THE RELATIONSHIP BETWEEN MANAGEMENT INFORMATION SYSTEM AND OPERATIONAL EFFICIENCY: CASE ON PRIVATE MEDICAL HOSPITALS IN SULAYMANIYAH

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A thesis submitted in fulfilment of the
requirements for the award of the degree of
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DECLARATION

I declare that this thesis entitled "THE RELATIONSHIP BETWEEN MANAGEMENT INFORMATION SYSTEM AND OPERATIONAL EFFICIENCY: CASE ON PRIVATE MEDICAL HOSPITALS IN SULAYMANIYAH" is the result of my own research except as cited in the references. The thesis has not been accepted for any degree and is not concurrently submitted in the candidature of any other degree

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DEDICATION

I dedicate this study to my family members who were the main support of my achievements in my personal and professional life. Furthermore, I would like to express my profound gratitude to my esteemed supervisor and dear friends. Their invaluable guidance and unwavering encouragement have been instrumental in the successful completion of this thesis. I am sincerely thankful for their steadfast support throughout this journey.

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ABSTRACT

This research addresses a significant gap in the existing literature by focusing on the relationship between MIS and operational efficiency specifically in the context of private medical hospitals in Sulaymaniyah. The healthcare industry has witnessed significant advancements in technology and increasing complexity in operational processes. Management Information Systems (MIS) have emerged as valuable tools for enhancing operational efficiency and improving overall performance in healthcare organizations. Management Information Systems (MIS) and operational efficiency are crucial elements in Sulaymaniyah's successful functioning of private medical hospitals. The relationship between these two factors is the focus of this research. Based on the research conducted on the relationship between management information systems (MIS) and operational efficiency in private medical hospitals in Sulaymaniyah, recommendations can be, Enhance MIS Integration, Staff Training and Engagement, Continuous Monitoring and Evaluation, and Continuous Process Improvement This research will gain insights into the relationship between MIS and operational efficiency in private medical hospitals in Sulaymaniyah. The findings will highlight the importance of adopting and utilizing MIS to enhance operational efficiency, improve patient care, and achieve organizational goals. The research outcomes will provide valuable recommendations for hospitals to optimize their MIS usage, streamline processes, and enhance overall operational efficiency, contributing to the advancement of healthcare services in the region.7

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LIST OF ABBREVIATIONS

MIS	-	management information system
CPTR	-	Current Public Transport Record
OE	-	operational efficiency
ERP	-	enterprise resource planning
SRS	-	simple random sampling
SPSS	-	Statistical Package for Social Science

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CHAPTER 1

INTRODUCTION

1.1 Introduction to the Study

The key to facilitating and achieving effective decision-making in an organization is a management information system (MIS), (Karim, 2011). one of the best definitions that explain MIS is "a method used by organizations to provide historical, current, and future information on internal operations and foreign intelligence. On the other hand, According to (tanwar, 2013) The term "management information system" (MIS) refers to a collection of systems that firms may use to boost productivity. It helps an organization's planning, management, and operation processes by providing consistent information to decision-makers in a timely manner " (Asefeh Asemi, 2011). Its importance and influence on the efficient functioning of a corporation cannot be overstated. Every successful business uses these systems in some capacity because of this. Considering that information is compared to the blood that flows through an organization. Like humans, animals require blood to circulate in their bodies (Fitria Eriyanti Putri1, 2022). The MIS and its organizational subsystems support decision-making in a variety of fundamental ways.

These days, some businesses employ use MIS to help managers make decisions. For instance, the Durban Unicity Council chose to adopt a Public Transport Management Information System (PTMIS) created by Stewart Scott to help decision-makers extract synthesized information from a large database like the Current Public Transport Record (CPTR) of Durban. Planners and administrators of transportation should utilize this system (Asefeh Asemi, 2011).

Information systems for managing finances, purchases, marketing, and human resources are examples of management information systems (MIS) that have been

chosen and are believed to have an impact on the operational effectiveness or efficiency of State institutions.

Meanwhile, Operational efficiency is mainly a statistic used to assess how effectively profits are generated in relation to operational expenses. A company or investment is more profitable the more while on the other hand these studies are concerned with operational efficiency. Operational efficiency is mainly a statistic used to assess how effectively profits are generated in relation to operational expenses. A company or investment is more profitable the more operationally efficient it is. This is because the entity may provide more income or returns than an alternative for the same or less money. This is because the entity may provide more income or returns than an alternative for the same or less money (HAYES, 2022). This study's goal is to examine the connection between management information systems and operational efficiency in the context of Sulaymaniyah's private hospitals. The management information stem has been chosen as the independent variable, and operational efficiency has been chosen as the dependent variable.

1.2 Problem Statement

The existing healthcare system has several procedural and logistical problems. These concerns are pertinent to the delivery of services. The provision of healthcare is crucial to preserving human wellness (Sushil K. Sharma, 2006). The current system falls short of expectations because it has a variety of issues that affect how satisfied patients or clients are, among other things. A stringent change must be enforced in several areas, including financial constraints, hospital productivity, patient happiness, hospital security, patient safety, efficiency, regulatory requirements, information security, and energy demands. For a better healthcare facility to be constructed, all these shortcomings must be addressed (Anand, 2017).

The demand for pharmaceutical services has been increasing in recent years despite constant supply increases, raising concerns about "dynamic" shortages in the pharmacy sector. The expansion of pharmacists' traditional responsibilities to include

patient education, counseling, and medication management, the limited use of pharmacy technicians and technology, poor work design, and the higher proportion of female pharmacists—who work fewer hours than their male counterparts—are all factors in the shortage (G.R.Vaisshalli, 2022).

It is much more difficult for the public because different manufacturers provide the same gadget with varying standards. It is never easy to ensure a seamless transition in terms of speed and bandwidth when standards vary. These two elements differ in terms of criteria. It is impossible to ensure collision avoidance when the bandwidth fluctuates. Variable bandwidths will have a negative impact on the system's power consumption and reduce its efficiency (Anand, 2017).

Other elements that must be considered include cost and flexibility because they differ from the standards that are provided. When there are devices with several standardizations, interface usage rises. To resolve this problem, it is possible to utilize a low-cost gadget with dependable standards and comparably good performance (Anand, 2017).

Also, Health monitoring systems that can be updated with cutting-edge technology like IoT are underdeveloped in rural regions. Mental Consider health care as an example. There are still many people who lack access to mental health treatments, and in remote places, the lack of SQUID sensors that can monitor magnetic changes and transmit that information to healthcare practitioners remains a significant problem. Another disadvantage to consider is the lack of internal IoT sensors in health monitoring subsystems. The fact that some hospitals are still working to increase their data transmission security is a crucial additional aspect. Scan reports, physician reports, and other important information are included in a patient's data. One method for keeping information secure is to store it on the cloud. Due to a security compromise, this strategy was recently discovered to be ineffective (Anand, 2017).

1.3 Problem statement

As highlighted in problem background section, its evidently seen that private healthcare sector still lacking knowledge on how MIS can improve their operation efficiency and advance the interaction internally and like wise externally with patients.

For example the current situation is Long wait times for appointments, and limited access to experts are general and common issues with healthcare in our area. Patients may be critically ill and in need of treatment, yet staff members may not be able to give them the best care possible, which is one of the obstacles in providing healthcare services. For the majority of sick individuals, hospitals are the safest places to be. However, the quality of the medical treatment offered during the waiting period significantly impacts how pleased patients are. There is no question that patients wait a significant amount of time at the hospital for medical attention. Patients are occasionally forced to remain longer than intended, which can have several negative effects (team, 2022).

Patients may receive subpar care and experience worse results because of this. Patients may also be hesitant to seek medical attention because of the expense or their fear of the unknown. The competitiveness of an organization is increased through a management information system. It gives information and identifies what works and doesn't. These reports give business leaders the information they need to make decisions and improve employee and corporate performance. The misuse of MIS could possibly lead to many problems that one of which can be deficiencies in operations and there that’s the main reason operation deficiency will be defined here. Operational efficiency may be defined as an organization's capacity to continuously provide excellent goods and services while using the fewest number of resources. Which can solve many problems in organizations.

1.4 Research Questions

1. What is the level of usage of management information systems in Sulaymaniyah's private healthcare sector?

2. What is the level of operational efficiency in Sulaymaniyah's private healthcare sector?

3. What is the relationship between management information systems and operational efficiency?

1.5 Research Objectives

1. To examine the level of usage of management information systems in Sulaymaniyah's private healthcare sector?

2. To examine the level of operational efficiency in Sulaymaniyah's private healthcare sector?

3. To examine the relationship between management information systems and operational efficiency?

1.6 Scope of the Study

This study is mainly focusing on understanding, examining, or investigating the relationship between management information system and operational efficiency on private hospitals in Sulaymaniyah. However, the study will be limited to sampling within the Kurdistan region, private healthcare system employees.

The study will only be examining the relationship between these two and further understand what the other question is to examine the level of MIS used within the private healthcare sector in Kurdistan. Also, will focus on examining the level of operational efficiency in such a context.

1.7 Significance of Study

This study will be very beneficial that has two-fold that one of them is benefits that outlines the important roles MIS plays within healthcare system, also raise an awareness of how MIS can improve or enhance hospitals operational efficiency, while the practical contribution of this study can be for managers that can be top managers or middle operational managers will be aware of what could possibly result out of affective use of MIS on their operational efficiency.

As this study develops or validates an examination or investigation of the healthcare private sector in Sulaymaniyah and will provide a conclusion on the current trends within the healthcare system.

1.8 Summary

This chapter has delved into the background and rationales behind this research topic, offering a comprehensive overview of what constitutes Management Information Systems (MIS) and operational efficiency. It has elucidated the importance of both elements, highlighting how MIS can significantly enhance operational efficiency within an organization. By defining these key concepts, the chapter has provided a foundation for understanding the objectives and aims of this study. Furthermore, it has set the stage for a detailed exploration of how MIS can be

leveraged to improve operational efficiency, which is crucial for organizational success in today's competitive landscape.

The next chapter will focus on an extensive literature review related to the primary variables used in this study: management information systems and operational efficiency. It will critically examine existing research, theories, and models that pertain to these variables, offering insights into their interrelationship and impact on organizational performance. Additionally, the chapter will address the issues and concerns highlighted in the first chapter, providing a deeper analysis and contextualization of these challenges. By doing so, chapters two and three will build upon the groundwork laid in this chapter, further investigating how MIS can be utilized to enhance operational efficiency and addressing the research gaps identified earlier.

CHAPTER 2

LITERATURE REVIEW

2.1 Introduction

This chapter will address the followings below that discuss on the variables that have been chosen for this research which are management information system (independent variable) and operational efficiency (dependent variable), Also introduces and highlights the important current trends and definitions of MIS and operation efficiencies. Therefore, this chapter will investigate the definition of MIS and operational efficiency. In another section, there will be a prior study pertaining to MIS and operational efficiencies, while in another section there is the research framework of the study. finally, the last two sections will be the discussion of the literature review and the summary of the chapter.

2.2 Management information system definition

The term "management information system," known as "MIS," is made from the phrases "management," "information," and "systems." It is simple to describe management information systems as systems that offer management with information by looking at these three words. A management information system (MIS) is a network of information that executives require to carry out their responsibilities (for the good of the business), particularly when making choices that will help the firm achieve its objectives (Fitria Eriyanti Putri1, 2022). Management information systems (MIS) approach to give management information that helps them to plan and regulate operations (Fitria Eriyanti Putri1, 2022). Or it can also be defined as the main element that enables and attains efficient decision-making in a company (Karim, 2011).

