Dissertation Report

at

Triotree Technologies Pvt. Ltd.

On

A Scoping Literature Review to Assess the Factors Contributing to Successful Implementation of a Hospital Information System

by

Pallavi Govil

PG/22/067

Under the guidance of

Dr. Anandhi Ramachandran

PGDM (Hospital & Health Management)

2022-2024

International Institute of Health Management Research, New Delhi

(Completion of Dissertation)

The certificate is awarded to

Ms. Pallavi Govil

in recognition of having successfully completed his
Internship in the department of

Functional Team (Implementation)

and has successfully completed his Project on

"To assess the factors Contributing to Successful Implementation Of a Hospital Information System"
TrioTree Innovations Pvt Lmt

He/She comes across as a committed, sincere & diligent person who has a strong drive & zeal for learning.

We wish him/her all the best for future endeavors.

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This is to certify that Pallavi Govil, a student of PGDM (Hospital & Health Management) from International Institute of Health Management Research, New Delhi undergone internship training at Triotree Technologies Pvt. Ltd. from 15 Mar 2024 to 14 Jun 2024.

The candidate has successfully carried out the study designed to her during the internship training and her approach to the study has been sincere, scientific and analytical.

The internship is in fulfillment of the course requirements.

I wish her all success in all her future endeavors.

Dr. Sumesh Kumar

Associate Dean, Academic and Student Affairs

IIHMR, New Delhi

Dr. Anandhi Ramachandran

Professor

IIHMR, New Delhi

Certificate of Approval

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The following dissertation titled "To assess the factors contributing to successful implementation" at "Triotree Tech. Pvt. Ltd." is hereby approved as a certified study in management carried out and presented in a manner satisfactorily to warrant its acceptance as a prerequisite for the award of **PGDM (Hospital & Health Management)** for which it has been submitted. It is understood that by this approval the undersigned do not necessarily endorse or approve any statement made, opinion expressed, or conclusion drawn therein but approve the dissertation only for the purpose it is submitted.

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This is to certify that **Pallavi Govil,** a graduate student of the **PGDM (Hospital & Health Management)** has worked under our guidance and supervision. She is submitting this dissertation titled "**Assess the factors contributing to successful implementation of a Hospital Information System: A Scoping Review"** at "Triotree Technologies Pvt. Ltd." in partial fulfillment of the requirements for the award of the **PGDM (Hospital & Health Management).**

This dissertation has the requisite standard and to the best of our knowledge no part of it has been reproduced from any other dissertation, monograph, report or book.

Dr Anandhi Ramachandran,
Professor

IIHMR, Delhi

Mr. Girjesh Kumar
Program Manager

Triotree Technologies Pvt. Ltd.

Feedback Form

Name of Student: Pallavi Govil

Name of the Organisation in Which Dissertation Has Been Completed:

TrioTree Technologies Pvt. Ltd.

Area of Dissertation:

Health IT

Attendance: 98%

Objectives achieved:

Identified additional factors that are affecting our implementation.

Strengths:

Completes all task on time and also assists co-workers and helps them to achieve their own goals.

Signature of the Officer-in-Charge/ Organisation Mentor (Dissertation)

Date: 18/07/2024

Place: TrioTree Technologies Pvt. Ltd.

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This is to certify that the dissertation titled **"Assess the factors contributing to successful implementation of a Hospital Information System: A Scoping Review"** and submitted by **Ms. Pallavi Govil, Enrollment No. PG/22/067** under the supervision of **Dr. Anandhi Ramachandran** for award of PGDM (Hospital & Health Management) of the Institute carried out during the period from 15/03/2024 to 14/06/2024 embodies my original work and has not formed the basis for the award of any degree, diploma associate ship, fellowship, titles in this or any other Institute or other similar institution of higher learning.

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Course Specialization (Choose one)	Hospital Management	Health Management	Healthcare IT ✓
Name of Guide/Supervisor	Dr./ Prof.: Anandhi Ramachandran.		
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ACKNOWLEDGEMENT

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I am truly grateful to all my beloved friends, ever-supporting colonels, and the organization, as their contributions have been indispensable in my professional growth and development.

I hope to apply the knowledge and experience gained from this project to make meaningful contributions to the community in the future.

ABOUT THE ORGANIZATION

TrioTree Technologies is one of the leading providers of healthcare solutions in India, the UK, and the Middle East. TrioTree Technologies was founded by a group of doctors and engineers with decades of experience in the healthcare domain.

TrioTree's vision is to revolutionize the quality and efficiency of everyday patient experiences with the convergence of healthcare.

THE TREE represents the growing state of the company - A strong organic growth.

THE TRUNK the fusion of three unique identities joining in a triple helix, uniting towards a single foliage. The identities being very different in character - strong and vibrant on their own.

THE FOLIAGE represents the united energy. The bubbles - new ideas expanding, taking shape.

OUR SPIRIT- United, Strong, Ideating.

