decision Making (Aghazadeh, Aliyev, & Ebrahimnezhad, 2012; Alfawaz & Alharthi, 2019; Asemi, Safari, & Zavareh, 2011; Awan & Khan, 2016; Azemi N.A. & Zaidi H., 2018; Berisha - Shaqiri, 2014; J. M. O. Gabriel & Obara, 2013; Ghaffarzadeh, 2015; Ismail et al., 2010; Kimiafar et al., 2015; Murphi & Sidauruk, 2021; Nowduri, 2019; Omole, 2015; Pujihastuti, Hastuti, & Yuliani, 2021; Sadriani Hade, Abidin Djalla, & Ayu Dwi Putri Rusman, 2019; Sharon Ross & Venkatesh, 2016)	A management information system enables managers to get information instantly. Connecting to other decision support systems, conducting information searches, cross-referencing external data, and developing potential data mining algorithms are all instances of this. Each decision-making process concludes with a conclusion that may or may not result in action. Decisions vary according to the mechanism used to create them. Making decisions is crucial in management. Errors in decision-making may be costly to the business. The way decisions are made has an effect on the design of computer-based information systems intended to assist in decision-making. Utilizing a range of computer applications allows for the collection of data in order to get information quickly and properly.

DISCUSSION

Definition of Management Information Systems (MIS)

Management Information System (MIS) is an information network needed by leaders in carrying out their duties (for the benefit of the organization), especially in making decisions in achieving organizational goals. (Berisha - Shaqiri, 2014; Murphi & Sidauruk, 2021) MIS techniques to provide managers with information that enables them to plan and control operations. (Hade, Djalla, & Rusman, 2019) Computers have added one or two dimensions, such as speed, accuracy and increased volume of data, which allow the consideration of more alternatives in a decision, which in an organization consists of a number of elements, people who have various

roles in the organization, activities or tasks to be completed, place of work, work authority, and communication relationships that bind the organization. (Mukijat, 2005; Murphi & Sidauruk, 2021) MIS is the application of information systems within the organization to support the information needed by all levels of management. (Setiawan & Permadani, 2016; Suhendar, 2021) The MIS pressure is on the system, not on its management, but in order for MIS to run effectively and efficiently, it needs to be managed as well as possible. (Mishra, 2018; Ranisavljevic, 2012)

The information system in its stages can be described as a pyramid structure, with the lowest layer covering information for transaction processing, status checks, and so on. The next stage includes sources of information to support tactical planning and decision making for oversight and the top stage

includes sources of information to support planning and policy making by higher management.(Rusdiana & Irfan, 2014)

Information System Support Organizational Effectiveness and Efficiency

Information systems that support company operations cannot be established directly and in real time. The information system must be consistent with the corporate goals and characteristics.(Berisha - Shaqiri, 2014; J. M. O. Gabriel & Obara, 2013) Companies cannot embrace information technology without first completing a feasibility study to determine whether or not to deploy information technology. When a corporation decides to use information technology, the first step is to prepare the technology and social resources.(Vittal A & Shivraj K, 2008) The application of information systems in business entities is known as management information systems.(Kimiafar et al., 2015) This information systems system may be used for both internal and external organizational tasks. An management system that is used to organizational functions or at current levels in the business organization is the formed in response to the organization's internal operations. The system used for the organization's external operations is one that is linked to the activities of customers and suppliers.(Meiryani et al., 2020; Mishra, 2018)

Information systems are crucial to an organization's overall effectiveness. They provide several benefits to users, ranging from basic processing transactions to the operational level for challenging activities such as making vital and competitive choices just at strategic level of the company.(J. M. O. Gabriel & Obara, 2013) Several functions performed by information systems in an organization may be defined. The three most significant aspects are as follows: first, information systems assist company processes and operations; second, they support employee and management decision making; and third, they support competitive advantage plans. (Nowduri, 2019) These three essential responsibilities include all additional roles that information systems perform in an organization.(Ranisavljevic et al., 2012)

Finally, information systems help to promote competitive advantage plans. Competition in today's industry is exciting, and what will be essential is how fast organizations can transform the sheer volume of information they acquire into knowledge, allowing them to produce products and services that are ahead of the competitors.(Satyanarayana Reddy et al., 2009) Strategic information systems can assist hotel operations in obtaining the new media they need to deliver goods and services that will give them a competitive edge over their rivals.(Berisha - Shaqiri, 2014)

Most organizations are organized along functional lines or organizational dimensions. An organisational structure, which primarily illustrates the powers and duties of organizational members, frequently reveals these functional hierarchies. Accounting, Finance, Marketing, Personnel, Research and Development, Operations/Production, and so on are typical functional areas in most corporations.(Satyanarayana Reddy et al., 2009) To achieve successful results, an organization's MIS might be segmented along these lines. In the following paragraphs, we will go through a couple of them briefly. (Kimiafar et al., 2015)

- Accounting Management Information Systems (AMIS): AMIS is a subset of an organization's MIS that provides accounting and financial information, as well as other information obtained in the routine processing of accounting transactions—aggregate information relevant

to accounts payable, accounts receivable, payroll, and many other applications. This subsystem generates external reporting, decision support, planning and control, and so forth.

