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1 Do Components of Management Information Systems Play a
2 Role in Achieving the Quality of Health Services in Bahrain?

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8 **Abstract**

9 The aim of this research is to identify the role of the components of management information
10 systems ?MIS? (Hardware, software, personnel and data components) in achieving the quality
11 of the health services at Salmaniya Medical Complex in the kingdom of Bahrain. A
12 straightforward random sample method was used to conduct a survey of 401 employees. The
13 results of the questionnaire survey, which were distributed to a representative sample of
14 employees, serve as the foundation for the analysis. at Salmaniya Medical Complex in the
15 Kingdom of Bahrain. The research hypothesized that there is a positive significant role for the
16 components of management information systems (Hardware, software, personnel and data
17 components) in achieving the quality of health services at Salmaniya Medical Complex in the
18 Kingdom of Bahrain.

20 **Index terms**— components of management information systems, hardware, software, data, quality of health
21 services, kingdom of bahrain

22 Abstract-The aim of this research is to identify the role of the components of management information systems
23 "MIS" (Hardware, software, personnel and data components) in achieving the quality of the health services at
24 Salmaniya Medical Complex in the kingdom of Bahrain. A straightforward random sample method was used
25 to conduct a survey of 401 employees. The results of the questionnaire survey, which were distributed to a
26 representative sample of employees, serve as the foundation for the analysis. at Salmaniya Medical Complex in
27 the Kingdom of Bahrain. The research hypothesized that there is a positive significant role for the components of
28 management information systems (Hardware, software, personnel and data components) in achieving the quality
29 of health services at Salmaniya Medical Complex in the Kingdom of Bahrain. The findings revealed that there
30 was a positive significant role for the components of management information systems in achieving the quality
31 of health services at the medical complex in questions. Moreover, the results indicated that there were no
32 significant differences relating to the role of the components of management information systems in question in
33 achieving the quality of health services at the medical complex in questions due to the demographics (Gender,
34 age, qualifications, years of experience and position) ealth organizations of various classifications seek to upgrade
35 the level of services they provide to reach the degree of excellence, which is an example that both service providers
36 and beneficiaries alike aspire to (Abdul Qadir, 2020). The recent period has witnessed advanced developments
37 relating to the quality of health services as this endeavour has become a necessary requirement for all health
38 organizations, which has made the administrations of these organizations face very important responsibilities
39 towards challenges that they must cope with in order to improve the quality of health services (Al-Mousawi,
40 2016). The presence of information systems in health organizations is an important aspect of improving services
41 and increasing its quality in order to keep pace with scientific and technological changes in the health field (Al
42 Gazali & Ali, 2022).

43 The remaining parts of the paper are laid out as follows: The review of the literature is presented in section
44 2.The method is explained in Section 3.Sections (4) and (??) contain explanations for the discussion and results
45 of statistical analysis, while section (5) contains conclusions.

1 II.

2 Theoretical Framework and

Literature Review a) Management Information Systems i. Definition of management information systems
A management information system is defined as a set of interrelated components for collecting, retrieving,
processing, storing and distributing information to support decision-making and control in an organization
(Laudon & Laudon, 2014).

ii. Importance of management information systems

Providing appropriate information at the appropriate time to support decision-making for all administrative
levels. Allocating horizontal and vertical communication channels between the administrative units associated
with the organization in order to establish easy procedures for their retrieval. iii. Components of management
information systems Hardware: They are the input units, which are the keyboard, audio pickups and scanners
that work on data entry, as well as the output units, which are responsible for outputting the results in the form
of audio or visual information or texts printed on paper. In addition, units of storing information from laser hard
and flexible disks (David, 2014) Data are considered raw facts and can come in the form of a number or phrase
for producing information in management information system (Abdeldayem & Darwish, 2018; Inesh, 2014).

3 iv. Advantages of information in a management information system

Information must be accurate, error free, relevant, timely, complete, clear, objective, measurable and easy
obtainable (Mamary et al., 2014).

4 b) Quality of Health Services i. Definition of quality of health services

The quality of the health services is the ability to achieve a health service that exceeds the expectation of the
patients in the right place, at the right time, and at the right price (Mosadeghrad, 2014).

