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Article

Does the development of strategic readiness represent a response to the relationship of strategic competencies and the healthcare information system? Evidence from private hospitals in Jordan

Ahmad Ali Salih*, Lubna Jamil Abutaha, Ahmad Yacoub Nasereddin

Faculty of Business, Middle East University, Amman 11831, Jordan
*** Corresponding author:** Ahmad Ali Salih, asalih@meu.edu.jo

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Abstract: This study introduces a model designed to improve the strategic readiness of private hospitals in Amman by incorporating strategic competencies as an independent variable and using a healthcare information system as a mediator. Targeting private hospitals with over 140 beds, the research included a population of 3263 employees across various managerial levels. Data collection methods involved interviews and electronic questionnaires, resulting in a sample size of 344. Statistical analyses comprised exploratory and confirmatory factor analysis, structural equation modeling, and hypothesis testing with SMART PLS 3.3.3 software. The results indicated medium levels of both strategic competencies and healthcare information systems, while strategic readiness was found to be low. Nevertheless, the proposed model showed a direct positive effect of strategic competencies on strategic readiness, with the healthcare information system acting as a significant partial mediator. Evaluation metrics included the arithmetic mean, standard deviation, and path analysis. This model surpasses traditional methods by effectively linking strategic competencies and information systems to enhance strategic readiness, providing a strong framework for improving hospital responses to crises and dynamic changes. The study suggests focusing on enhancing and developing strategic competencies and integrating a comprehensive healthcare information system to optimize hospital operations and increase readiness.

Keywords: strategic competencies; strategic readiness; health care information system; private hospitals in Amman city

1. Introduction

In the present day, we continue to grapple with the profound impacts of the COVID-19 pandemic, which has fundamentally reshaped both individual lives and organizational dynamics (Alsyouf et al., 2023). Healthcare providers worldwide have faced significant challenges navigating this unprecedented crisis, often encountering barriers rooted in insufficient institutional readiness (Afrizal et al., 2019; Boufini, 2022). Afrizal et al. (2019) and Boufini (2022) underscored the critical role of readiness and preparation in shaping effective management responses to crises.

Strategic readiness, defined as the alignment of an organization's tangible and intangible assets with its strategic plan through effective implementation (Halpern et al., 2021), is crucial for organizational survival and success, as highlighted by Alsyouf et al. (2023). The shortcomings observed in organizational responses during the COVID-19 pandemic emphasize the imperative to learn from these experiences and enhance preparedness for rapid and transformative changes (Kruszyńska-Fischbach et al., 2022). Conversely, Lokuge et al. (2019) and Hick et al. (2020)

emphasized the challenges faced by many organizations in adapting or transforming their operations due to deficiencies in organizational readiness. This underscores the urgent need to bolster hospitals' readiness and equip them to navigate sudden emergencies and turbulent environmental shifts, necessitating the development of new methodologies and the enhancement of both technical and non-technical skills, including leadership competencies (Shin and Park, 2021).

Strategic competencies, as articulated by Liikamaa (2015), Passow and Passow (2017), and Pandya et al. (2022), play a pivotal role in guiding institutions toward success and maintaining competitive advantage. Moreover, Ardakan and Ebadi (2021), Al-Awamleh (2021), Hadden et al. (2022), Hulla et al. (2019), Saari et al. (2019), Vaishnavi et al. (2019), elaborate on the criticality of organizational capability in strategy formulation—an essential component of strategic readiness recognized as particularly challenging by most leaders.

The interdependence between strategic competencies and strategic readiness, essential for organizational success, hinges significantly on the presence of an integrated information system. Healthcare Information Systems are particularly vital in this regard, as they facilitate the seamless integration of strategic competencies, especially during crises like the COVID-19 pandemic (Alsyouf et al., 2023). Despite extensive research on strategic competencies and Healthcare Information Systems individually, gaps persist in understanding their synergistic interaction to fortify organizational readiness and performance (Abell et al., 2023). This study aims to bridge these gaps by investigating how strategic competencies contribute to strategic readiness, with Healthcare Information Systems serving as a crucial mediating factor. Situated at the intersection of strategic management and health informatics, strategic competencies such as strategic thinking, planning, and communication are indispensable for effective leadership and organizational resilience (Liikamaa, 2015; Passow and Passow, 2017; Pandya et al., 2022). Healthcare Information Systems further support these competencies by optimizing workflows and enhancing decision-making processes within healthcare institutions (Shamasunder et al., 2020). However, deficiencies exposed during the COVID-19 pandemic underscore the urgent need for robust Healthcare Information Systems integration to enhance strategic competencies in healthcare settings (Baumgart, 2020; Sheikh et al., 2021).