The use of information systems inside an organization to support the information required by all management levels is known as management information systems or MIS. The MIS system is under pressure, not its management, yet good management is necessary for MIS to function as effectively and efficiently as feasible. Planning for MIS must be extremely thorough and time-consuming while taking organizational future changes into account, also developed to deliver daily operating reports so that it may deliver information to improve operation control (Fitria Eriyanti Putri1, 2022).

The use of information technology is both necessary and significant in terms of clinical treatment as well as management tasks due to the information-intensive nature of the health care industry. Despite increased information technology spending, the implementation, use, and usability of healthcare information systems still confront considerable obstacles. When compared to other industries, healthcare organizations' internal IT capabilities fall short, and they struggle to create information systems quickly enough to meet the growing demands for care, quality, and efficiency. The healthcare business is a complicated environment for information systems due to the operational context and features, such as professional culture, complex organizational structure, and management system, as well as the conflict between these and the information systems. (Sunyoung Cho, 2008).

The development and use of management information systems, among other information systems, are part of an organization's information management. According to Choo, information management is the control of a network of procedures for gathering, producing, organizing, distributing, and using information. Information technology, information resources, and policy are also included. The ongoing cycles of six closely related activities include the identification of information requirements, information collection, information organization and storage, production of information goods and services, information distribution, and information consumption. Every action must be planned, supervised, coordinated, and regulated,

particularly when information management for the healthcare organization comprises several units and occupational groups. (Tuula Kivinena, 2012).

2.2.1 The role of management information systems in the management of healthcare organizations

The degree to which a health care organization evaluates its information management strategies and comprehends the function of its information systems in accomplishing strategic goals may be the key determinant of the success of its information systems (David Wainwright, 2000). Recent studies have shown that the adoption of information systems and strategic information management is a significant problem for health care organizations as a result of a lack of strategic thinking.

Six information system success dimensions have been established in the area of patient care information systems: System quality comes first, followed by information quality, usages, user satisfaction, personal impact, and organizational impact. System flexibility and accuracy, reaction speed, simplicity of use, ease of access, and system integration are some of the qualities of the information system itself that make up the system quality dimension. System flexibility and accuracy, reaction speed, simplicity of use, ease of access, and system integration are some of the qualities of the information system itself that make up the system quality dimension. Information system output, such as correctness, usefulness, dependability, currency, format, and timeliness, are examples of information quality metrics. System quality and information quality are interdependent, and whether considered together or individually, these factors affect user satisfaction and usage (Tuula Kivinena, 2012). In order to make decisions about their everyday tasks, such as planning, organizing, staffing, coordinating, reporting, and budgeting, as well as clinical management, managers require an information system. In terms of MIS, the information requirements of managers working at various organizational levels (strategic, middle, or operational level) or various organizational units (e.g., in-patient wards, human resource units, and finance units) vary (choo, 2002). Additionally, past research has

shown that managers' attitudes, abilities, and backgrounds have an impact on the information demands and the usage of information systems.

2.2.2 Challenges of management information system in organizations

Even if management information systems affect businesses' operational effectiveness (Tolle, 2016) It has been noted that implementing new MIS presents a variety of difficulties for an organization. (J. Ho, April 2011) Explain how, despite some of the advantages of MIS, new technology can nevertheless lead to disputes within an organization if their introduction is not handled properly by management. It is emphasized that firms may experience employee resistance and a consequent decline in organizational productivity if they neglect to teach employees prior to implementing any new technology.

On the other hand (Narasimhaiah Gorla, 2010) acknowledge that When a new system is introduced, it may take some time before the majority of employees embrace it. The study found that organizations' issues with not having enough money to invest in new technology or software might have a negative impact on organizational productivity.. Further, (Jean Zoa, 2016) assert that A bigger percentage (73%) of businesses, and especially governmental institutions, report constant difficulties while implementing new technology to improve customer service delivery. Changes in managerial support, technical abilities, and competences are thought to be the main barriers to deploying new technology.

2.3 Operational efficiency definition

Operational efficiency are the operations that keep health systems functioning and providing patient care. Health systems must be operationally effective in order to provide high-quality, appropriate care. Health systems' administrative, financial, legal, and clinical activities are referred to as healthcare operations Given how crucial operations are to the provision of healthcare, forward-thinking businesses constantly strive to improve them.. Leading thinkers in the field of healthcare operational improvement have tackled issues such waste reduction, resistance to change in processes, hospital capacity constraints, and challenging project management. The benefits of analytics-driven and -measured improvements, as well as holistic methods that target improvement on an organizational level, are some of the solutions and lessons that may be learnt from these findings.

There is a positive relation between changes in operational efficiency and changes in current and future profitability (BOK BAIK). By, getting rid of resources that are being squandered because of overcapacity in a private cloud, operational efficiency may be increased (Bauer, 2018). In the textile and clothing sector, operational efficiency has long been seen as a critical component of strategic decision-making. Operational efficiency in the context of the current study refers to the emphasis on cost management when conducting business operations as a competitive advantage. Operational effectiveness has been and continues to be a key competitive factor in the inventory-intensive garment sector, despite the fact that it does not, by itself, make up a coherent company plan (moore, 2002).

2.4 Prior study

This section highlight the prior study pertaining management information system and operational efficiency across industries generally and private healthcare system particularly.

A previous study or prior study is one that has been released and that reports the conclusions of earlier research. This might imply that the writers sought to address a particular research issue or investigated a certain hypothesis or the principles of the theory. Although research findings are occasionally additionally made accessible as stand-alone monographs, independent reports, novels, or book chapters, peer-reviewed journal articles represent the bulk of studies' publications.

Table 1. summary of some researches

author	method	theory	context	Finding	discussion
Narasimhaiah Gorla, Toni M. Somers, Betty Wong 2010	Quantitative	IS success models using the linkages between system quality, information quality, and organizational effect.	Private organization	They found that system, information, and service quality had substantial direct and indirect organizational effects.	The current study looks at the link between organizational influence and IS quality across time.
Muareen aching 2015	Quantitative	The overarching idea, which was backed by the technological acceptance theory, served as the foundation for this investigation.	Administrative sector	This study's guiding theory, which was backed by the technological acceptance theory, was indicated.	The study found a substantial positive association between the information systems for finance, procurement, marketing, and

					human resource management.
Getachew Alene 2018	Quantitative	role of management information system in enhancing effectiveness.	Employees inside an organization	By giving managers timely, reliable, and consistent information, Mining and Manufacturing Information Systems (MIS) plays a crucial role in helping them make wise decisions. The primary issues with MIS include data duplication, processing delays, data discrepancies, and other issues that primarily impair its efficacy.	how the information runs in the organization and evaluate organizational performance and effectiveness.
Ahlia University, Manama, Kingdom of Bahrain 2011	Quantitative	management information systems are used to make effective decisions of long and short term	Banking sector	An integrated user-machine system known as MIS is thought to be one that gives	MIS was largely utilized to improve tactical planning and long-term

		planning in two financial organizations		information to operations, management, and decision-making processes at different levels of a company.	strategic planning (short term). The study also showed that Tactical Planning has the least MIS implementation. The link between the factors and the banks' decision-making process was examined using correlation testing.
Ebikebina Tantua 2020	Quantitative	humans generate knowledge and meaning from an interaction between their experiences and their ideas	Private organization	According to a research, management information systems must be used in print media operations if they are to operate as productively as possible. According to the study, increased	By providing operational data for planning, scheduling, and control, MIS enables junior management to function as efficiently as possible and supports them further in operational decision-making.

				operational effectiveness has a significant influence on businesses' profit margins as well as the scope and complexity of print media.	Additionally, it aids middle management in short-term planning, target-setting, and operational control.
Anthony Virtue, thierry Chaussalet, John Kelly 2013	Quantitative	factors behind the slow uptake of healthcare simulation models and examine whether academic healthcare simulation modelers generally failed to create simulations that accurately represent accepted real healthcare difficulties.	Health care	How to increase the operational efficiency of the NHS is the main political concern right now. According to Simon Tisdall's article for the BBC's HARDtalk program on the issue, the academic community has to be more aware of the practical demands of stakeholders in	links between healthcare planning and the healthcare stakeholders

				the health sector.	
Thomas B. Gregory, PharmD, BCPS, DASPE, CPE 2013	quantitative	A strong morphine analog called hydromorphone has long played a significant role in pain therapy and is recommended in a number of worldwide pain management recommendations.	Health care	IR hydromorphone ER has a greater risk of misuse than hydrocodone, oxycodone, or hydropthalate hydroxyzine, according to a study using data from drug rehab centers in the United States.	Extended-release hydromorphone may offer the advantages of long-acting hydromorphone (continuous pain management) while lowering the dangers of overuse and maintaining safety. The present hydromorphone extends-release formulation may offer the better pain management and improved quality of life that are connected to such a medication.

In this table it shows all the needed information about some of the references used in this research.

In (Narasimhaiah Gorla, Toni M. Somers, Betty Wong 2010) it is discussed that Based on the concept that variance in, they contend in this study that there are connections between system quality, information quality, service quality, and organizational effect. Variations in IS quality can be used to address organizational implications. They contend that the primary intermediary between system quality and organizational influence is information quality. Meanwhile in (Muareen aching 2015) It examines how the information systems for finance, procurement, marketing, and human resource management are positively and significantly related.

Additionally, it is said by (Getachew Alene 2018) that managers need fast, reliable, and consistent information in order to make wise judgments.. The absence of computer professionals and a lack of funding for operations are the biggest obstacles to using MIS. The use of MIS has a significant impact on personnel' rising operational performance. Employee satisfaction with the role of MIS in day-to-day operations of the organization is modest.

As it is said by (Ahlia University, Manama, Kingdom of Bahrain 2011) In banks, MIS was mostly utilized to improve long-term strategic planning, as opposed to tactical planning, which did not appear to influence decision-making. Regression analysis showed that just one variable, strategic planning, can fully explain the variation in the bank's decision-making process. Thusly used correlation tests look at how the two variables are related.

(Ebikebina Tantua 2020) Mentioned that By supplying the operational data for planning, scheduling, and control, and assisting them further in decision making at the operations level, MIS enables junior management staff to function with the most efficiency possible. Additionally, it aids middle management in short-term planning, target-setting, and operational control. According to studies, businesses may increase customer happiness and profitability by learning how to use MIS. And It is mentioned by (Anthony Virtue, thierry Chaussalet, John Kelly 2013) that The academic community should produce a greater proportion of Class A papers, as determined by

Eldabi, and be more in tune with the demands of health stakeholders in the real world (2009). The health industry as a whole has to be more receptive to concepts from other industries, such simulation modeling and lean. Health planners must increase their capacity to benefit from their connections to health stakeholders and play a bigger role in serving as a bridge between the simulation and the healthcare industry.

It is found by (Thomas B. Gregory, PharmD, BCPS, DASPE, CPE 2013) that The use of hydromorphone, a morphine analogue that is more powerful and lipid-soluble than hydrocodone, to treat moderate to severe pain has a long history. Hydromorphone has a well-established place in the treatment of surgical pain, noncancer pain, and chronic pain in both parenteral and oral forms. Researchers at the University of Pennsylvania's Perelman School of Medicine believe that an ER hydromorphone formulation that is resistant to misuse and is not connected to dose-dumping has potential for patients who require ongoing oral pain treatment. Modern pharmacogenetic and pharmacogenomic testing may be able to anticipate the reactions of specific patients based on the genetic makeup of populations of opioid receptor subtypes.

