

DELMAR INTERNATIONAL

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Professional Research

The impact of the use of information technology
on accounting and health information systems to
improve the quality of health services in
government hospitals

"A field study at Wadan General Hospital"

The Researcher

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Acknowledgment and Gratitude

My Lord, inspire me to be grateful for the favor You have bestowed upon me and upon my parents, and to do righteous deeds that please You.

All praise is due to Allah, who granted me the strength, determination, and patience to accomplish this humble work.

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Summary:

This study aims to shed light on the impact of the use of information technology in improving the quality of accounting and health services and enhancing their efficiency and effectiveness. A questionnaire was designed and distributed for the study sample, which consists of (70) paper forms that were distributed to members of the study sample, including medical, medical assistant, and administrative elements (managerial elements). At Wadan General Hospital, to analyze the results and test the hypotheses, the Statistical Package for the Social Sciences (SPSS) program was used with a five-point Likert scale.

The study concluded that there is an impact of information technology on accounting and health information systems and improving the quality of health services. The study on Wadan General Hospital recommended the necessity of introducing information technology into its accounting and health systems using advanced and modern software and applications because of its role in enhancing work efficiency, accuracy, speed of completion, and presenting it with high quality.

key words:

Information technology - information systems - accounting information systems - health information systems - improving the quality of health services.

Introduction.

The world today is witnessing a tremendous acceleration and development in information technology across all areas of life and various sectors and institutions within countries. This has made it one of the most critical requirements to be considered in the business environment that relies on the use of modern information technology tools.

The transformation brought about by information technology in both accounting information systems and healthcare has not only increased productivity but has also positively impacted the quality of services provided in developed countries within these sectors. The use of technology has simplified processes, improved efficiency, enhanced the accuracy and reliability of financial data, and allowed for the faster and more precise processing and analysis of large volumes of data. This shift has enabled accountants and financial professionals to focus more on analysis and decision-making rather than manual data entry and calculations.

Given that the healthcare sector is as crucial as any other sector due to the services and care it provides, and considering the recent significant attention it has received at all levels in developed countries, the application of information technology within this sector has led to substantial improvements in service quality. Electronic health records, telemedicine,

and advanced diagnostic tools have contributed to more efficient and accurate patient care. Additionally, technology has facilitated better communication among healthcare providers, leading to improved coordination, overall quality of healthcare services, and more effective and swift reporting and statistics.

Therefore, it is imperative for developing countries, including Libya, to adopt information technology across all their domains and keep pace with this development, especially in their vital institutions. Reducing reliance on traditional manual methods in accounting and increasing dependence on computerized information systems will leverage the significant advantages of enhanced accuracy, speed, and comprehensive data management. This transition will facilitate achieving the desired objectives and benefiting from modern equipment, software, and accounting databases suited to the work environment.

The study Problem.

The healthcare sector faces significant challenges due to the continuous advancements in information technology and its role in enhancing performance and service delivery. Information technology is at the forefront of strategies that must be adopted to keep pace with technological progress in this field. However, the healthcare sector in Libya has not given technology the attention it deserves. At the Wadan General Hospital (the focus of this study), most departments still rely on paper-based transactions, which consume a considerable amount of time and effort. Although some computer systems are available in parts of the hospital, they are primarily used for printing schedules, correspondence, and financial transactions through programs like Word and Excel in most departments.

Given the pressing need to improve the quality of financial and healthcare services, this study focuses on the impact of information technology on accounting and healthcare information systems to enhance the quality of healthcare services at Wadan General Hospital.

Thus, the study problem can be framed as answering the following question:

- *What is the impact of using information technology on accounting and healthcare information systems to improve the quality of healthcare services at Wadan General Hospital?*

The importance of studying:

Information technology is considered one of the most crucial elements of development in both developing and developed countries. It contributes to increasing national income and is vital for various sectors, particularly the healthcare sector. This has significantly amplified its importance, to the extent that the significance of information technology is closely linked to the development and expansion of the Internet. The Internet, as a key component of technology, has become the backbone of global advancement and progress. Electronic services heavily rely on the Internet to function effectively, which in turn facilitates the performance of tasks and operations, significantly reducing the effort, time, and cost associated with traditional methods and thus increasing productivity.

The importance of this study is demonstrated through:

- *The significance of using information technology as a tool for healthcare professionals, including administrative, medical, and support staff, to manage operations and provide services. Information technology aids in data processing, transmission, exchange, and receipt, enabling rapid, accurate, and efficient financial reporting. It also helps in recording and analyzing patient health data, providing patient care, and achieving health equity by*

reducing the spread of diseases. Additionally, it improves the quality of healthcare services, reduces medical errors, and enhances patient safety through the use of health cards, smartwatches, and electronic health records. These advancements facilitate communication between doctors and patients by following clear strategies within institutions and adhering to specific laws and regulations.

