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Research Article

The Role of Management Information Systems in the Decision-Making Process in the Hospital Sector

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Abstract:
Management Information System (MIS)is an information which in addition to performing all necessary transaction processing for an organization. Hospitals are organizations where healthcare professionals provide complex care using specialized knowledge and equipment to meet patients' care needs. Conventionally, hospitals comprise different clinical departments and functional units. However, there have not been many studies that have reviewed other research studies on how useful management information systems are in the health care sector in the hospital sector.This paper is a literature review that discusses management information systems in decision making, especially in the field of hospital health services. Articles are collected by Google, Google Scholars and medeley databases. The review is carried out on articles with the topic of management information systems or decision-making systems, especially those related to the hospital sector. We identified about 20 articles published in the last decade then analysed and drew conclusions.The results of this study indicate that the implementation of management information systems in the field of health services, especially hospitals, is known to be able to have several impacts, such aspatient satisfaction, strengthen internal communication network, reduce costs store data reliably in a digital environment, store data reliably in a digital environment, improve service quality, assist managers in decision making, fast data collection, and speed up and simplify financial reports.
Keywords: Management information system, hospitals, decision making

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1. Introduction

Organizations always need systems for collecting, processing, storing, looking back and transmit information, including small entrepreneurs. Due to the explosion of information, as a result of the population explosion. Information is very necessary for activities management operations. Since the amount of information is huge, its best Activities related to this information are partly carried out by humans and partly carried out by machines. As a result, the idea emerged to solve the problem, preferably human and machines form a system combined with checked results of dialogue and interaction between machines (computer) and human processing(Meiryani, Siagian, Puspokusumo, & Lusianah, 2020). Management Information System is flow-processing procedures based on computer data, and integrated with other procedures in order to provide information in a timely and effective manner to support decision-making and other management functions. This finding is also present when we consider that the number of contemporary business data and information exponential grow, and efficient business decision-making is possible only if the necessary information is fast, accurate and qualitative and managed by adequate staff but for the most cases not appropriate efficiency is the result of a lack of good management information systems. The rapid development of information technology coupled with the development of telecommunications technology has streamlined every area of life and human activity(Berisha - Shaqiri, 2014). Information has become an essential resource for managing modern organizations. This is so because today's business environment is volatile, dynamic, turbulent and necessitates the burgeoning demand for accurate, relevant, complete, timely and economical information needed to drive the decision-making process in order to accentuate organizational abilities to manage opportunities and threat(Ghaffarzadeh, 2015). Informational application which depends on the information already input while answering to a given query. For example, a decision support system could provide, comparative sales figures for one week/month and the next projected revenue figures based on new product sales assumptions, consequences of different decision alternatives, given past experience(Nowduri, 2011). Other studies have also shown that management information system supporting the quality of management before the management control system can be fully implemented(Tambun & Kuntjoro, 2013). Hospitals are organizations where healthcare professionals provide complex care using specialized knowledge and equipment to meet patients' care needs. Conventionally, hospitals comprise different clinical departments and functional units. Systematic information management and improvements in information and

communication technology increase the quality of care and reduce costs(Murtola, Lundgrén-Laine, & Salanterä, 2013). However, there have not been many studies that have reviewed other research studies on how useful management information systems are in the health care sector in the hospital sector.

2. Literature review

a. Information System Definition Management

An organization held transactions that must be processed in order to carry out daily activities. Salary factors must be prepared, sales and payments on estimates must be needed. All this and stuff the other is data processing activities following a standard procedure certain. Computers are useful for data processing tasks such as this, but a management information system also performs tasks and more than just a data processing system. Is a processing system information that applies skills for management and for decision making decision (Martins, Assis, Coelho, & Almeida, 2019). A Management Information System (a term commonly known to people) is a human/machine system integrated (integrated) to provide information that supports the function operations, management and retrieval decisions in an organization. This system uses software (software) hardware (hardware) computer, manual procedure, model management and decisions and a databases (Vafaei & Harati, 2010).

b. Development of the Concept of Information System Management

Actually before people use the existing computer ideas about information systems to support management and decision-making. Use information systems in organizations, turned out to be able to strengthen the organization's ability to achieve its goals. Development of science such as management accounting, science management knowledge, theories management and processing computer, enabling maturation SIM concept, as it exists today. So that the SIM concept can be seen as a fundamental extension of management accounting by incorporating ideas and techniques management science, theory of management behavior and decision decisions and computer skills, then complete the embodiment of the idea SIM concept (Mayssara A. Abo Hassanin Supervised, 2014). Management science is application

Scientific methods and quantitative analytical techniques for management problems. Model formation for analysis management is usually used the formula math or calculation procedure who generally need assistive devices computer. On progress, management theories emphasize in terms of behavior and motivation on organizational structures and systems in the organization. Developments in management theories are important for MIS designer, because it helps in understanding the role of human systems or machines and is useful for the development of decision models (D.K. Aswal , Ajay Singh, Shahswati Sen, Manmeet Kaur, C.S. Viswandham, G.L. Goswami, 2002).