2.5 Research framework

Existing research on management information systems and organizational operational efficiency found a beneficial relationship between these systems and business performance (Ali Parto, 2016). It is also argued by (Narasimhaiah Gorla Toni M. Somers, 2010) that The main objectives of management information systems are to boost efficiency and productivity, reduce waste, promote continuous improvement, reduce duplication of effort and bureaucracy, and enhance internal and external communication.

Similarly, (A. Spano, 2011) and (Jean Zoa, 2016) emphasize that The most trustworthy information source for managerial decision-making is provided by management information systems. Systems for enterprise resource planning can help with business process reengineering and timely decision-making. The research showed that by integrating management information systems, decisions about the production of products and services may be made more quickly with fewer mistakes. The research also showed that managers can gather information, evaluate it, interpret it, and come to strategic decisions that would improve operational effectiveness and efficiency.

It is believed that academics have given little attention to the private healthcare sector despite substantial studies being undertaken locally and worldwide; hence, the relevance of this study is to unfold the research gaps. Thus, This study is to determine the relationship between management information systems and operational efficiency. Also, This research aims to explain user perspectives on information availability and utilization inside one specialized healthcare institution using a management information system.

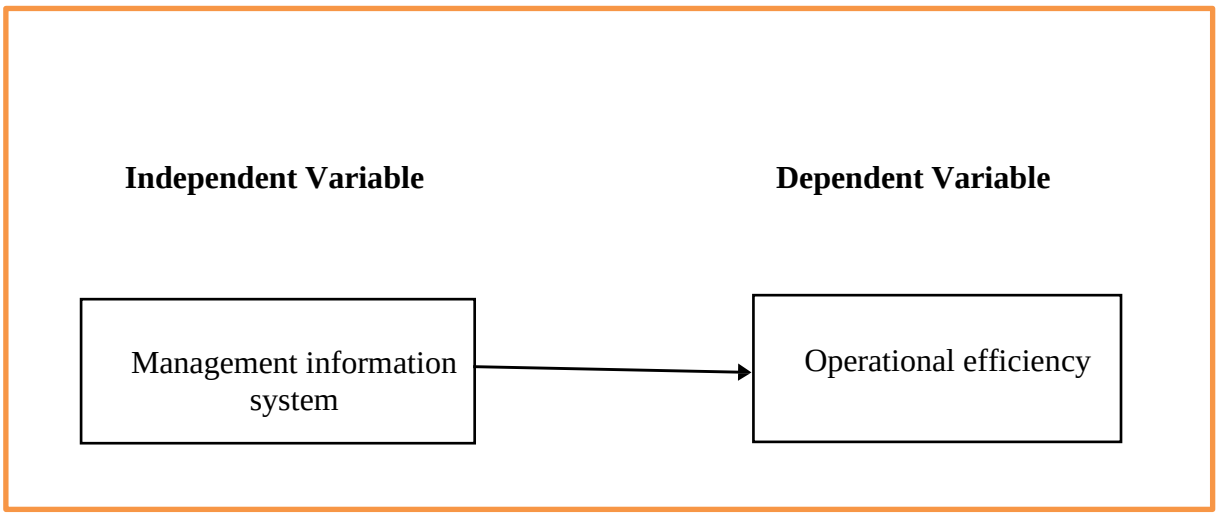

Figure 2.1 Research Framework

The conceptual framework is developed in order to determine the relationship between management information system and operational efficiency. Evidently it is seen that MIS plays a measure role in healthcare sector a specially operational efficiency as it can be seen through what explained in the previous points of the chapter.

2.6 Summary

The literature study on management information systems and operational effectiveness was covered in this chapter. Moreover, the theory and the research framework. The study's procedures, data analysis, sample size, and data collecting will all be covered in detail in chapter three.

CHAPTER 3

RESEARCH METHODOLOGY

3.1 Introduction

Research methodology is one of the main pieces of each research as in this part; researchers clarify the procedures of data assortment, data examination, diagram populace of the review, test size alongside other significant parts of the strategies. This term can be characterized as the way the way that researchers fundamentally configuration research to guarantee substantial and dependable outcomes which address the goals and points of the review (Jansen, 2020).

3.2 Research Design

Research design is a crucial element that encompasses the methodologies and strategies employed for the collection, measurement, and analysis of data. It is intrinsically linked to the core research questions that this study aims to address, ensuring that the approach taken is both systematic and rigorous. This study adopts a quantitative research methodology, emphasizing the importance of numerical data and statistical analysis in drawing meaningful conclusions.

This phase will delve deeper into the nature and type of study, providing a thorough explanation of the quantitative approach and its relevance to the research objectives. It will outline the unit of analysis, specifying the primary entities that will be examined to draw inferences about the broader population. Additionally, this section will define the study population, detailing the specific group of individuals or entities from which data will be collected.

Moreover, the phase will discuss the sampling technique employed, describing the method used to select a representative sample from the population. This will include an exploration of various sampling methods, such as random sampling, stratified sampling, or convenience sampling, and justify the choice made for this particular study. By addressing these elements, the research design phase will provide a comprehensive framework that underpins the entire research process, ensuring that the data collected is robust, reliable, and valid (Jankowicz, 2016).

3.3 Population and Sampling

The population of this study is the employees in Sulaymaniyah's private healthcare sector. And The sampling techniques that will be applied is Simple Random Sampling. Besides, in selecting the sample for answering the questionnaire, the selection has been done using random number generator. Which Simple random sampling (SRS), a method for probability sampling, includes choosing people at random from a population. Every person in the population has the same chance of being selected. Typically, this method yields unbiased, representative sample.

Simple Random Sampling will be used in this research because All the units in the population have an identical probability of being chosen using the simplest random sample.

3.4 Data Collection Method

Data collection is the systematic process of gathering facts, figures, and materials essential for the study's ongoing investigation and analysis. This critical phase involves identifying and employing appropriate methods to obtain the necessary information that will address the research questions and hypotheses. For this study, the primary method of data collection involves the distribution and utilization of questionnaires, which are designed to acquire both quantitative and qualitative data.

To obtain the quantitative data needed for this research, carefully structured questionnaires were distributed to the selected participants. These questionnaires are instrumental in capturing numerical data that can be statistically analyzed to reveal patterns, trends, and correlations pertinent to the study's objectives. In addition to quantitative data, the questionnaires are also designed to collect qualitative data, providing deeper insights into the participants' perspectives, experiences, and attitudes.

The use of questionnaires as the major data collection method is justified by their ability to reach a broad audience efficiently, ensuring that a large and representative sample can be obtained. This approach allows for the standardized collection of data, facilitating the comparison and contrast of responses across different demographic groups. The design of the questionnaire has been carefully crafted to include a mix of closed-ended questions for quantitative analysis and open-ended questions to gather richer, qualitative insights.

By employing questionnaires, this project aims to harness the strengths of both quantitative and qualitative data, providing a comprehensive understanding of the research topic. The collected data will form the foundation for subsequent analysis, interpretation, and discussion, ultimately contributing to the study's overall findings and conclusions (Hox, 2005).A data collection methodology is a set of ways for collecting data relating to a study's variables. The primary sources were used to collect data for this quantitative analysis. After evaluating various methods of primary data collecting, it was determined that a questionnaire utilizing Google Forms was the best way to take it. The variables of the study were considered when developing the

questionnaire. Furthermore, prior to disseminating the questionnaire, consent from the university administration was required. After these procedures are finished, the questionnaire will be distributed to the chosen respondents. This method of data collection will allow the data to be gathered.

3.5 Questionnaire development

In this section the researcher develop the questionnaire about concepts of management information system and operational efficiency in healthcare system.

Overall, the questionnaire will include three main sections as demonstrated below.

3.5.1 Section A: demographic information

Referring to the respondents' background information status and biological data is the demographic section information. This section's objective is to compile data about the responders. This section includes background data such as gender, age, work state, and education level.

3.5.2 Section B: management information system

Section B in this questionnaire measures effectiveness of the management information system in the workplace.

Table 3.1 Likert Scale

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1	2	3	4	5

the questionnaire will be measured by the Five Likert Scale (1= Strongly Disagree to 5= Strongly Agree).

Table 3.2 management information system

Variable	code	item	source
Management information system	MIS1	Information system make it easier to analyze client demands and wishes quickly.	(okeyo, 2015)
	MIS2	Systems information enable my organization to scan the business environment before producing or serving goods	
	MIS3	Management information Systems upgrade constantly raises customer satisfaction and workplace effectiveness	
	MIS4	Management information Systems allows for early planning of how to meet client demands	
	MIS5	Management information Systems facilitates timely evaluation of customersatisfaction	
	MIS6	Management information Systems profile customer	

		information based on specificneeds	
	MIS7	The management information system provided helps in budget implementation	
	MIS8	Management information system helps to make effective decision making?	(Alene, 2018)

3.6 Pilot study

A pilot research study has been conducted to assess the reliability and validity of the instruments being employed in the main study. This preliminary phase is essential to ensure that the tools and methods used for data collection are both effective and accurate. During the pilot study, it is crucial to identify any deficiencies, errors, or defects in the instruments, allowing for necessary adjustments and refinements before their application in the actual research. By doing so, the study aims to enhance the overall quality and credibility of the research findings.

Within this pilot research, two private hospitals were selected as the focus of the study: Anwar Shekha Medical City and Smart Health Tower. These institutions were chosen due to their relevance and potential to provide meaningful data for the research objectives. A total of nearly 35 respondents were selected from the workforce of both hospitals to participate in the pilot study. These participants were carefully chosen to represent a diverse cross-section of the hospital staff, ensuring a comprehensive assessment of the instruments.

One of the primary instruments examined during the pilot project was the questionnaire, which is intended to be the major data collection tool in the main study. The questionnaire was distributed among the selected respondents, who were asked to provide feedback on its clarity, comprehensiveness, and relevance. This feedback was

invaluable in identifying any ambiguities, confusing questions, or other issues that could potentially compromise the quality of the data collected in the actual study.

3.7 Data analysis method

The Statistical Package for the Social Sciences (SPSS) software was utilized to analyze and transform the gathered raw data into valid and trustworthy information, providing critical findings for this study. This robust statistical tool enables researchers to perform a wide range of data analyses, ensuring that the results are both accurate and reliable. By employing SPSS, the study could systematically organize and interpret the data, making it possible to draw meaningful conclusions that address the research questions and objectives.

The use of SPSS facilitated the construction of responses to previously identified study subjects and hypotheses. The software's advanced capabilities allowed for comprehensive data manipulation, including cleaning, coding, and tabulating the data, which are essential steps to ensure the integrity of the dataset. Additionally, SPSS provided various statistical functions and procedures that enhanced the depth and scope of the analysis.

To explore the relationship between the independent and dependent variables, both descriptive and inferential statistical techniques were employed. Descriptive statistics, including measures of central tendency and variability, were used to summarize and describe the main features of the data, providing a clear and concise overview of the sample characteristics. These techniques helped in understanding the basic patterns and trends within the data.

Inferential statistics were then applied to make predictions or inferences about the broader population based on the sample data. Techniques such as regression analysis, correlation analysis, and hypothesis testing were conducted to examine the strength and direction of relationships between variables. These methods enabled the

study to determine the significance and impact of the independent variables on the dependent variables, thereby uncovering important insights and implications.