5 ii. The importance of the Quality of Health Service

Quality in the health service is a prominent indicator in measuring the level of satisfaction achieved by patients
with the health service provided to them by health organizations. Ensuring the physical and psychological
health of the patients. Developing and improving communication tools between health service beneficiaries
and provides. Enabling health organizations to perform their tasks efficiently and effectively. Improving the
morale of employees in health organizations and enhancing their confidence in the effectiveness of their work,
which leads to the best. Providing a distinguished health service that will achieve the patient's satisfaction and
increase their loyalty to the health organization, which is an effective media means for that organization (Saad
& Amsheeri, 2017).

iii. Dimensions of Health Service Quality

Tangible: it represents the physical facilities, equipment, people, and materials that can be perceived through
human senses.

Responsiveness: it is the voluntary presence of the service provider to the serve of the patient in a good,
accurate and timely manner.

6 Methodology a) Research Problem

Based on various studies that confirmed that importance of the components of management information systems
(software, personnel and data components) and its positive role in achieving the quality of health services at
Salmaniya Medical Complex in Kingdom of Bahrain. The problem of research could therefore be expressed in
the following key questions: "What is the role of the components of management information systems (hardware,
software, personnel and data components) in achieving the quality of health services at Salmaniya Medical
Complex in Kingdom of Bahrain?"

7 b) Research Hypotheses

8 Main hypothesis 1

H1: There is a positive significant role for the components of management information system (Hardware,
software, personnel and data components) in achieving the quality of health services at Salmaniya Medical
Complex in the Kingdom of Bahrain.

9 Main hypothesis 2

H1: There are positive significant differences relating to the role of components of management information
systems in achieving the quality of health services at Salmaniya Medical Complex in the Kingdom of Bahrain

98 due to the demographics (gender, age, qualification, years of experience and position). The general average of
 99 the variable (quality of health services, responsiveness dimensions) reached (3.75), indicating that the research
 100 sample's opinions on this dimension were high, as shown in Table 6. The general variable (empathy dimension,
 101 quality of health services) reached 4.14 in Table 9, indicating that the research sample's opinions were high on
 102 this dimension.

103 **10 c) Research Framework**

104 **11 Analysis and Empirical Findings**

105 **12 a) Testing Research Hypothesis**

106 To make sure that the main hypothesis (1) is correct," there is a positive significant role for the components of the
 107 management information systems, hardware, software, personnel and data components in achieving the quality
 108 of health services at Salmaniya Medical complex in Kingdom of Bahrain, multiple linear regression analysis was
 109 used where the results showed the following:

110 The components of management information systems The results shown in table 10 indicate that the
 111 primary hypothesis (1) is true. Additionally, the findings of the second main hypothesis state that "due to
 112 the demographics (gender, age, qualification, years of experience, and position), there are positive significant
 113 differences relating to the role of the components of management information systems in achieving the quality
 114 of health services at Salmaniya Medical Complex in the kingdom of Bahrain."They showed that there were no
 115 significant differences in the demographics (gender, age, qualifications, number of years in the job, and position).

116 **13 V.**

117 **14 Concluding Comments**

118 ? There was a positive significant role for the components of management information systems (Hardware,
 119 software, personnel, and data components) in achieving the quality of health services at Salmaniya Medical
 120 Complex in the Kingdom of Bahrain. ? There were no significant differences relating to the role of the components
 121 of management information systems in question, in achieving the quality of health services at the complex in
 122 question due to demographics (gender, age, qualification, years of experience and position).

123 The following recommendations were made in light of the drawn conclusions:

124 ? The necessity of providing adequately qualified human resources that have experience in their field of work
 125 because of their effective role in achieving the quality of health services in Salmaniya Medical Complex in the
 126 Kingdom of Bahrain. ? The necessity for the management of the medical complex in question to hold training
 127 courses for employees in the MIS units to develop their capabilities and skills to enable them to deal with the
 128 materials supplies and advanced software. ? The necessity of encouraging employees in the medical complex
 129 in question to use management information systems, identify their needs, and work to solve the problems they
 130 face when using them. ? The necessity of raising the level of commitment of the medical complex in question
 management to the standards of health service quality.