- Human Resources/Employees Management Information Systems- HR-MIS: The HRIS plays an important role in achieving organizational success by effectively managing information pertaining to the organization's personnel. The following topics are covered: workforce analysis and planning, hiring, reporting, training, job task allocations, and many more. Human resource planning reports, job application evaluations profiles, training and skills inventory reports, scheduling and job placement, wage and pay administration, and other reports are examples of HR-IS outputs.
- Marketing Management Information Systems (Mk-MIS): This role assists managers with product creation, distribution, price decisions, promotional effectiveness, and sales forecasting. Marketing research, product creation, promotion, and advertising are all part of this job.
- Mf-MIS (Manufacturing Management Information Systems) is another name for production information systems. It is concerned with information of the manufacturing process, such as the monitoring and control of materials, goods, and services across the company. We must not be afraid to state that the efficiency of any functional area of an organization, or the organization as a whole, is heavily dependent on the quality of choices made by all decision-making members of the organization.(Vittal A & Shivraj K, 2008)

Organization performance pertains to how a company has achieved total self-awareness as a result of leaders creating well-defined objectives for workers and laying out tactics for effectively accomplishing those goals. Management is implementing transparent decision-making procedures and communication conduits. Meanwhile, efficiency is a strategy of accomplishing defined goals with the greatest feasible results.(Setyawan, 2016) The efficiency process, according to this definition, is the achievement of suitable organizational objectives with little expenditures and in a short duration of time on previously stated targets.(Ranisavljevic, 2012; Satyanarayana Reddy et al., 2009)

By delivering correct and up-to-date data and performing analytic activities, information systems can assist you in making sound choices. You must ensure that effective management system you choose can function with the various formats accessible for the organization. Suitable information systems can organise the fundamental data accessible from your company's activities and records into reports that may help you make choices.(Mishra, 2018; Nowduri, 2019)

The Role of Management Information Systems in Decision Making

A management information system provides managers with instant access to information. Connection with the other decision support systems, information enquiries, cross-referencing of external information, and prospective data mining methods are all examples of this.(Aghazadeh et al., 2012) These systems may also compare strategic objectives with practical choices, providing managers with an understanding of how their actions fit within company strategy.(Berisha - Shaqiri, 2014; Kimiafar et al., 2015)

Decision making has two purposes: it serves as the beginning point for all conscious and directed human

behaviors, whether individually and collectively, whether institutionally and organizationally, and it serves as something futuristic, that is, it has to do with the future, whether the impact is sufficiently long-lasting).(Asemi et al., 2011) When the final choice is limited to a single issue, the objective of decision making, namely: a single goal, happen.(Ismail et al., 2010) That is, once a choice is made, it will have no effect on other issues, but multiple objectives emerge when the resultant decision affects more than one problem, implying that decisions made concurrently resolve two or more contradictory or non-contradictory problems. (J. M. O. Gabriel & Obara, 2013)

The decision-making process culminates in either a good or a terrible choice. A good decision results in the organization's success in terms of productivity and the courses of action that enable an individual, group, or organization to be effective, whereas a bad decision results in an ineffective and inefficient course of action, resulting in low or no productivity and overall loss of time, effort, finance, and labor.(Satyanarayana Reddy et al., 2009)

Each organization thrives, prospers, or fails as a consequence of its members' choices. The success of decision-making is heavily reliant on both accessible knowledge and the process's components, referred to as functions.(Awan & Khan, 2016) For instance, if management goals are missing or ambiguous, most often as a result of insufficient information, there is no foundation for conducting a search.(Setyawan, 2016) Without the information, the search has no significance since there are no alternatives against which to evaluate the search results, which results in an undesirable outcome owing to the random selection of a certain course of action. Alabi suggests that the search might be conducted through.(Silitonga, 2019)