By leveraging the powerful analytical capabilities of SPSS, the study ensured that the findings were not only valid and reliable but also comprehensive and insightful. The combination of descriptive and inferential statistics provided a robust framework for analyzing the data, ultimately contributing to a deeper understanding of the research topic and supporting the overall conclusions of the study (Guetterman, 2019).

3.7.1 Descriptive Analysis

By constructively defining, showing, or summarizing data points, descriptive analysis helps in the formation of patterns that satisfy all of the demands of the data. one of the most important steps in the analysis of statistical data. In order to prepare for further statistical investigation, it provides a summary of the data distribution, aids in the identification of errors and outliers, and highlights similarities among variables.

Table 3.3 Frequency Mean Analysis

Mean Score
1.00 — 2.33
2.34 — 3.67
3.68 — 5.00

Source: Zikmund, Babin, Carr & Griffin (2010)

3.7.2 Peason's correlation Analysis

In fulfilling the research objective 3 and answering research question 3, correlation analysis will be deployed in establishing the connection between management information system and operational analysis. Correlation approaches

facilitate the identification of the importance, consistency, and movement in a relationship. of the independent variables and dependent variable.

Correlation coefficients can vary from -1.00 to 1.00, with 0 indicating that there is no link between the variables. The association value of 1.0 meant that the link had an ideal positive association, while the association value of - 1.0 meant that the connection had an optimal negative association. The correlation between these variables is between 0.01 and 0.09, which is extremely low, the correlation between 0.10 and 0.29 is considered low, the correlation between 0.30 and 0.49 is considered moderate, and the correlation between 0.50 and 0.69 is considered high.

Table 3.4 Interpretation of strength (correlation)

Correlation value (r)	strength of relationship
± 0.70 or higher	Very high
± 0.50 to ± 0.69	High
± 0.30 to ± 0.49	Moderate
± 0.10 to ± 0.29	Low
± 0.01 to ± 0.09	Very low
0.00	No relationship

Source: Pallant (2013)

3.8 Summary

The dependability of the study and the analysis that will be utilized in the following chapter depends on the outcomes from this chapter, thus the correctness and success of this phase in the research are highly crucial. Before giving it to the sample, its validity and reliability will be tested. The process of data analysis has also been discussed.

CHAPTER 4

DATA ANALYSIS

4.1 Introduction

The aim of this chapter is to analyze the collected data and interpret the findings in fulfilling the research objectives and answering the research question throughout the obtained data. SPSS Statistics Software is used for frequency analysis tables of demographic data, reliability test, mean score analysis for the management information system and operational efficiency, and correlation analysis in understanding the relationship between both independent and dependent variable of this study.

4.2 Demographic Analysis

The demographic analysis is a critical section in the data analysis chapter, as it provides valuable insights into the characteristics of the study's participants. Demographic data, such as age, gender, education level, and employment status, can significantly influence the outcomes and interpretations of research findings. By examining these variables, researchers can better understand the context and diversity of the sample, which in turn can lead to more nuanced and accurate conclusions.

In this type of analysis, frequency tables will be employed to organize and present the demographic data clearly and concisely. These tables will display the distribution of various demographic characteristics among the participants, allowing for easy comparison and interpretation of the results. Frequency tables are particularly useful for identifying patterns and trends within the data, as well as highlighting any notable differences or similarities among different demographic groups.

For this research, a total population of 115 individuals was identified, and an equivalent number of samples were selected to ensure a comprehensive representation of the population. To select the sample, a random number generator was used, which helps in minimizing selection bias and enhancing the generalizability of the findings. This method ensures that each individual in the population has an equal chance of being selected, thereby increasing the reliability of the sample.

A total of 115 questionnaires were distributed to the selected sample. Given the potential for a low response rate, the research design accounted for this by distributing a sufficient number of questionnaires to maximize the likelihood of obtaining a representative number of responses. Out of the 115 distributed questionnaires, 89 were returned and deemed usable for analysis. These returned questionnaires provide the data for both the independent variables (IV) and dependent variables (DV) of the study.

The demographic analysis of the 89 respondents will shed light on the diversity and characteristics of the sample, providing a foundation for interpreting the study's findings. By understanding the demographic makeup of the respondents, the research can better contextualize the results and explore how different demographic factors may influence the relationships between the variables under investigation. This comprehensive demographic analysis will thus contribute to a more thorough and insightful understanding of the research topic.

4.2.1 Respondent's Age

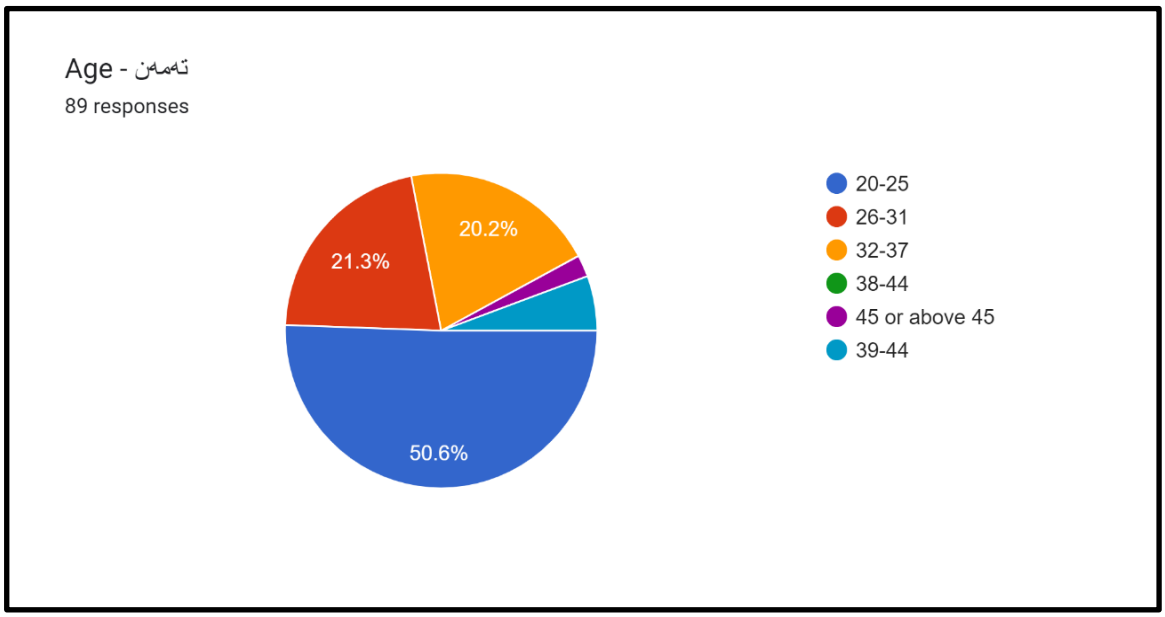

Figure 4.1 Respondent's Age

From the age respondent's frequency Figure 4.1, 50.6% of respondents were aged between 20-25 years, 21.3% were between 26-31 years, 20.2% were between 32-37 years, 5.6 % were between 39-44 years, and 2.2% were 45 or above.

Table 4.1 statistical table for respondents age

Age - 10&#تەمەن;

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	45	50.6	50.6	50.6
	2	19	21.3	21.3	71.9
	3	18	20.2	20.2	92.1
	4	5	5.6	5.6	97.8
	5	2	2.2	2.2	100.0
	Total	89	100.0	100.0	

The distribution of age groups in a sample is shown in the table. An explanation of the data is given below:

- Valid: The various age groups found in the sample are represented in this column. Frequency: The number of participants in each age group is shown in this column.
- Percent: This column displays the proportion of participants in each age group out of the 89 participants in the overall sample.
- Valid Percent: The proportion of participants in each age group out of all valid replies is shown in this column. The valid percent equals the percent column since no missing or incorrect replies were provided.
- Cumulative Percent: This column displays the overall participation rate for each age group. As you proceed down the table, it gives you an overview of the distribution.

Here is a breakdown of the age categories based on the table:

Age group 1 had 45 individuals, which accounts for 50.6% of the sample as a whole.

Age group 2: This age group included 19 individuals, representing 21.3% of the sample as a whole.

Age group 3 had 18 individuals, which accounts for 20.2% of the sample as a whole.

Age group 4: This age group has 5 individuals, or 5.6% of the sample as a whole.

Age group 5 has 2 individuals, which accounts for 2.2% of the sample as a whole.

The first age group (1) accounts for 50.6% of the entire sample, the first two age groups (1 and 2) combined comprise 71.9%, and so on until all age groups are included, reaching 100%, according to the cumulative percent column.

Understanding the demographics and age representation in the data is made possible by these statistics, which give a broad picture of the age distribution within the sample.

4.2.2 Respondent's Gender

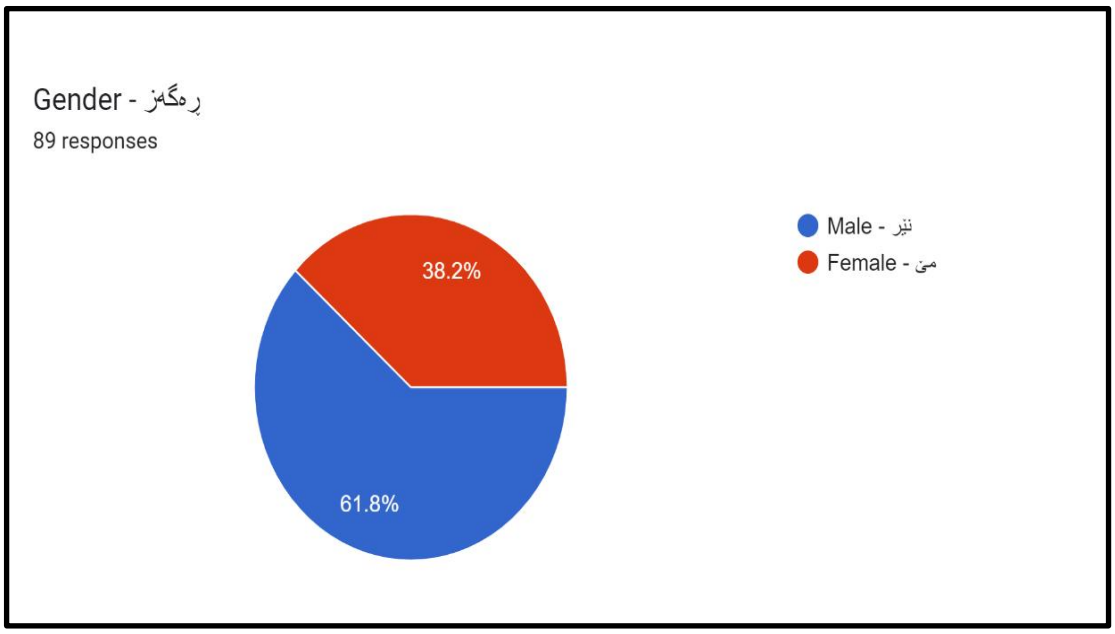

Table 4.1 Respondent's Gender

From the gender respondent's frequency figure 4.2, 38.2% of respondents were females and 61.8% of the respondents were male.