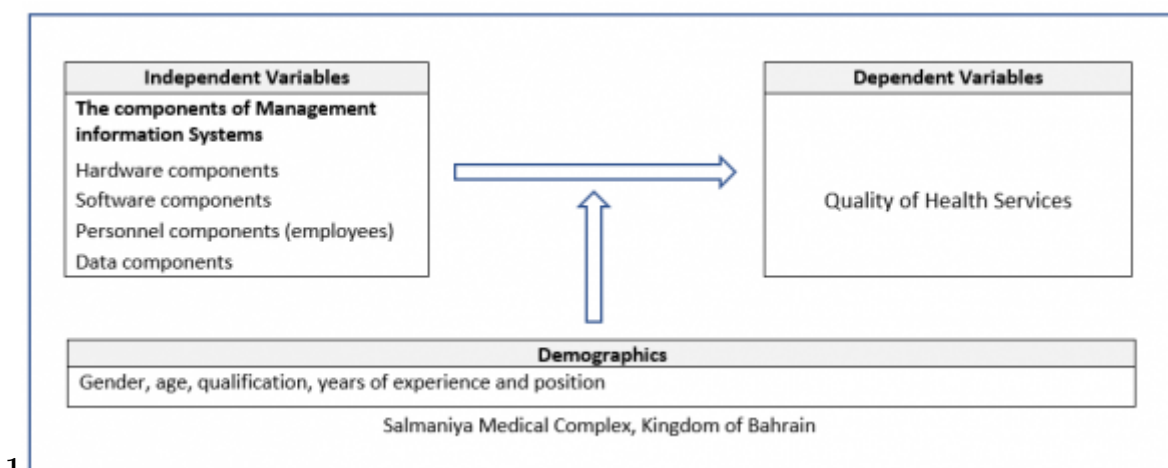


Figure 1: Figure 1 :

Figure 2:

III.

Figure 3: ?

1

Sr.	Statement	Mean	Standard Deviation	Rank	Mean Interpretation
1	The hospital has modern and advanced hardware.	2.28	0.751	5	Neutral
2	The hardware is appropriate for the hospital work.	3.32	0.778	3	Neutral
3	The material requirements are characterized by flexibility speed in entering and processing data.	3.31	0.784	4	Neutral
4	Storage units have ability to store large amounts of data and information	3.41	0.838	2	Agree
5	The output units are distinguished by displaying the information clearly	4.25	0.486	1	Strongly agree
	Average	3.51	0.727		Agree

The general average of the variable (the components of the management information system, hardware dimension) reached (3.51), as shown in table 1, indicating that the research sample's opinions within this dimension

Figure 4: Table 1 :

2

Sr.	Statement	Mean	Standard Deviation	Ranking	Mean Interpretation
1	The software used can accomplish various hospital tasks accurately	3.55	0.761	3	Agree
2	The software is characterised by speed, accuracy and flexibility in analysing and processing data and converting it into information.	3.51	0.975	4	Agree
3	Software has the ability to flexibly exchange information between users.	3.58	1.015	1	Agree
4	The software is distinguished to keep pace with the change and development in the hospital's business	3.56	0.763	2	Agree
Average		3.55	0.878		Agree

The general average of the variable (the components of management information systems, software dimension) reached 3.55, as shown in table 2, indicating that the research sample had a favorable opinion of this dimension.

Figure 5: Table 2 :

3

Sr.	Statement	Mean	Standard Deviation	Ranking	Mean Interpretation
1	The workers have a high ability to deal with the available hardware and software	3.35	0.746	4	Neutral
2	The employees have administrative and technical expertise commensurate with the tasks assigned to them	4.21	0.554	3	Agree
3	The employees are characterised by adapting to the changes, developments, and work requirements	4.23	0.59	2	
4	Information system workers are specialist	4.25	0.481	1	
	Average	4.01	0.573		Agree

The general average of the variable (the components of management information systems, personnel dimension) reached 4.01, as shown in table 3, indicating that the research sample held high opinions regarding this dimension.