In this study, the role of the healthcare information system is pivotal in elucidating the relationship between strategic competencies and strategic readiness. Healthcare Information Systems support daily activities and workflows at healthcare institutions, enhancing operational efficiency and performance (Alsyouf et al., 2022a; Shamasunder et al., 2020). Consequently, many healthcare institutions have re-evaluated their adoption of digital healthcare systems and promoted digital inclusivity (Baumgart, 2020; Bang et al., 2021; Morain et al., 2017; Nilashi et al., 2016; Osama et al., 2015; Sheikh et al., 2021), emphasizing the importance of aligning Healthcare Information Systems with digitalization best practices in real-time healthcare provision and treatment.

The motivation for this study stems from the imperative to enhance healthcare institutions' readiness for emergencies through improved strategic competencies and Healthcare Information Systems implementation. By addressing these critical gaps, the study aims to provide practical insights benefiting healthcare providers globally,

including those in Amman, Jordan, in navigating future crises more effectively.

Addressing gaps and challenges in Healthcare Information Systems requires focusing on several critical areas. Firstly, there is a lack of research on how strategic competencies influence HIS adoption and effectiveness in enhancing strategic readiness (Afrizal et al., 2019; Boufini, 2022). This necessitates a deeper exploration of leadership qualities such as strategic thinking and effective communication in Healthcare Information Systems integration. Secondly, limited research on the technical and organizational barriers to Healthcare Information Systems adoption impedes strategic readiness development (Halpern et al., 2021). Understanding these barriers is essential for smoother Healthcare Information Systems implementation and effective utilization, thereby strengthening overall organizational readiness. Thirdly, there is a shortage of metrics for evaluating the impact of strategic competencies on Healthcare Information Systems effectiveness and organizational performance (Hick et al., 2020; Lokuge et al., 2019). Developing these metrics is crucial for assessing the tangible benefits and return on investment of integrating strategic competencies into Healthcare Information Systems.

This study aims to fill key research gaps by identifying essential strategic competencies for effective Healthcare Information Systems implementation (Liikamaa, 2015; Passow and Passow, 2017; Pandya et al., 2022). It will investigate how Healthcare Information Systems mediate between strategic competencies and readiness, offering insights into their interaction (Claudia et al., 2022; Kaur and Rani, 2015). Based on the findings, the study will provide practical recommendations to enhance strategic readiness through improved competencies and Healthcare Information Systems integration, particularly benefiting Amman's private hospitals (Bang et al., 2021; Baumgart, 2020; Morain et al., 2017; Nilashi et al., 2016; Sheikh et al., 2021). These insights aim to bolster healthcare institutions' resilience and performance in uncertain times.

The study aims to explore how strategic competencies enhance readiness, mediated by Healthcare Information Systems in Amman's private hospitals. It seeks to provide actionable recommendations to strengthen institutional resilience and performance in uncertain environments.

The study is structured as follows: Section 1 introduces the study. Section 2 explores the theoretical framework and hypotheses. Section 3 details the research methodology. Section 4 presents data analysis and results. Sections 5, 6 and 7 provide discussions and conclusions, implications for practice and policy, and recommendations.

1.1. Study problem

The limited effectiveness of strategic readiness in private hospitals in Amman is the focus of this study, identified through literature and formal reports. Tjahjadi et al. (2022) suggest further exploration of variables beyond human capital strategy's impact on business performance. Lee et al. (2022) recommend studying additional concepts and variables related to career commitment and achievement. Alharbi (2018) and Austin et al. (2020) call for examining the role of trust in management in healthcare institutions' readiness. Moreover, Bang et al. (2021), Griswold et al.

(2018), and Kruszyńska-Fischbach et al. (2022) stress the necessity of technology in healthcare for continuity and emphasize organizational readiness for e-health technology.

From a field perspective, the Ministry of Health's Strategic Planning 2017 identifies key future strategic issues using a SWOT analysis, highlighting threats and weaknesses that align with the study's problems (Ministry of Health, n.d.). The Directorate of Institutional Development and Quality Control also points out challenges such as a scarcity of qualified human resources, limited health information systems, and weak involvement and empowerment of health service recipients. Additionally, the Economic and Social Council of Jordan's 2021 report on the state of the health sector reveals that its readiness during COVID-19 was weak.

1.2. Study objectives

The main purpose of the current study is to identify the impact of strategic competencies on the strategic readiness with the presence of a mediator role of a health information system in private hospitals in Amman, Jordan by accomplishing the following objectives:

1) Establish a conceptual and intellectual framework for basic study variables (Strategic competencies, strategic readiness, health information system).
2) Diagnose the mediator role of a health information system in the impact of strategic competencies on strategic readiness.