Table 4.2 statistical table for respondents gender

Gender - ڕەگەز

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	55	61.8	61.8	61.8
	2	34	38.2	38.2	100.0
	Total	89	100.0	100.0	

The gender distribution in a sample is shown in the table. An explanation of the data is given below:

- Valid: This column displays the various gender groups found in the sample.
- The number of participants in each gender category is shown in this column.
- Percent: This column displays the proportion of participants in each gender group out of the 89 participants in the overall sample.
- Valid Percent: The proportion of participants in each gender group among all valid replies is shown in this column. The valid percent equals the percent column since no missing or incorrect replies were provided.
- The cumulative proportion of participation up to each gender category is displayed in this column.

Here is a breakdown of the gender categories based on the table:

There are 55 individuals in gender category 1, or 61.8% of the sample as a whole.

34 individuals make up gender category 2 and represent 38.2% of the sample as a whole.

The first gender category (1) makes up 61.8% of the entire sample, according to the cumulative percent column, while the second gender category (2) makes up the remaining 38.2%.

These statistics offer a summary of the sample's gender distribution, enabling comprehension of the gender representation in the data.

4.2.3 Work state

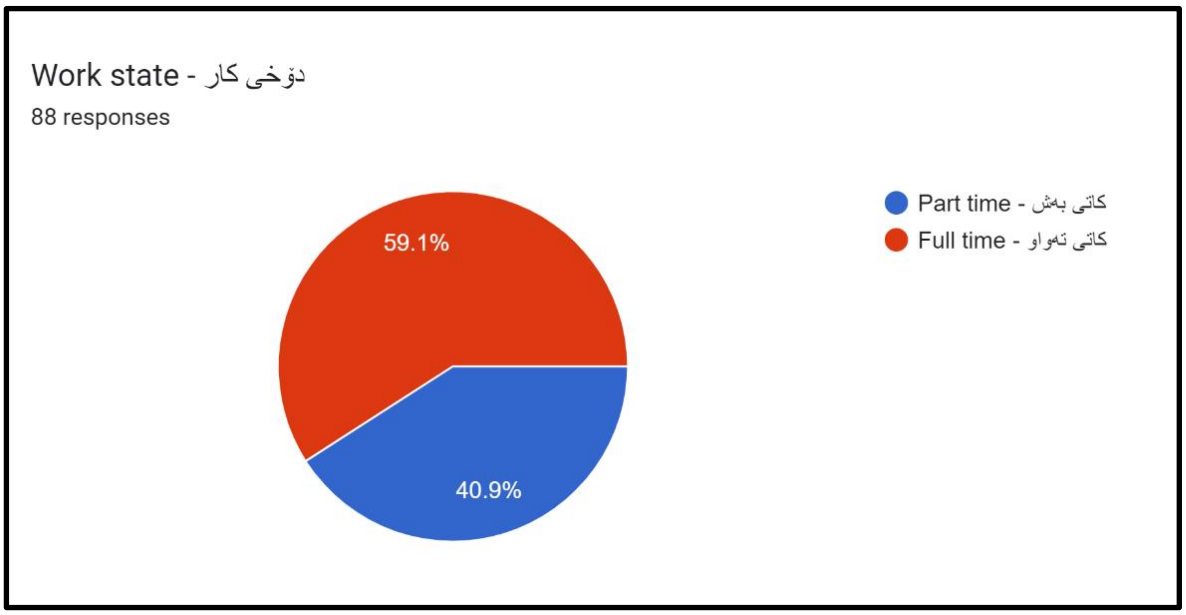

Table 4.2 Work state

From the working state frequency figure 4.3, 40.9% of the respondents were answered to be part time while the remaining 59.1% answered to be full time.

Table 4.3 statistical table for respondents work state

Work state - دۆخی کار

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	36	40.4	40.9	40.9
	2	52	58.4	59.1	100.0
	Total	88	98.9	100.0	
Missing	System	1	1.1		
Total		89	100.0		

The distribution of work states in a sample is shown in the table. An explanation of the data is given below:

- Valid: This column displays the various work state classifications found in the sample.
- Frequency: The number of participants in each category of work state is shown in this column.

- Out of the overall sample size of 89, this column displays the percentage of participants in each work state category.
- Valid Percent: Out of all valid replies, this column shows the proportion of participants in each work state group. The valid percent is determined using the valid replies (88), as there is only one missing response that is indicated.
- The cumulative proportion of participants up to each work state category is displayed in this column.

Here is a summary of the various work state types based on the table:

Category 1 of work states consists of 36 participants, or 40.4% of the sample as a whole.

52 people make up the second group of work states, or 58.4% of the sample as a whole.

According to the cumulative percent column, the first work state category (1) makes up 40.9% of the entire sample, while the second work state category (2) makes up the remaining 59.1%.

One missing response, classified as "System" and accounting for 1.1% of the entire sample, is noted in the "Missing" row.

These statistics give a general picture of the distribution of work states within the sample, enabling comprehension of how various work states are represented in the data.

4.2.4 Education level

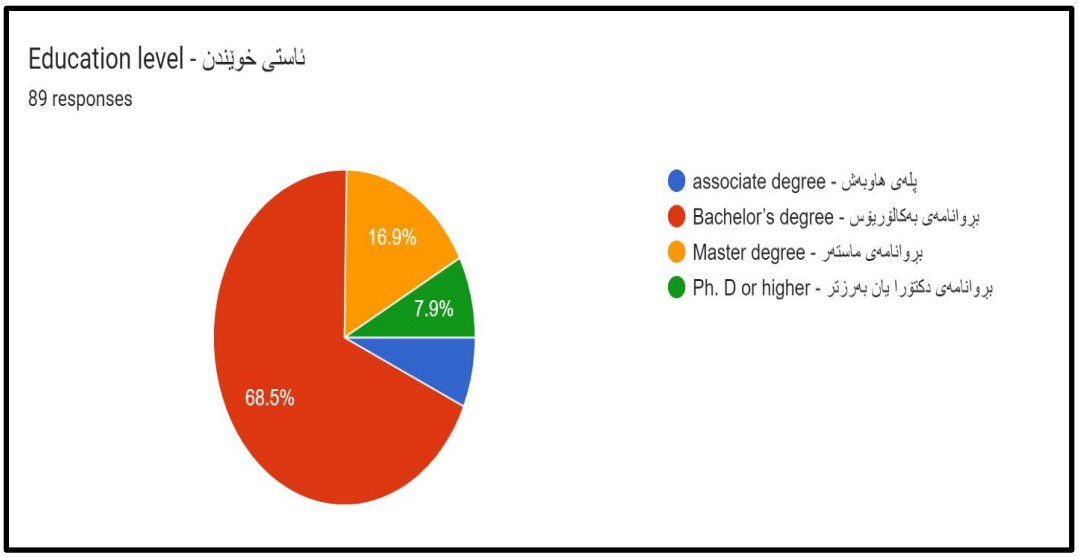

Table 4.3 Education level

From the education level figure 4.4, 6.7% of respondents hold a associate degree, 68.5% of respondents hold a bachelor's degree, 16.9% hold a master degree, and 7.9% hold a doctorate degree.

Table 4.4 statistical table for respondents educational level

Education level - 10&#ئاستی خوێندن;

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	6	6.7	6.7	6.7
	2	61	68.5	68.5	75.3
	3	15	16.9	16.9	92.1
	4	7	7.9	7.9	100.0
	Total	89	100.0	100.0	

The distribution of educational levels in a sample is shown in the table. An explanation of the data is given below:

- Valid: This column displays the various categories of education level that were found in the sample.

- The number of participants in each category of education level is shown in this column.
- Percent: This column displays the proportion of participants in each category of educational attainment out of the 89 participants in the overall sample.
- Valid Percent: Out of all valid replies, this column shows the proportion of participants in each category of education level. The valid percent equals the percent column since no missing or incorrect replies were provided.
- Cumulative Percent: The proportion of participants who fit each category of education level is displayed in this column cumulatively.

Here is a breakdown of the categories for education level based on the table:

Category 1 for educational attainment had 6 people, or 6.7% of the sample as a whole.

Category 2 for educational attainment includes 61 people, or 68.5% of the sample as a whole.

Category 3 for educational attainment had 15 members, or 16.9% of the sample as a whole.

Category 4 for educational attainment had 7 people, or 7.9% of the sample as a whole.

The first education level category (1) accounts for 6.7% of the entire sample, the first two education level categories (1 and 2) combined constitute 75.3%, and so on until all education level categories are included, reaching 100%, as shown by the cumulative percent column.

These statistics give a general picture of the distribution of educational attainment within the sample, enabling comprehension of how education level is reflected in the data.

4.3 Descriptive statistics (Mean Score Analysis)

Descriptive Statistics is performed to in addition give an explanation for the acquired records and help and summarize the outcomes of this study. Aiming to

fulfill research objective 1 and 2, mean score analysis is performed. Full info concerning the findings can be proven in the subsequent subsection.

4.3.1 Objective 1:To examine the level of usage of management information systems in Sulaymaniyah's private sector

Table 4.5 Mean Score Statistic of management information systems

Descriptive Statistics

Items	N	Mean	Std. Deviation
MIS1	89	3.97	.745
MIS2	89	4.06	.844
MIS3	89	4.02	.839
MIS4	89	3.98	.825
MIS5	89	4.06	.831
MIS6	89	3.94	.729
MIS7	88	3.92	.925
MIS8	89	4.10	.754
Total		4.00	0.81

In the table, eight factors connected to management information systems and their effects on various facets of a company are given descriptive data.

According to the table it shows that Question 7 has the lowest mean score of (3.92) and standard deviation of (.925), and question 8 has the highest mean score of (4.10) and standard deviation of (.754). and in total mean of (4.00) according to (zikmund, 2010) as it is mentioned the level is high.

It is simpler to swiftly examine client requests and preferences thanks to information systems:

N (size of sample): 89 MIS1

Mean: 3.97

0.745 Standard Deviation

Before creating or delivering items, my corporation may examine the business environment thanks to a management information system:

N: 89 MIS2

Mean: 4.06

0.844 Standard Deviation

The ongoing improvement of management information systems boosts worker productivity and customer satisfaction:

N: 89 MIS3

Mean: 4.02

0.839 Standard Deviation

Early planning of how to satisfy client requests is made possible by management information systems:

N: 89 MIS4

Mean: 3.98

0.825 as the standard deviation

The timely assessment of customer satisfaction is made easier by management information systems:

N: 89 MIS5

Mean: 4.06

0.831 Standard Deviation

Based on particular requirements, management information systems profile consumer information:

N: 89 MIS6

Mean: 3.94

0.729 Standard Deviation

The management information system made available aids in carrying out the budget:

N: 88 MIS7

Mean: 3.92

0.925 as the standard deviation

An efficient decision-making process is aided by management information systems:

N: 89 MIS8

Standard deviation: 0.754 Mean: 4.10

There were 88 valid instances with complete data for all the variables, according to the "Valid N (listwise)" statistic.

These descriptive statistics reveal the mean and standard deviation of each variable's response's central tendency and dispersion, respectively.

To determine how private healthcare organizations in the area have embraced and integrated MIS into their everyday operations, it is important to examine the amount of MIS usage in Sulaymaniyah's private healthcare sector. This goal is to give a thorough knowledge of how the MIS is currently implemented and used in these hospitals.

The research findings show that Sulaymaniyah's private healthcare industry makes extensive use of management information systems after undertaking data gathering and analysis. This indicates that private healthcare businesses in the area have made using MIS a key part of their business practices. The results may provide light on a number of MIS-related factors, including the systems used (such as electronic health records, data analytics tools, and inventory management systems), the degree of departmental integration, and the level of employee involvement with these systems.