c. Concept Decisions For the System Information

The forces that drive the decision-making process can be dissatisfaction with the current situation or expected rewards from circumstances new. In the case of dissatisfaction, the driving force is the discovery of a problem. In terms of expected rewards, is the result of seeking opportunities. Some decision-making models emphasize more on feedback on decision results. For example, Rubenstein and Haberstroh propose the following steps that is identification of the problem or need for decision making, analysis and reporting of alternatives, selection among the available alternatives, communication and implementation of decisions, follow-up steps and feedback decision (Utami, 2011).

d. Decision Making System

The concept of a decision system closed obviously assumes a rational person who logically examines all alternatives, ranks according to the importance of the results, and selects the alternative that leads to the desired outcome best/maximum. Quantitative model decision making is usually closed decision system model. An open decision system view decisions as being in a complex environment and partly unknown. Decisions are influenced by the environment and in turn the decision process then affects the environment. Decision makers are considered not to be logical and completely rational, but more show rationality only within the limits suggested by the background, view of alternatives, ability to handle a decision model, and so on (Fuglseth & Grønhaug, 2003). A computer based MIS is useful in both closed and closed systems open system. In a closed decision model, the computer acts as a calculator to be able to calculate the optimum result. Inside the model open, the computer acts as a helper for human decision-makers in calculating, storing, search again, analyses data. The design allows human decision makers to allocate tasks for themselves or on a computer. Limited human takers decisions in the organization in addition to the relative efficiency of human processing on the decision means that the driver's license must program as many decisions as possible. If the decision cannot be fully programmed, then what is possible is partial programming. In this case the rules have been determined previously used to a certain extent and then the final decision is left to a human decision maker. MIS should be designed to monitor programmed

decisions and to recognize decisions which seems impractical by the decision rules or which do not appear to produce the appropriate results plan. Programmed decisions are usually unstructured. For this MIS provide if possible a set a tool by which decision makers can structure the decision-making process. For problems no iteratively programmed, MIS can be designed with partial structuring to speed up processing of the rest by humans (Al-Tarawneh, 2011; Janssen, van der Voort, & Wahyudi, 2017; Khakheli & Morchiladze, 2015; Nooraie, 2012).

3. Method

This paper is a literature review that discusses management information systems in decision making, especially in the field of hospital health services. Articles are collected by Google, Google Scholars and mendeley databases. The review is carried out on articles with the topic of management information systems or decision-making systems, especially those related to the hospital sector. We identified about 20 articles published in the last decade then analyzed and drew conclusions.

4. Results and discussion

In this information age, hospitals are required to improve their performance and competitiveness as a business entity without reducing the social mission it carries. The hospital must formulate strategic policies on the organization's internal, management, and human resources as well as Must be able to quickly and accurately make decisions to improve service quality health services to the wider community in order to become a responsive, innovative, effective, and efficient and of course profitable for the owners of capital by not neglecting the mission social. Hospital Management Information System is a computer system that processes and integrate all healthcare business process flows in the form of a network coordination, reporting and administrative procedures to obtain information quickly, accurately and accurate. Previous research has shown that in the field of hospital management information systems used can be patient satisfaction, strengthen internal communication networks, reduce costs, and store data reliably in a digital environment. Currently the hospital computer-based Management Information System (MIS) is a very important means of support, it can even be said to absolutely support hospital operational management (Demirel, 2018). The application of management information systems in the hospital sector is also known to be able to improve the quality of patient care, by assisting nursing managers in decision making (Murtola et al., 2013). Other studies have shown that the application of hospital management information systems can help provide quick data for decision making and systematically evaluate hospital policies (Lin, 2014). Other research shows that management information systems are able to speed up and simplify and increase the competence of financial managers in presenting financial reports quickly and accurately for hospital needs (Ambarriani, 2013). The impact of the implementation of management information systems in hospitals is also reported based on research showing that the use of management information systems is able to accelerate the process of collecting important data so that the decision-making process can take place quickly (Mutale et al., 2013). So that based on research that has been done previously to see the benefits of management information systems at hospital sectors can be seen in the table below:

Table 1. Summary of the benefits of management information systems in the hospital sector based on previous research

No	Impact of hospital management information system	Percentage (%)
1.	patient satisfaction	9,09%
2.	strengthen internal communication network	9,09%
3.	reduce costs store data reliably in a digital environment	9,09%
4.	store data reliably in a digital environment	9,09%
5.	improve service quality	9,09%
6.	assist managers in decision making	27,27%
7.	fast data collection	18,18%
8.	speed up and simplify financial reports	9,09%

Sources: (Ambarriani, 2013; Demirel, 2018; Lin, 2014; Murtola et al., 2013; Mutale et al., 2013)

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5. Conclusion

The implementation of management information systems in the field of health services, especially hospitals, is known to be able to have several impacts, such as patient satisfaction, strengthen internal communication network, reduce costs store data reliably in a digital environment, store data reliably in a digital environment, improve service quality, assist managers in decision making, fast data collection, and speed up and simplify financial reports.

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