Table of Contents

ABSTRACT

A Scoping Literature review to assess the factors contributing to successful implementation of a Hospital Information System

Key words: Critical Success Factors; Electronic Health Records; human Factors; organizational Factors; project management; technical Factors; Health Information Technology

Introduction

Hospital Information Systems(HIS) are necessary for effective healthcare administration. However, a number of affecting factors make successful adoption difficult. With a special emphasis on developing nations, this study attempts to identify and assess the crucial success elements for HIS deployment, with a focus on managerial, organizational, technological, and human components.

Methodology

The PRISMA guidelines were followed in the scoping review process. Original research publications published in English within the previous seven years were considered in the review. PubMed, Science Direct, Google Scholar were among the databases that were searched. 25 of the 58 articles that were initially found to meet the inclusion criteria were examined for important themes.

Results

The review identified several critical factors for successful HIS implementation. Key human factors include perceived utility, ease of use, and user training. Organizational factors such as senior management support, clear goals, and stakeholder engagement are vital. Technological factors, including system quality, functionality, and integration, are also crucial, particularly during the early implementation phases.

Conclusion

Successful HIS implementation requires a comprehensive approach that integrates human, organizational, and technological factors. Addressing these elements and their interactions can significantly enhance HIS adoption and effectiveness, particularly in resource-constrained settings. This study provides valuable insights for guiding future HIS implementation strategies to improve patient outcomes and organizational performance.

Background:

These days, information systems are pushed upon managers in the health field because, similar to other professions, they are indispensable. A number of variables influencing the success or failure of information systems must be taken into account in order to manage such initiatives (1, 2). However, the directors' approval is not a guarantee that these systems would be implemented successfully, and unsuccessful information technology (IT) projects are documented. Instead, other factors must be considered.

Numerous studies have emphasized the significance of different elements in guaranteeing the effective deployment of HIS. These elements comprise managerial, organizational, technological, and human components. Perceived utility, perceived simplicity of use, and computer skills are examples of human factors that are increasingly important in the acceptance and successful deployment of HIS. Additionally, technological issues are important, especially in the early phases of implementation when infrastructures are being established and systems are still being developed.

The implementation of HIS in developing countries presents unique challenges due to the scarcity of resources and infrastructure. A socio-technical model can be used to understand the current working system and identify problems and solutions before implementation.(4,3)

All things considered, the effective deployment of HIS necessitates a thorough strategy that takes into account several variables. The purpose of this study is to evaluate the elements that lead to the effective deployment of HIS, offering hospitals a road map to leverage organizational fit and essential success criteria.

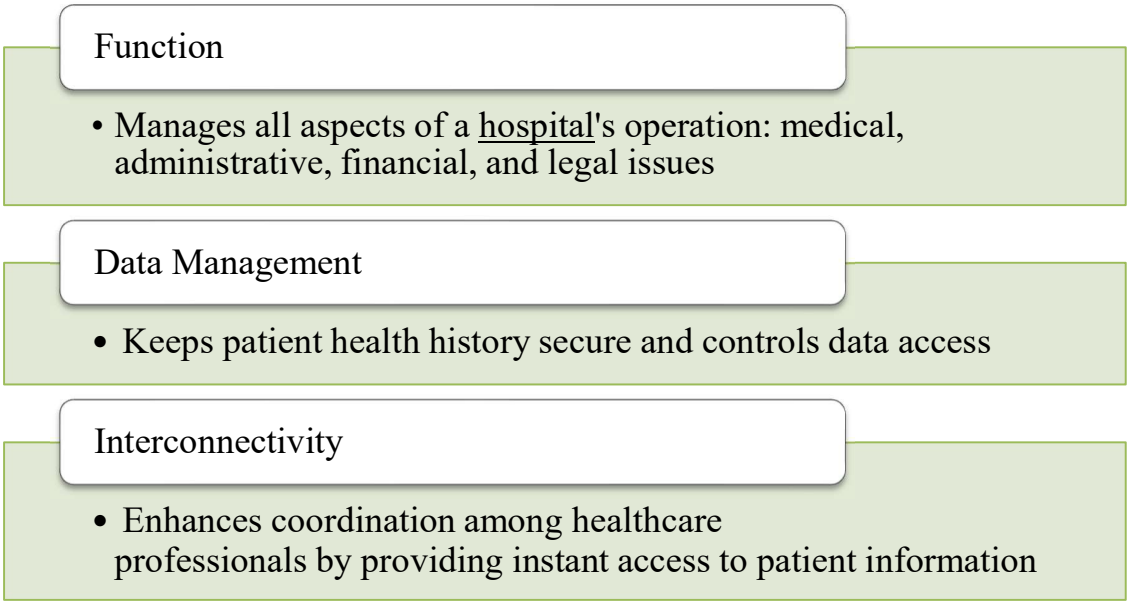
This scoping review aims to identify and evaluate studies that shows factors associated with the successful implementation of the HIS.