The widespread use of MIS in Sulaymaniyah's private healthcare institutions is an indication that these organizations understand the value of utilizing technology to improve their operational effectiveness, decision-making procedures, and overall healthcare delivery. It shows that these companies have put money, time, and effort into developing and using MIS to help them carry out daily tasks and meet their objectives.

This information is useful because it demonstrates how successfully MIS was implemented in Sulaymaniyah's private healthcare industry. It can act as a baseline for other healthcare facilities in the area, giving them information about the advantages and possibilities of using MIS. The use and integration of MIS across the private healthcare sector may be further promoted with the help of policymakers and stakeholders, improving overall performance and results in healthcare delivery

4.3.2 Objective 2: To examine the level of operational efficiencies in sulaymaniyah's private healthcare sector

Table 4.6 mean score statistic of operational efficiency

Descriptive Statistics

	N	Mean	Std. Deviation
OE1	89	3.79	.885
OE2	89	3.64	1.025
rOE3	89	3.75	.870
OE4	89	3.65	1.129
OE5	89	3.92	.869
Total		3.75	0.96

The table gives descriptive data for five operational performance-related factors.

In this table it shows that the second question has the lowest mean score of (3.64) and standard deviation of (1.025), and the fifth question has the highest mean score of (3.92) and standard deviation of (.869). and in total mean of (3.75) according to (zikmund, 2010) as it is mentioned the level is high.

The data is broken out as follows:

Employee commitment to delivering high-quality services is shown in operational effectiveness:

N (size of sample): 89 OE1

Mean: 3.79

0.885 as the standard deviation

The expenses incurred show how efficiently my organization is running:

N: 89 OE2

Mean: 3.64

1.025 Standard Deviation

Low number of complaints suggests effective operation:

N: 89 OE3

Mean: 3.75

0.870 as the standard deviation

The number of employees assigned to a task reveals how effectively operations are carried out:

N: 89 OE4

Mean: 3.65

1.129 as the standard deviation

Low error and mistake rates represent operational performance:

N: 89 OE5

Mean: 3.92

0.869 Standard Deviation

There were 89 valid instances with complete data for all the variables, according to the "Valid N (listwise)" statistic.

These descriptive statistics reveal the mean and standard deviation of each variable's response's central tendency and dispersion, respectively.

To determine how efficiently private healthcare organizations in the area use their resources to provide high-quality healthcare services, it is important to look at the operational efficiency of the Sulaymaniyah private healthcare sector.

This objective is to determine how well these firms are able to streamline their operations, cut down on waste, and provide the results they want.

The research findings show that Sulaymaniyah's private healthcare sector has a modest level of operational efficiency after undertaking data collecting and analysis. While there is room for improvement, this indicates that private healthcare companies in the area have made commendable efforts to improve their operating procedures and simplify their workflows.

The Sulaymaniyah private healthcare organizations' moderate degree of operational efficiency suggests that they have put in place certain steps to increase their productivity and efficiency. It shows that these companies have put into practice tactics like process reengineering, performance monitoring, and quality improvement projects to streamline their business processes.

The modest level, however, also shows that there is opportunity for additional advancement in operational effectiveness within Sulaymaniyah's private healthcare sector. The findings could bring out certain places where inefficiencies still exist, as in the use of resources, patient flow control, appointment scheduling, or inventory control. various observations can be used as the foundation for specific interventions and projects aimed at enhancing operational effectiveness in various fields.

This information is important since it gives a thorough insight of the private healthcare industry in Sulaymaniyah's present operating effectiveness. Healthcare organizations may use it as a starting point to evaluate their own performance and pinpoint opportunities for development. Additionally, it can provide policymakers and healthcare leaders with information about the difficulties and opportunities that the industry is facing, allowing them to create plans and interventions to further improve operational effectiveness and, ultimately, the standard of care offered by Sulaymaniyah's private healthcare organizations.

4.4 Peason correlation Analysis

4.4.1 To examine the relationship between management information systems and operational efficiencies

Pearson correlation analysis has been conducted aiming to know the correlation between both variables which are management information system and operational efficiency in Sulaymaniyah. This analysis will support in fulfilling objective (3) in this research. Details will be shown in tables 4.3.

Table 4.7 Pearson Correlation.

Correlations

		MIS	OE
MIS	Pearson Correlation	1	.531**
	Sig. (2-tailed)		.000
	N	89	89
OE	Pearson Correlation	.531**	1
	Sig. (2-tailed)	.000	
	N	89	89

**. Correlation is significant at the 0.01 level (2-tailed).

The connection between the variables MIS and OE is significantly positive, according to the presented correlation table. A relatively high positive link exists between MIS and OE, according to the Pearson correlation coefficient of 0.531**. As it is seen from the table the correlation is (.531) so it means it falls under high correlation and the IV & DV are highly co-relater according to (pallant, 2013).

As one variable (MIS) rises, it is likely that the other variable (OE) will follow suit, according to the correlation coefficient of 0.531**. In contrast, the tendency is for the other variable to decrease as one increases. This association is unlikely to have happened by coincidence, as shown by the correlation coefficient of 0.531**, which is significant at the 0.01 level (2-tailed).

There were 89 data points available for each variable in the study, making the sample size for both variables 89.

It is significant to highlight that it is challenging to offer a more thorough explanation of the connection without further details regarding the nature of the variables MIS and OE, the context in which they are evaluated, and the particular data being examined. Furthermore, even while there is a connection between MIS and OE, this does not always suggest that one variable is what causes the other to change.

4.5 Summary

The data analysis carried out in this chapter is crucial for explaining and displaying the data gathered from the questionnaires. This process involves a series of systematic steps and statistical techniques to transform raw data into meaningful insights that address the research objectives established earlier in the study. By meticulously analysing the collected data, the study aims to provide a comprehensive understanding of the research variables and their interrelationships.

Firstly, descriptive frequency analysis was performed to summarize the basic features of the data. This analysis provides an overview of the respondents' characteristics and responses, highlighting the distribution and frequency of various demographic and survey variables. Frequency tables and graphical representations such as histograms and pie charts were used to visually present this information, making it easier to identify patterns and trends within the dataset.

Next, reliability testing was conducted to assess the consistency and dependability of the measurement instruments used in the study. This involved calculating Cronbach's alpha for the questionnaire items to ensure that the scales used were reliable and produced consistent results across different samples. High reliability is crucial for ensuring the validity of the conclusions drawn from the data.

Mean score analysis was also performed to determine the central tendencies of the survey responses. By calculating the average scores for various items and constructs, the study could identify the overall perceptions and attitudes of the respondents. This analysis helped in understanding the general trends and differences in responses, providing insights into the key factors influencing the study variables.

Additionally, Pearson correlation analysis was carried out to explore the relationships between the independent and dependent variables. This statistical technique measures the strength and direction of the linear relationship between pairs of variables. By examining the correlation coefficients, the study aimed to identify significant associations and potential causal relationships, shedding light on how different factors interact and influence each other.

Through these various analytical techniques—descriptive frequency analysis, reliability testing, mean score analysis, and Pearson correlation analysis—the chapter provides a detailed and rigorous examination of the data. This comprehensive approach ensures that the study's findings are robust, reliable, and aligned with the research objectives. The insights gained from this data analysis will form the foundation for the subsequent interpretation and discussion of results, ultimately contributing to the overall conclusions and recommendations of the study.

CHAPTER 5

CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

The primary objective of this chapter is to elucidate the findings of the study and provide suggestions for prospective investigations concerning the relationship between management information systems and operational efficiency in private hospitals located in Sulaymaniyah.

5.2 Discussion of Findings

The aim of this study is to establish the correlation between management information systems and operational efficiency in private hospitals within Sulaymaniyah. By presenting and elucidating these findings, it is anticipated that the research objectives will be achieved, addressing all three research questions effectively.

Objective 1: To examine the level of usage of management information systems in Sulaymaniyah’s private healthcare sector.

To determine how private healthcare organizations in the area have embraced and integrated Management Information Systems (MIS) into their everyday operations, it is important to examine the extent of MIS usage in Sulaymaniyah's private healthcare sector. This investigation aims to provide a comprehensive understanding of the current implementation and utilization of MIS in these hospitals, shedding light on the integration processes and operational impacts.

The research findings indicate that Sulaymaniyah's private healthcare industry makes extensive use of management information systems. Through rigorous data gathering and analysis, it becomes evident that private healthcare businesses in the region have incorporated MIS as a fundamental component of their business practices. This extensive usage underscores the strategic importance that these organizations place on MIS to enhance their operational effectiveness, streamline decision-making processes, and improve overall healthcare delivery.

Several key aspects emerge from the study regarding MIS-related factors. These include the types of systems used, such as electronic health records (EHR), data analytics tools, and inventory management systems. Understanding the specific technologies employed provides insights into how these hospitals manage patient information, analyze data for informed decision-making, and maintain efficient supply chains. The degree of departmental integration also highlights how various hospital departments, from administration to clinical services, are interconnected through MIS, promoting seamless communication and coordination. Furthermore, the level of employee involvement with these systems reflects the extent to which staff are trained and engaged in utilizing MIS for their daily tasks, influencing the overall effectiveness of these systems.

The widespread use of MIS in Sulaymaniyah's private healthcare institutions signifies a robust acknowledgment of the value of technology in enhancing operational performance. These organizations have invested substantial resources—time, money, and effort—into the development and deployment of MIS. This commitment illustrates their recognition of MIS as a crucial tool for achieving their strategic objectives, managing daily operations efficiently, and delivering high-quality healthcare services.

The successful implementation of MIS in Sulaymaniyah's private healthcare sector offers several practical implications. Firstly, it serves as a benchmark for other

healthcare facilities in the region, providing a model of how technology can be leveraged to achieve operational excellence. The insights gained from this research can guide other hospitals in understanding the potential benefits of adopting MIS, such as improved patient care, optimized resource management, and enhanced data-driven decision-making capabilities. Moreover, these findings highlight the importance of continuous investment in technology and training to maintain and enhance the functionality and effectiveness of MIS.

Policymakers and stakeholders can play a pivotal role in promoting the adoption and integration of MIS across the private healthcare sector. By supporting initiatives that facilitate the deployment of advanced information systems, they can contribute to the overall enhancement of healthcare delivery in the region. Encouraging policies that provide financial incentives, technical support, and training programs can help overcome barriers to MIS implementation and foster a culture of innovation and continuous improvement within healthcare organizations.

Objective 2: To examine the level of operational efficiency in Sulaymaniyah’s private healthcare sector.

To determine how efficiently private healthcare organizations in the area use their resources to provide high-quality healthcare services, it is important to look at the operational efficiency of the Sulaymaniyah private healthcare sector. This objective aims to assess how well these firms streamline their operations, minimize waste, and achieve their desired outcomes, thereby delivering effective and efficient healthcare services to the community.

The research findings indicate that Sulaymaniyah's private healthcare sector exhibits a modest level of operational efficiency based on comprehensive data collection and analysis. While there is substantial room for improvement, these findings suggest that private healthcare companies in the region have made commendable efforts to enhance their operational procedures and simplify their

workflows. This moderate level of efficiency reflects the initial steps taken by these organizations towards optimizing their resource utilization and improving their service delivery.