Objectives of the study:

The main objectives of the study can be highlighted as follows:

- *Attempting to address the research problem outlined above.*
- *Aiming to cover all aspects of the subject under study.*
- *Exploring the current use of information technology and its impact on accounting and healthcare information systems to improve the quality of healthcare services at Wadan General Hospital (the subject of the study).*

Study hypotheses and questions.

To address the research problem mentioned above, the following hypothesis was formulated:

Main Hypothesis:

- *There is an impact of information technology on accounting and healthcare information systems in improving the quality of healthcare services.*

From this main hypothesis, the following sub-hypotheses can be derived:

Sub-Hypotheses:

- *There is an impact of information technology on accounting information systems.*
- *There is an impact of information technology on healthcare information systems.*
- *There is an impact of information technology on improving the quality of healthcare services.*

Based on these hypotheses, the following research questions were formulated:

- *What is the impact of information technology on accounting information systems at Wadan General Hospital?*
- *What is the impact of information technology on healthcare information systems at Wadan General Hospital?*
- *What is the impact of information technology on improving the quality of healthcare services at Wadan General Hospital?*

Study Approach.

To address the research problem, the descriptive method was used in the theoretical aspect, which generally covered information technology, healthcare and accounting information systems, as well as the improvement of healthcare service quality in public hospitals. The analytical method was employed for the field study at Wadan General Hospital.

The limits of the study:

Spatial boundaries: The scope of the field study was limited to Wadan General Hospital.

Time limits: 2003-2024

Study plan.

To cover all aspects of the research topic and to address the research problem outlined above, the study is divided into four chapters, preceded by an introduction and ending with a conclusion, as follows:

Theoretical Framework and Scientific Concepts of the Research

Chapter One: Information Technology and Information Systems

Section One: Concepts Related to Information Technology

Subsection One: Technology

- *Definition of Technology*
- *Characteristics of Technology*
- *Dimensions of Technology*

Subsection Two: Information

- *Definitions*
- *Differences*
- *Characteristics of Information*
- *Methods of Presenting Information*
- *Means of Transmitting and Delivering Information*

Subsection Three: Information Technology

- *Definition of Information Technology*
- *Stages of Development of Information Technology*
- *Importance of Information Technology*
- *Characteristics of Information Technology*
- *Components of Information Technology*
- *Objectives of Information Technology*

Section Two: General Perspective on Information Systems

Subsection One: Information Systems

- *Definition of Information Systems*
- *Functions of Information Systems*
- *Dimensions of Information Systems*
- *Types of Information Systems*

Subsection Two: The Difference and Relationship Between Information Systems and Information Technology

- *Difference Between Information Systems and Information Technology*

- *Relationship Between Information Technology and Information Systems*

Subsection Three: Healthcare Information Systems in Healthcare Institutions Amid Technological Advancement

- *Healthcare Institution*
- *Healthcare Information Systems*
- *Healthcare Facility*
- *Hospital Information Systems*

Chapter Two: Accounting Information Systems

Section One: General Perspective on Accounting Information Systems

Subsection One: Accounting Information Systems

- *Definition of Accounting Information Systems*
- *Importance of Accounting Information Systems*

Third: Characteristics of Accounting Information Systems Fourth: Components and Elements of Accounting Information Systems Fifth: Foundations of Accounting Information Systems Sixth: Objectives of Accounting Information Systems

Subsection Two: Quality of Accounting Information Systems Subsection Three: Development of Accounting Information Systems

Section Two: Accounting Information Systems Amid Technological Advancement

Subsection One: Requirements of Accounting Information Systems

Subsection Two: Impact of Electronic Use on the Foundations of Accounting Information Systems Subsection Three: Difference Between Traditional and Electronic Accounting Information Systems Subsection Four: Impact of Information Technology on Accounting Information Systems

Chapter Three: Improving the Quality of Healthcare Services

Section One: Quality and Healthcare Services

Subsection One: Quality

- *Origins and Development of Quality*
- *Concept of Quality*

Subsection Two: Healthcare Services

- *Concept of Service and Healthcare Services*
- *Characteristics of Healthcare Services*

- *Classification of Healthcare Services*

Section Two: Quality of Healthcare Services (Nature and Dimensions)

Subsection One: Nature of Quality in Healthcare Services

- *Definition of Quality in Healthcare Services*
- *Fundamental Aspects of the Concept of Quality in Healthcare Services*
- *Importance of Quality in Healthcare Services*
- *Objectives of Quality in Healthcare Services*
- *General Standards for Quality in Healthcare Services*

Subsection Two: Dimensions and Elements of Quality in Healthcare Services

- *Dimensions of Quality in Healthcare Services*
- *Elements of Quality in Healthcare Services*

Section Three: Impact of Information Technology on Improving the Quality of Healthcare Services