MIS may also be considered as a tool for data transformation, which is then employed as information in the decision-making process. The data is inundated in the MIS process, which produces information, which is then used as an input by the user processes.(Azemi N.A. & Zaidi H., 2018; Lipursari, 2013) The data is transformed into information for a particular purpose, and it presents numerous possibilities of course of action for decision making, from which one course of action is chosen, which is nothing more than the decision made. A appropriate MIS strategy should be adopted to enhance decision making using MIS, and it should be guaranteed that the option made is entirely compatible with the system.(Mishra, 2018; Shodiq, 2021; Silitonga, 2019) As a result, time and money will be saved, and the likelihood of making a mistake will be reduced. Furthermore, the chosen MIS approach must be consistent with the choices taken. That is, there should be a point of convergence between the organization's choices and its MIS strategy.(Abusweilem & Abualous, 2019)

Every decision-making process results in a final conclusion, which may or may not trigger action.(Berisha - Shaqiri, 2014) Decisions differ based on the system in place to make such decisions. Modern information technologies provide new solutions for corporations, organizations, and other scientific institutions, resulting in the creation of new work environments computer - based communication between individuals.(J. M. O. Gabriel & Obara, 2013) This varies from working individuals in their immediate surroundings, allowing for more flexibility, simpler solutions to business difficulties, higher creativity, better interpersonal interaction, and so on. Well-presented solutions which have an influence on people's fate, not just in physical but also in intellectual effort.(Azemi N.A. & Zaidi H., 2018)

Single-purpose decision making occurs when a choice is made that only addresses one issue. (Kimiafar et al., 2015) That is, after it is agreed that there will be no other difficulties, the following choices concerning more than one problem will be dual, which means that the decisions chosen directly answer two or more problems, which are contradictory or non-contradictory.(Nowduri, 2019) As a result, the management information method is a system for displaying data. The role of the SIM determines what data must be given, how it appears, and the properties of the SIM itself.(Pujihastuti et al., 2021) The function in this scenario is decision making. To be able to conduct business and make choices, excellent information is required (accurate, timely, relevant).(Azemi N.A. & Zaidi H., 2018; J. M. O. Gabriel & Obara, 2013; Satyanarayana Reddy et al., 2009)

Decision making is critical in management. Decision-making errors may be detrimental to the company.(Ghaffarzadeh, 2015) The manner in which choices are made has an impact on the design of computer-based information systems meant to aid in decision-making. Collecting data in order to acquire information rapidly and accurately may be accomplished by using a variety of computer programs.(Berisha - Shaqiri, 2014)

Management Information Systems, particularly in the growth of hospitals, are critical for the correctness of choices made by each line of management.(Sadriani Hade et al., 2019) Whether at the lower-level management level where choices are structured/programmed, at the mid-level management level where decisions are semi-structured or semi-programmed, or at the top - level management level where decisions are unstructured/unprogrammed. As a result, the business must be able to guarantee that the data, information, and workers used to operate the information system are appropriate. The business or organization selects various individuals/employees who are capable of observing data.(Aghazadeh et al., 2012; J. Gabriel, 2012; Omole, 2015; Sharon Ross & Venkatesh, 2016)

Management information systems is also known for basing its operations on scientific procedures, which ensures that business decisions are organized and well-planned – in effect, encourages rationality during decision-making – implying that the principles, strategies, and operating modes in MIS can be intellectually used by macroeconomists to distinguish between good and bad decisions. As a result, after such filtering is completed, excellent options are supported while poor ones are discarded – finally, such actions assure positivity in terms of organizational decisions, which effectively connect up directly to enhancing the overall decision process.(Satyanarayana Reddy et al., 2009; Wahjono, 2014)

CONCLUSIONS AND SUGGESTION

Management information systems (MIS) offer a company the accurate, timely, relevant, and full data essential to make sound business decisions. It enables the effective and efficient execution of planning, control, and operational activities. It offers decision-makers a diverse set of decision choices, allowing them to make the best choice possible given the system and the scenario. It guarantees that the decision leads to a favourable consequence more often than not. These are the primary reasons why prominent firms use MIS for decision-making and information management.

Without a doubt, management information systems are an effective tool for contemporary business practitioners;

their role in decision-making cannot be overstated, as effective decision-making is eventually a function of accurate, timely, relevant, complete, and economical information, which MIS produces. Today's enterprises place a premium on information resources, and MIS is the only way to meet these expectations.

Management is often expected to handle a variety of issues related to an ongoing business such as a hospital. The problems faced by management are crucial. A good manager is a manager who can have accuracy in decision making coupled with the rapid development of technology such as management information systems, managers can make it easier to make decisions.

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