The analysis reveals that Sulaymaniyah private healthcare organizations have implemented various strategies to boost their productivity and efficiency. These strategies include process reengineering, where existing processes are analyzed and redesigned to eliminate inefficiencies and enhance performance. Performance monitoring is another crucial tactic, involving the continuous tracking and assessment of key performance indicators (KPIs) to ensure that operations are aligned with organizational goals. Additionally, quality improvement projects have been initiated to systematically improve healthcare services, focusing on patient safety, care quality, and operational efficiency.

Despite these efforts, the modest level of operational efficiency also highlights significant opportunities for further advancement within Sulaymaniyah's private healthcare sector. The findings can pinpoint specific areas where inefficiencies persist, such as resource utilization, patient flow management, appointment scheduling, and inventory control. For instance, inefficient use of resources might lead to higher operational costs and reduced service quality, while suboptimal patient flow management can result in longer waiting times and decreased patient satisfaction. Similarly, issues with appointment scheduling might lead to overbooking or underutilization of healthcare providers, and poor inventory control could result in either shortages or overstocking of medical supplies.

Addressing these inefficiencies requires targeted interventions and initiatives aimed at enhancing operational effectiveness in various domains. For example, improving patient flow management could involve adopting advanced scheduling systems and workflow optimization techniques to reduce waiting times and enhance patient experience. Enhancing resource utilization might require the implementation of lean management principles to minimize waste and maximize value. Furthermore,

robust inventory management systems can ensure that medical supplies are adequately stocked and efficiently used.

This information is crucial as it provides a comprehensive insight into the current operational efficiency of the private healthcare industry in Sulaymaniyah. Healthcare organizations can use these findings as a benchmark to evaluate their own performance and identify specific areas for improvement. By understanding where inefficiencies lie, they can develop and implement targeted strategies to enhance their operational efficiency, ultimately leading to better patient outcomes and higher service quality.

Moreover, this analysis can inform policymakers and healthcare leaders about the challenges and opportunities faced by the industry. Equipped with this knowledge, they can design and implement policies and interventions aimed at fostering greater operational efficiency within the sector. This might include providing incentives for the adoption of advanced technologies, supporting training programs for healthcare staff, and encouraging best practices in healthcare management.

Objective 3: To examine the relationship between management information systems and operational efficiency.

Investigating the influence of MIS adoption and usage on the general effectiveness of an organization's operations is the goal of studying the link between management information systems (MIS) and operational efficiency. This research aims to determine whether there is a relationship between improved operational performance and the adoption and utilization of MIS, and to what extent MIS contributes to enhancing various facets of organizational efficiency.

The findings of the data collection and analysis reveal a favorable correlation between operational efficiency and the adoption of management information systems. According to this research, organizations that successfully adopt and effectively utilize MIS exhibit higher levels of operational efficiency compared to those that use these systems sporadically or not at all. This positive correlation underscores the transformative potential of MIS in improving operational performance across different types of organizations.

Given that MIS and operational efficiency are positively correlated, it can be inferred that MIS plays a crucial role in streamlining organizational procedures, enhancing departmental communication and coordination, promoting data-driven decision-making, and optimizing resource allocation. Through the adoption of MIS, businesses can automate labor-intensive manual processes, thereby reducing waste and inefficiencies. Furthermore, MIS improves data accessibility and accuracy, enabling real-time monitoring and analysis of critical performance metrics. This allows organizations to respond swiftly to operational challenges and opportunities, fostering a more agile and responsive operational environment.

The study's findings advocate for the strategic investment in and utilization of MIS as a key tool for enhancing operational efficiency. They highlight the significant benefits of integrating advanced technology with operational processes. Organizations that prioritize the integration of MIS typically experience improvements in performance metrics such as reduced operational costs, enhanced productivity, and improved service delivery. These improvements are attributed to the ability of MIS to facilitate better resource management, optimize workflows, and support more informed decision-making.

These findings have broad applicability across various industries, including healthcare, manufacturing, finance, and more. In the healthcare sector, for example, MIS can improve patient record management, streamline appointment scheduling, and optimize inventory control, leading to better patient care and operational efficiency. In manufacturing, MIS can enhance supply chain management, improve production planning, and reduce downtime, contributing to increased productivity and cost

savings. In finance, MIS can support risk management, enhance customer relationship management, and improve regulatory compliance.

The research emphasizes the need for businesses to continuously evaluate their existing MIS capabilities and explore opportunities for further enhancement and integration. Recognizing the beneficial link between MIS and operational efficiency, organizations should make informed decisions regarding technology investments, training initiatives, and process optimization projects. This includes selecting appropriate MIS solutions that align with their specific operational needs, investing in employee training to maximize the use of these systems, and continuously monitoring and refining their operational processes to leverage the full potential of MIS.

Overall, this study contributes to the body of knowledge on the relationship between MIS and operational efficiency, underscoring the pivotal role that MIS plays in driving operational performance. The research's conclusions offer valuable insights for businesses aiming to harness the power of MIS to achieve operational excellence. By adopting and effectively utilizing MIS, organizations can gain a competitive edge, enhance their overall performance, and achieve sustained success in their respective industries.

Furthermore, the implications of these findings extend to policymakers and industry leaders who can support the widespread adoption of MIS by advocating for policies and initiatives that promote technological innovation and integration. By fostering an environment that encourages the use of advanced management information systems, stakeholders can help drive the overall efficiency and effectiveness of entire sectors, leading to broader economic and social benefits.

5.3 Implementation of the study

The implementation of management information systems (MIS) in private healthcare systems can offer both theoretical and practical benefits in terms of improving operational efficiency. Let's explore how MIS can help private healthcare systems in both theoretical and practical contexts:

Theoretical Benefits:

Enhanced Decision-Making: MIS provides timely and accurate information to healthcare managers, enabling them to make informed decisions regarding resource allocation, process improvements, and strategic planning. Theoretical models and frameworks, such as data-driven decision-making and evidence-based management, support the utilization of MIS to optimize decision-making processes.

Improved Communication and Collaboration: MIS facilitates seamless communication and collaboration among healthcare professionals, departments, and even different healthcare facilities. Theoretical perspectives, such as information sharing and knowledge management, emphasize the importance of effective communication for enhancing coordination, teamwork, and overall operational efficiency.

Streamlined Processes: Theoretical concepts such as business process optimization and workflow management highlight the potential of MIS to streamline healthcare processes. By automating tasks, reducing manual errors, and providing real-time data, MIS can help optimize workflows, leading to increased efficiency and productivity.

Practical Benefits:

Efficient Data Management: Implementing MIS allows private healthcare systems to collect, store, and manage vast amounts of patient data efficiently. Practical applications, such as electronic health records (EHR) and health information exchange (HIE), enable healthcare providers to access patient information in real-time, reducing paperwork, minimizing errors, and enhancing data accuracy.

Automation and Task Efficiency: MIS can automate various administrative and operational tasks, such as appointment scheduling, billing, inventory management, and

reporting. This automation reduces the administrative burden on healthcare staff, frees up their time for patient care, and improves overall operational efficiency.

Quality and Safety Improvements: MIS supports practical initiatives like clinical decision support systems and medication management tools, which help healthcare providers in making accurate diagnoses, prescribing appropriate treatments, and minimizing errors. This contributes to improved patient safety, enhanced quality of care, and better health outcomes.

Resource Optimization: With MIS, private healthcare systems can optimize resource allocation, including personnel, equipment, and supplies. Practical tools such as predictive analytics and demand forecasting enable healthcare managers to make data-driven decisions, ensuring the right resources are available at the right time and in the right quantity.

Performance Monitoring and Evaluation: MIS provides practical mechanisms for tracking, measuring, and evaluating key performance indicators (KPIs) in private healthcare systems. These KPIs, such as patient wait times, length of stay, and resource utilization, allow healthcare administrators to monitor performance, identify areas for improvement, and implement necessary changes to enhance operational efficiency.

By leveraging theoretical concepts and translating them into practical applications, the implementation of management information systems in private healthcare systems can lead to improved decision-making, streamlined processes, efficient data management, resource optimization, and better patient outcomes.This section will be further discussed regarding future recommendations pertaining to the research aspects..

5.4 Limitation of the study

One significant barrier encountered during the research process was the limited sample size and the unavailability of a larger sample of workers to answer the

questionnaire. This constraint posed several challenges in obtaining a comprehensive and accurate representation of the target population, which, in turn, potentially affected the generalizability of the findings. A smaller sample size inherently increases the risk of sampling bias, as the limited number of participants may not adequately reflect the diverse characteristics and experiences of the broader population. This sampling bias can skew the results, making it difficult to confidently extrapolate the findings to a wider audience.

Moreover, a reduced sample size diminishes the statistical power of the study. Statistical power is crucial for detecting true effects and relationships within the data. With fewer participants, the study may lack the sensitivity to identify significant differences or correlations, leading to a higher likelihood of Type II errors, where real effects go undetected. This limitation can hinder the ability to draw robust and reliable conclusions, as the findings may be more susceptible to random variation and less representative of genuine trends within the population.

Additionally, the smaller sample size restricts the capacity to conduct more detailed subgroup analyses and explore potential relationships and patterns within different worker demographics. Subgroup analyses are valuable for understanding how specific factors may vary across different segments of the population, such as age, gender, job type, or years of experience. With a limited number of respondents, the study may lack sufficient data to perform these analyses, thereby missing out on important insights that could inform targeted interventions and policies.

Despite these limitations, considerable efforts were made to ensure the validity and reliability of the data collected from the available sample. Rigorous measures were implemented to minimize biases and enhance the accuracy of the responses. These included careful questionnaire design, thorough pilot testing, and robust data validation procedures. However, it is acknowledged that future research should consider strategies to overcome this barrier, such as expanding recruitment efforts to reach a broader and more diverse pool of participants. This could involve leveraging online platforms, collaborating with organizations, or using incentives to encourage participation.

Furthermore, exploring alternative data collection methods, such as longitudinal studies or mixed-methods approaches, could provide richer and more comprehensive data. Longitudinal studies, for instance, allow for the tracking of changes over time, offering deeper insights into trends and causal relationships. Mixed-methods approaches, combining quantitative and qualitative data, can provide a more nuanced understanding of the research problem by capturing both statistical trends and contextual factors.

In conclusion, while the limited sample size posed significant challenges in this research, the findings still offer valuable contributions to the field. By acknowledging and addressing these limitations, future research can build on this work and strive for more comprehensive and generalizable results.

5.5 Suggestion of future studies

Future studies could incorporate more responses and expand the sample size of private hospitals included in the research to obtain a more representative and diverse dataset. This expansion would allow for a broader understanding of the relationship between management information systems (MIS) and operational efficiency across various hospital settings. A larger sample size would enhance the generalizability of the findings, providing insights that are more reflective of the entire population of private hospitals. Additionally, it would allow for more detailed subgroup analyses, enabling researchers to identify specific trends, challenges, and successes in different types of hospitals, such as those varying in size, specialty, or geographical location.

One promising approach could be to conduct detailed case studies of selected private hospitals that have successfully implemented management information systems. By examining the specific strategies, practices, and outcomes associated with operational efficiency in these hospitals, researchers could gain a deeper understanding of the factors that contribute to successful MIS adoption. These case studies would

offer valuable qualitative insights, complementing the quantitative data and providing a more holistic view of how MIS impacts hospital operations. Furthermore, case studies could highlight best practices and potential pitfalls, offering practical guidance for other hospitals aiming to enhance their operational efficiency through MIS.