Need of this study:

Despite implementation issues, Hospital Information Systems (HIS) are becoming increasingly popular in the healthcare industry, which is why this study is necessary. Insufficient comprehension of the elements that lead to achievement impedes the use of efficient tactics. The goal of this scoping review is to compile the body of knowledge and guide future methods of implementation. It will improve patient outcomes and organizational performance while addressing the gap in underdeveloped nations(2, 13).

Hospital Information System

An element of health informatics focusing on hospital administration



Aim and Objectives:

To identify barriers and facilitators to implementation of hospital information system as reported in the literature

Methodology:

Study type: Scoping Review.

Selection criteria: The scoping review have adopted the 4 steps by PRISMA statement described below:

Identification: database searching = 58

Screening: duplicates = 40

Eligibility: records of exclusion criteria = 15

Included: records used for study = 25

Inclusion criteria:

- Original research study published in full
- Participants surveyed about the implementation were hospital staff, implementers
- Specific barriers and facilitators to the implementation process.
- Studies conducted in hospital or healthcare settings
- Peer-reviewed articles published in English.

Exclusion criteria:

- Articles of language other than English
- Studies not focused on hospital information systems
- papers that reported only data about the intervention outcomes

Information sources: The literature screening process relied on keywords and subject headings to select relevant materials. Several databases and sources were utilized, including PubMed, Science Direct, Google Scholar will be conducted with results limited to articles published in the last 7 years.

Search Strategy: Appropriate MESH terms were used. The search terms which were applied are as follows: Challenges, Critical Success Factors; Electronic Health Records; human Factors; organizational Factors; project management; technical Factors; Health Information Technology. These are the various terms that were searched using appropriate Boolean connectors (AND/OR) for example Challenges AND Health Information System.

Selection process: First screened all the selected literatures title and abstract according to the eligibility criteria. A full text report screening was conducted and checked for cross references.

Data Management: To conduct this review, the reviewer extracted data from the selected studies into a Microsoft Excel spreadsheet to get further insights.

Result:

The search yielded many articles that met the inclusion criteria after removing the duplicates, 25 articles yielded. The analysis identified several key themes related to the critical factors for the successful implementation of HIS: (9,21,19,18)

Human Factors	User acceptance and training
	Computer skills and literacy
	Perceived usefulness and ease of use
	User involvement and participation
	Change management and communication

Organisational Factors	Top-down support and leadership
	Clear goals and objectives
	Organizational culture and readiness
	Stakeholder engagement and participation
	Project management and planning

Technological Factors:	System quality and functionality
	Information quality and accuracy
	Service quality and support
	Vendor support and maintenance
	Integration with existing systems

Discussion:

The results of this scoping analysis of the literature demonstrate the complexity of the elements influencing the effective deployment of hospital information systems (HIS). The analysis reveals that, in addition to technological factors, organizational and human elements are important for the success of HIS deployment. (3,24,21,19,17)

The significance of human factors, especially user acceptance, training, and perceived ease of use, highlights the necessity of comprehensive training programs and user involvement during the implementation process.

For the successful adoption of Health Information Systems (HIS), organizational factors, such as top-down support and a clear vision, are crucial in creating an environment that is favorable to HIS adoption. Additionally, technological factors, including system quality and vendor support, are pivotal in ensuring the reliability and functionality of the systems.

The significance of a collaborative approach is highlighted by the interplay of human, organizational, and technological elements. Engaging input from all parties involved, such as healthcare professionals, IT personnel, and leadership, can result in more successful implementations of health information systems.

The interaction between these factors emphasizes the importance of a collaborative approach involving insights from all stakeholders to overcome barriers and improve the effectiveness of HIS in healthcare settings, particularly in developing countries with limited resources. This cooperation is crucial for surmounting obstacles and guaranteeing that the systems address the real needs of users, ultimately enhancing the overall effectiveness of health information systems in healthcare environments.

Conclusion:

The important elements influencing the effective deployment of hospital information systems in healthcare environments have been recognized and summarized by this scoping literature review. The results emphasize how crucial it is to take into account organizational, technological, and human variables—as well as how these factors interact—to successfully embrace and use HIS.

Human factors have a major role in the adoption and efficient use of hospital information systems. Technology concerns, organizational and administrative variables, and so forth come next. Hospital information system acceptance and successful implementation are influenced more by human factors, such as general computer knowledge, ease of use, and ease of learning; technological factors, such as the hospital information system's future development and its dependability in protecting information; and organizational and managerial factors, such as project management, information confidentiality, and user training.

Hospital information systems are expected to be installed successfully across the country if individuals and professionals are empowered to lead the project, human and technological factors are strengthened during the installation and implementation of these systems, and both groups' experience and capabilities are increased. This is because hospital information systems are still in their infancy in the nation, many of these systems are difficult for users and providers to create and deploy, and there are occasionally problems with their use. (13, 19, 20)

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