Subsection One: Measuring and Evaluating Quality in Healthcare Services

- *Measuring Quality in Healthcare Services*
- *Evaluating Quality in Healthcare Services*

Subsection Two: Improving the Quality of Healthcare Services Through Information Technology

- *Concept of Improvement*
- *Objectives and Impact of Improvement on Quality of Healthcare Services*
- *Impact of Information Technology on Improving the Quality of Healthcare Services*

Chapter Four: Applied Study

Section One: Overview of Wadan General Hospital

Subsection One: Brief Presentation of Wadan General Hospital

Subsection Two: Operation Mechanisms of Departments and Clinics, and Internal Organization of Wadan General Hospital

- *Operation Mechanisms Within the Hospital's Clinics and Departments*
- *Operation Mechanisms Within the Hospital's Administrative Departments and Offices*
- *Internal Organization of Wadan General Hospital*

Section Two: Methodology of the Field Study

*Subsection One: Study Population and Sample Subsection Two: Study
Tools Subsection Three: Presentation of Results and Statistical Analysis of
Study Variables*

Conclusion.

Since the use of information technology has become the fundamental norm adopted worldwide in our current era across all fields due to its importance in achieving the objectives of any system in the most optimal way, this study, with its four theoretical and practical chapters, aims to provide a comprehensive view of the impact of using this technology with its modern and advanced programs and tools in performing accounting and healthcare tasks.

The study highlights how information technology can enhance the speed of information flow and exchange between system users, improve the efficiency and accuracy of financial and medical report preparation and analysis, assist in making effective and accurate decisions, reduce the time required to provide services, increase the productivity of administrative and medical staff, and improve the quality of healthcare for beneficiaries.

The research relied on both descriptive and analytical methods to address the research problem, which is the impact of using information technology on accounting and healthcare information systems to improve the quality of services. This was achieved by examining the topic from both theoretical and practical perspectives, including understanding the concepts related to information technology and information systems, their characteristics,

components, dimensions, stages of development, and the relationship between information technology and information systems. Additionally, the study explored healthcare information systems in healthcare institutions amid technological advancements, as well as accounting information systems in terms of characteristics, components, stages of development, quality, and the impact of information technology on these systems. The study also addressed the improvement of healthcare service quality by examining its characteristics, dimensions, and evaluation, and understanding the effect of information technology on enhancing these services.

Based on this, we applied the theoretical knowledge to a practical analysis of the use of information technology on accounting and healthcare information systems at Wadan General Hospital.

Results:

The study reached several conclusions, the most important of which are:

- 1. Lack of sufficient computers in all departments.*
- 2. Absence of technology software in the hospital's work plan.*
- 3. No clear vision for planning the use of electronic accounting and healthcare applications.*
- 4. Lack of qualified expertise and competencies in information technology within the hospital.*
- 5. No centralized control unit managing work electronically within the hospital.*
- 6. Each department is not equipped with a specific electronic program for recording patient data.*
- 7. No medical database for remote communication between doctors and patients.*
- 8. A majority of the staff express a desire to transition from traditional administrative procedures to technological ones.*
- 9. Most of the sample agree that the electronic accounting information system achieves a high degree of accuracy in collecting, storing, operating, retrieving, and updating data when converted into accounting information.*

10. Manual methods are used for processing health data and performing financial and accounting tasks within the hospital.

11. The quality of healthcare services at Wadan General Hospital received an excellent rating based on the survey results, despite following traditional methods in its healthcare system.

12. The quality of accounting services at Wadan General Hospital received a very good rating based on the survey results, despite following traditional methods in its accounting system.

Recommendations:

In light of these conclusions, the following recommendations are proposed:

- 1. Integrate information technology into the hospital's work plan and activate it within the healthcare and accounting systems to further improve the quality of health and financial services.*
- 2. Reduce reliance on manual accounting and healthcare information systems and increase dependence on electronic systems to benefit from their advantages.*
- 3. Conduct intensive training sessions for users of the technological system, whether they are administrative or medical staff, to equip them with the skills needed to perform their tasks efficiently.*
- 4. Develop a database for employee management to facilitate access to employee information.*
- 5. Create databases for each department to record patient data, making it easier to retrieve information when needed (electronic medical record).*
- 6. Use electronic archiving (cloud storage) for financial and medical transactions.*

7. *Establish a centralized control unit for information systems to handle administrative and healthcare transactions, streamline procedures, improve decision-making, and reduce the rate of errors.*
8. *Connect all hospital departments and staff through internal electronic networks to facilitate communication.*
9. *Provide the latest equipment and software within the hospital, distribute them to departments, and ensure their optimal use.*
10. *Use electronic medical applications to facilitate communication with patients and diagnose diseases.*
11. *Utilize medical guidance applications to provide health advice to beneficiaries.*

God is the Grantor of success

The researcher

The reviewer:

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