In addition to focusing on private hospitals, future research could broaden its scope to include other sectors. By exploring the relationship between management information systems and operational efficiency across different industries, researchers could identify common themes and sector-specific challenges. This cross-sectoral analysis would enrich the understanding of MIS benefits and limitations, offering a more comprehensive perspective on its applicability and effectiveness. Moreover, replicating the study in different sectors would help validate the findings and ensure their robustness across various contexts.

Implementing these recommendations in future studies will help researchers gather more comprehensive and reliable data, leading to a deeper understanding of the dynamics between management information systems and operational efficiency. Specifically, expanding the sample size and including a more diverse range of hospitals will enhance the representativeness and validity of the findings. Detailed case studies will provide nuanced insights into successful MIS implementation strategies, while broadening the research to other sectors will offer a wider perspective on the generalizability of the results.

For instance, in Sulaymaniyah's private hospitals, a larger and more diverse sample size would allow for better identification of specific factors influencing operational efficiency. Detailed case studies could reveal the practical steps taken by hospitals that have excelled in leveraging MIS, providing actionable recommendations for others. By examining different sectors, researchers could compare the efficacy of MIS in various operational environments, potentially uncovering universal principles that drive efficiency improvements.

In conclusion, future research should consider these methodological enhancements to build upon the current study's findings. Expanding the sample size, conducting detailed case studies, and exploring different sectors will provide a richer, more comprehensive understanding of how management information systems can optimize operational efficiency. These efforts will ultimately contribute to more effective implementation strategies, benefiting not only Sulaymaniyah's private hospitals but also a broader range of industries seeking to improve their operational performance through MIS.

5.6 Summary

The conclusion of the research study highlights the significant role that management information systems play in improving operational efficiency in Sulaymaniyah's private hospitals.

The study provided evidence of a positive correlation between the implementation of effective management information systems and improved operational efficiency in private hospitals. It confirms that the utilization of such systems can lead to streamlined processes, enhanced decision-making, and overall operational performance. And the connection between management information systems (MIS) and operational effectiveness in Sulaymaniyah's private hospitals was investigated. Through data gathering and analysis, the study's three goals were met, yielding insightful information about the degree of operational efficiency, the usage of MIS, and the link between MIS and operational efficiency in the private healthcare sector.

The results show that Sulaymaniyah's private hospitals have fully adopted and incorporated MIS into their daily operations. The extensive use of MIS in these institutions suggests that they understand the value of utilizing technology to improve operational effectiveness, decision-making, and healthcare delivery. Their everyday operations now depend heavily on the deployment and use of MIS.

The research results also show a favorable connection between operational effectiveness and MIS. According to the findings, firms that successfully adopt and use MIS have greater levels of operational efficiency than those that use the systems just sometimes or not at all. Process simplification, enhanced collaboration and communication, data-driven decision-making, and resource allocation are all made possible by MIS.

The report also emphasizes Sulaymaniyah's private healthcare industry's mediocre operating efficiency. There is definitely space for improvement despite the admirable efforts that have been made to simplify workflows and enhance operational procedures. The results may be used to pinpoint certain areas for improvement, such as resource use, patient flow management, appointment scheduling, and inventory control.

Overall, this study advances our knowledge of how MIS and operational effectiveness interact in private medical facilities. The findings emphasize the significance of investing in and utilizing MIS to achieve operational excellence and have practical implications for the healthcare industry and beyond. The study's findings offer firms advice on how to choose wisely when it comes to technology expenditures, process improvement, and training initiatives.

Private medical facilities in Sulaymaniyah can aim for continual improvement in their operations by acknowledging the beneficial link between MIS and operational effectiveness. This would improve patient care, cost-effectiveness, and overall organizational performance.

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Appendix A RESEARCH QUESTIONNAIRE

THE RELATIONSHIP BETWEEN MANAGEMENT INFORMATION SYSTEM AND OPERATIONAL EFFICIENCY: CASE ON PRIVATE MEDICAL HOSPITALS IN SULAYMANIYAH

Dear Participants,

We are conducting a survey as part of a final year project on " the relationship between management information system and operational efficiency: case on private medical hospitals in Sulaymaniyah ". This research aims to investigate how management information system and operational efficiency can be The key to facilitating and achieving effective decision-making in an organization..

Your participation in this survey is entirely voluntary and confidential. We will only use the information you provide for the purposes of this research project, and your responses will be anonymous.

The survey will take approximately 5 minutes to complete and will include questions about your demographics, work-related variables, and productivity. We encourage you to answer all questions honestly and to the best of your knowledge.

Thank you for your time and participation in this important research project.

Your Faithfully,

…….

Hanar Jutyar noori

Student of Management Technology

Qaiwan International University, UTM franchise

Email: hjqiu190073@uniq.edu.iq

ئێمە ڕاپرسییەک ئەنجام دەدەین وەک بەشێک لە پڕۆژەی ساڵی کۆتایی لەسەر " پەیوەندی نێوان سیستەمی زانیاری بەڕێوەبردن و کارایییەکانی کارپێکردن: لە نەخۆشخانە پزیشکییە تایبەتەکانی سلێمانی". ئامانجی ئەم توێژینەوەیە لێکۆڵینەوەیە لە چۆنیەتی بەڕێوەبردنی سیستەمی زانیاری و کارایی کارپێکردن دەتوانێت کلیلی ئاسانکاری و بەدەستهێنانی بڕیاردانی کاریگەر بێت لە ڕێکخراوێکدا.

بەشداریکردنت لەم ڕاپرسییە بەتەواوی خۆبەخشانە و نهێنییە. ئێمە تەنها ئەو زانیاریانە بەکاردەهێنین کە تۆ دابین دەکەیت بۆ مەبەستەکانی ئەم پڕۆژە توێژینەوەیە، و وەڵامەکانت نەناسراو دەبن.

ڕاپرسییەکە نزیکەی 5 خولەک دەخایەنێت و پرسیار دەربارەی دیمۆگرافیا، زانیاری پەیوەندیدار بە کار و بەرهەمداری لە کارکردندا لەخۆ دەگرێت.

داواتان لێدەدەین کە بە ڕاستگۆیی و بەگوێرەی زانیاریتان وەڵامی هەموو پرسیارەکان بە وردی بدەنەوە.

سوپاس بۆ کاتتان و بەشداریکردنتان لەم پڕۆژە توێژینەوەیە گرنگە.

لەگەڵ ڕێزی

……

هەنار جوتیار نوری

خوێندکاری تەکنەلۆژیای بەڕێوەبردن

زانکۆی نێودەوڵەتی قەیوان

ئیمەیل

hjqiu190073@uniq.edu.iq

SECTION A: Demographic Questionnaire

Please read the following statements and TICK (√)

1. **Age - تەمەن**

20-24	☐	25-29	☐
30-34	☐	35-39	☐
40-44	☐	45-49	☐
50-54	☐	55-59	☐
60	☐		

2. **Gender - ڕەگەز**

Male - نێر ☐ Female - مێ ☐

3. **Work state - دۆخی کار**

Part time - ☐ Full time - کاتی تەواو ☐

4. **Education level - ئاستی خوێندن**

Associate degree - پلەی هاوبەش ☐
Bachelor's degree - بڕوانامەی بەکالۆریۆس ☐
Master degree - بڕوانامەی ماستەر ☐
Ph. D or higher - بڕوانامەی دکتورا یان بەرزتر ☐

SECTION: Management information system

Please indicate the degrees of your agreement or disagreement toward the statements below by placing the (X) upon your response according to the following options:

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1	2	3	4	5

Statements related to Management information system	**Strongly Disagree**	**Disagree**	**Neutral**	**Agree**	**Strongly Agree**
	1	2	3	4	5
1 Information system make it easier to analyze customer demands and wishes quickly. سیستەمی زانیاری ئاسانکاری دەکات بۆ شیکردنەوەی داواکاری و خواستی کڕیاران بە خێرایی					
2. management information system enables my organization to scan the business environment before producing or serving goods. توانای زانیاری سیستەمەکان ڕێکخراوەکەم کارا دەکات بۆ سکانکردنی					

ژینگەی بازرگانی پێش بەرهەمهێنان یان خزمەتکردنی کاڵا بۆ کڕیاران					
4. Management information Systems upgrade constantly raises customer satisfaction and workplace effectiveness. بەرزکردنەوەی سیستەمی زانیاری بەڕێوەبردن بە بەردەوامی ڕازیبوونی کڕیار و کاریگەری شوێنی کار بەرز دەکاتەوە					
5. Management information Systems allows for early planning of how to meet customer demands. سیستەمی زانیاری بەڕێوەبردن ڕێگە دەدات بە پلاندانانی زوو بۆ چۆنیەتی دابینکردنی داواکارییەکانی کڕیار.					
6. Management information Systems facilitates timely evaluation of customer satis faction. سیستەمی زانیاری بەڕێوەبردن ئاسانکاری دەکات بۆ هەڵسەنگاندنی ڕەزامەندی کڕیار لە کاتی خۆیدا.					
7. Management information Systems profile customer information based on specific needs. سیستەمی زانیاری بەڕێوەبردن پرۆفایلی زانیاری کڕیار ئامادە دەکات لەسەر بنەمای پێداویستی تایبەت.					

7. The management information system provided helps in budget implement ation. سیستەمی زانیاری یارمەتی رونکردنەوە و زانیاری دان دەدات لەبارەی بودجەوە					
8. Management information system helps to make effective decision making. سیستەمی بەڕێوەبردنی زانیاری یارمەتیدەرە بۆ بڕیاردانێکی کاریگەر.					

SECTION C: Operational efficiency

Please indicate the degrees of your agreement or disagreement toward the statements below by placing the (X) upon your response according to the following options:

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1	2	3	4	5

Operational efficiency	**Strongly Disagree**	**Disagree**	**Neutral**	**Agree**	**Strongly Agree**
	1	2	3	4	5
Employee willingness to provide quality services reflects operational performance. ئامادەبوونی فەرمانبەران بۆ دابینکردنی خزمەتگوزاری جۆرایەتی ڕەنگدانەوەی ئەنجامی کارپێکردنە.					
The costs incurred represent how well my organization is performing operationally. ئەو تێچوانەی کە ڕوو دەدەن نوێنەرایەتی ئەوە دەکەن کە ڕێکخراوەکەم چەند بە باشی کار دەکات.					

11. Minimal number of complaints reflects operational performance. کەمترین ژمارەی سکاڵاکان ڕەنگدانەوەی ئەنجامی کارپێکردنە.					
12. The number of workers allocated to do a task shows how efficiently things are run. ژمارەی ئەو کرێکارانەی کە تەرخانکراون بۆ ئەنجامدانی ئەرکێک نیشانی دەدات کە شتەکان بە چ کارامەییەک بەڕێوە دەبرێن					
13. Minimal mistakes and errors made reflects operational performance. ئەو هەڵە و کاردانەوانەی کە ئەنجامدراون ڕەنگدانەوەی ئەنجامی کارپێکردنن					

Any suggestion or comments please indicate below.

……

……

……

……

THANK YOU VERY MUCH FOR YOUR TIME AND EFFORT, IT ISGREATLY APPRECIATED.

زۆر سوپاس بۆ کات و هەوڵەکەت، زۆر سوپاسگوزارە.

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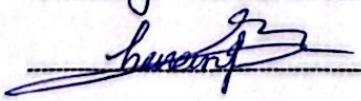
Signature: 

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Department: FMSS - Management Technology

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