2. Theoretical framework and literature reviews

2.1. Study concepts

2.1.1. Strategic competencies

Numerous researchers have been studying the strategic competencies in all its aspects. Although they all understood competencies by each of their directions, they were mostly unified in the same meaning. The concept of competencies goes back first to the late nineteen century when the competency term was used in preparing nurses, engineers, lawyers, etc. (Al-Tamimi, 2005). Later on, administrative science specifically first used competencies as a term in 1965 (Ansoff). According to Hawi et al. (2015), competencies are defined as the approach to predict and determine the weakness, strongest threats, and opportunities of the surrounding environment and link it to the organization mission as well as to managerial-level implementation. The study of Biberhofer et al. (2019) defined the competencies as the ability to plan and carry out sustainable changes, needing a solution-focused and creative mindset, Innovative approaches to impact monitoring and measurement creating a culture of learning and using both failures and successes to learn.

Strategic competencies, as described by Viale et al. (2022), encompass a set of median and mode characteristics within a group. These characteristics enable individuals to think and act holistically, demonstrating the capacity to manage risks, reduce or eliminate dangers, and save both time and money

Building upon the information provided earlier, it becomes evident that

strategic competencies play a crucial role in the success and sustainability of any organization. These competencies guide the organization toward high performance and serve as a foundation ensuring readiness to adapt to technological advancements and confront unforeseen changes.

2.1.2. Individual competencies

Numerous researchers have affirmed the significance of individual competency as a pivotal concept intertwined with an organization's high performance (Osagie et al., 2019). Individual competencies encompass various factors, including professional skills, information technology application, communication and teamwork, and learning autonomy (Cheng et al., 2021). The recurring question of what type of individual is best suited for a specific job and why certain skills and knowledge are essential finds its answer in implementing the strategic planning of any organization to achieve its goals (Jacobs, 2019). This underscores the pivotal role of individual competencies.

Furthermore, studies by Doblinger (2022) and Marei et al. (2022) establish a link between the impact of individual competencies and various performance and success indicators in organizations. Using self-awareness and knowledge as a foundation, individuals can engage with others and execute responsible management practices (Nonet et al., 2016). An exemplary illustration of primary personal characteristics includes energy, conviction, character, and the expression of values, making an individual admired and perceived as a role model due to their conviction, high standards, and character (Ruben, 2019).

In general, performing any profession requires a specific set of skills and qualifications (Al-Awamleh, 2021).

2.1.3. Managerial competencies

Managerial competency is the innate capacity of managers to lead and manage an organization and is demonstrated by their knowledge, abilities, and job management. The success of employing financial applications is significantly influenced by the managerial competencies that they possess. The use, management, adjustment, control, and provision of solutions to challenges and changes that arise in the use of financial applications in the organization are all skills that leaders and managers will possess. Identification of managerial competencies and their development are crucial components of human resource management that are intended to help the firm reach its strategic objectives.

When combined with effective organization management, managerial competencies, or the behavior needed to function at the required level for a manager, become a crucial component of success and consequently a competitive advantage (Dzwigol et al., 2020). Managerial competencies represent a shared combination of skills and abilities working toward organizational performance (Hawi et al., 2015; Mansour, 2023). An effective and successful manager has the following competencies: communication skills, teamwork, pro-activeness, vision, self-management, result orientation, strategic orientation, ambition, persistence, decision-making, risk-taking and creativity (Alrawad et al., 2023; Alshirah et al., 2022; Bhardwaj and Punia, 2013). Conversely, other researchers define the managerial competency as the expert leadership in maximizing the resources through planning,

organization, and monitoring to achieve goals and technology used. Usman et al. (2018) pointed out the importance of managerial competencies in the ability to formulate the vision and mission of the institutions.

Shet and Pereira (2021) define managerial competencies as holistic traits essential for a future workforce, emphasizing adaptability, resilience, and resourcefulness. Usman et al. (2018) characterizes managerial competence as the effective management of resources through planning, organizing, and monitoring. Ruben (2019) underscores the importance of sector-specific knowledge, job experience, and professional leadership growth. Gunawan et al. (2018) describes professional qualities as comprising skills, attitudes, and values inferred from actions.

2.1.4. Strategic readiness

The term strategy originates from the Greek word Stratos, which means army and the word age in, which means leadership. The oldest book talking about strategy was written by (Sun Tzu) who lived in the fifth century B.C. Back then the term strategy was moved from the military field to the economic and business field both of which are based on competition. At the beginning of the sixties of the twentieth century, the first book appeared in 1962 by Chandler entitled Strategy and Structure. In the early eighties, Michael Porter contributed to strategic management and development (Harvard Business Review).

The Oxford Dictionary of English defines readiness as the state of being ready or prepared for something, meanwhile, the strategy is a plan intended to achieve a particular purpose. So, readiness is the preparation to do something (strategy). The importance of strategic readiness lies strongly associated with tangible and intangible organization resources. Through mapping the human organization resources, information, and organization capital to achieve desired goals so strategic readiness is determined as the degree to which the organization meets its challenges today and, in the future (James, 2018; Sharabati et al., 2023). In addition, the study of Kaplan and Norton (2004) explores the significant role of strategic readiness by measuring the alignment of human, information, and organization capital with organization readiness and without which, no strategy can succeed.