Figure 6: Table 3 :

4

Sr.	Statement	Mean	Standard Deviation	Ranking	Mean Interpretation
1	Data coordinates and speed up the hospital's administrations.	4.21	0.536	4	Strongly agree
2	Data helps to identify problem and find solutions to them.	4.22	0.537	3	Strongly Agree
3	The data is continuously updated	4.24	0.503	1	Strongly agree
4	Database presents duplication of stored data	4.23	0.522	2	Strongly agree
	Average	4.23	0.525		Strongly agree

The general average of the variable (the components of management information systems, data dimension) reached (4.23), indicating that the research sample's opinions on this dimension were high, as shown in

Figure 7: Table 4 :

45

Sr.	Statement	Mean	Standard Deviation	Rank	Mean Interpretation
1	The hospital has modern looking facilities.	3.88	1.015	1	Agree
2	The physical facilities look attractive.	3.28	0.786	4	Neutral
3	The staff has elegant appearance.	3.83	0.450	2	Agree
4	The articles related to the health service are attractive.	3.42	0.529	3	Agree
	Average	3.60	0.695		Agree

Table 5 showed that the general average of the variable (quality of health services, tangible dimension) reached (3.60) which demonstrated that the research sample held high opinions regarding this aspect.

Figure 8: Table 4 .Table 5 :

6

Sr.	Statement	Mean	Standard Deviation	Rank	Mean Interpretation
1	Rapid response to provide service to patients and reviews when they need it.	3.29	0.779	3	Neutral
2	Staff give clear and understandable information to patients and reviewers.	4.25	0.544	1	Strongly Agree
3	The hospital management provides good communication and right service the first time	3.23	0.922	4	Neutral
4	Employees interested in responding to patients' and auditors' request continuously	4.22	0.538	2	Strongly agree
	Average	3.75	0.696		Agree

Figure 9: Table 6 :

7

Sr.	Statement	Mean	Standard Devia- tion	Rank	Mean Inter- preta- tion
1	When the hospital promises to do something at a certain time, it will stick to it.	3.13	0.810	2	Neutral
2	The hospital provides timely services	2.94	0.651	5	Neutral
3	The hospital is providing service correctly from the first time.	2.96	0.621	4	Neutral
4	The Hospital maintains error-free records.	3.03	0.646	3	Neutral
5	The hospital seeks to solve problems of patients and auditors.	3.38	0.759	1	Neutral
	Average	3.09	0.097		Neutral

The general average of the variable (quality of health services, reliability dimension) reached 3.09 in

Figure 10: Table 7 :

7

Figure 11: Table 7 ,

8

Sr.	Statement	Mean	Standard Devia- tion	Rank	Mean Interpre- tation
1	Staff behaviour enhances confidence for patients and auditors.	3.97	0.595	1	Agree
2	Patients feel safe when dealing with employees.	3.80	0.417	3	Agree
3	The staff is always kind and patients.	3.04	0.619	4	Neutral
4	Staff has the knowledge to answer questions from patients and reviewers.	3.91	0.629	2	Agree
	Average	3.68	0.565		Agree

Figure 12: Table 8 :

8

Figure 13: Table 8

9

Sr.	Statement	Mean	Standard Deviation	Rank	Mean Interpretation
1	Staff provide personal attention to patients.	4.13	0.639	5	Agree
2	The patients' management pays attention to patients.	4.16	0.619	3	Agree
3	Staff understand the special needs of patients.	4.18	0.608	1	Agree
4	Staff working hours are decided according to the patients' needs.	4.15	0.627	4	Agree
5	The interests of the patients are important to the hospital	4.17	0.605	2	Agree
	Average	4.16	0.620		Agree

Figure 14: Table 9 :

	Correlation co-efficient with the quality of health services	Significance
Hardware	0.856	0.00
Software	0.780	0.00
Personnel	0.533	0.00
Data	0.297	0.00

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Figure 15:

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Figure 16: Table 10 :

Figure 17:

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