Based on the above, strategic readiness is the outcome of an organization effectively executing and implementing its strategy, with its dimensions contributing to and aligning with the organization's preparedness for both current and potential changes in the surrounding environment, as well as its ability to embrace innovation.

2.1.5. Health care information system

In this study, the healthcare information system, serving as a mediator variable, combines the two terms: healthcare and information system (Alsyouf et al., 2022b). Health information technology has become a fundamental tool for modern healthcare systems, underscoring that health information technology is inseparable from healthcare. It plays a crucial role in achieving desired goals and efficiently performing various functions. Health information technology is integrated across all domains of national health systems (Chi et al., 2012).

The study by Sheikh et al. (2021) defines health information technology and information systems as "by using infrastructure data, the health system will

continuously support the plan, policy, public health and individual care". Furthermore, using the health information system enhances the quality, safety and efficiency of care and health.

In today's context, especially during the COVID-19 pandemic and beyond, there has been a rise in the rethinking of the innovation criteria to facilitate facing the potential change or crisis (Hijazin et al., 2023). Nothing will be as successful as technology and intellectual intervention, which contribute to, and advance performance as well as innovation. Watterson (2018) reveal that health information technology has been an area of innovation in health care recently and understanding its use of it leads to the improvement of health behaviors and outcomes. An example of such health information innovation is the electronic medical record. On the other hand, the study of Li et al. (2017) demonstrated that the healthcare technology system is essential for the continuous coordination of healthcare organizations. It is vital to comprehend the underlying healthcare system, its history, infrastructure, and the quality of data registration (Schmidt et al., 2019). In contrast, the study of Fraihat et al. (2023) defines it as a computer system created to create a paperless environment for the hospital's clinical, administrative, and financial operations. Similar to the study by Ahmadi et al. (2017), the healthcare system provides a wide range of services and duties in the highly specialized field of healthcare.

At this juncture, the healthcare information system in this study assumes a significant role as a mediator, linking with the most up-to-date technology intended for use in healthcare institutions, given its aforementioned benefits.

2.2. Theories of the study

2.2.1. Dynamic capabilities

The theory describes how organizations swiftly adapt to strategic decisions and environmental changes by reorganizing internal resources (Muneeb et al., 2023). Chumphong et al. (2020) connect this theory to the Resource-Based View, highlighting its importance for competitive advantage. Cristofaro and Lovallo (2022) explore the theory's foundations in core competence and organizational routines. Valdez-Juárez and Castillo-Vergara (2021) emphasize the importance of technological capabilities to empower SMEs to foster open innovation and eco-innovation, thereby improving overall corporate performance.

2.2.2. Contingency theory

Emphasizes the influence of external factors on organizational structure and management (Csaszar and Ostler, 2020). Also asserts that management effectiveness hinges on aligning organizational characteristics with external contingencies, rejecting a one-size-fits-all approach (Pacheco-Cubillos et al., 2024). They emphasize the impact of the environment, with Araral (2020) discussing technology, structure, and management effectiveness, while Victer (2020) introduces a General Contingency Theory integrating various approaches and emphasizing environmental influences.

2.2.3. The technology acceptance model (TAM)

The Technology acceptance model (TAM) is widely employed for assessing user acceptance of technology (Natasia et al., 2022). Liu et al. (2024) delve into its

application within Library and Information Science and Education, proposing future research directions. Rafique et al. (2020) emphasize its effectiveness in predicting user behavior through perceived usefulness, while Zhong et al. (2021) confirm its relevance amidst rapid technological advancements.

2.3. Literature review

1) Salih and Abdurrahman (2015) study entitled "The Role of strategic intelligence in the development of managers' competencies portfolio a study regarding Jordanian commercial banks. The purpose of this study is to identify the role of strategic intelligence in the development of managers' competencies portfolios in commercial banks. The study was applied to 120 members of three managerial levels at five commercial banks. Data was collected by questionnaires, and the result revealed the development of managers' competencies portfolio results in enhancing efficiencies and depends by nearly a third on variables and practices of strategic intelligence (Ahmad et al., 2023).
2) Liikamaa (2015) study entitled "Developing a Project Manager's Competencies: A Collective View of the Most Important Competencies". The purpose of this study was to contribute to the discussion by reporting the results of project managers' self-evaluations regarding personal and social competencies. Performed by a group of 750 project managers and students in Finland, the self-evaluation method to collect and analyze the data led to a valuable result: a collective of the most important competencies in a project manager, to be considered when recruiting or staffing.
3) Nilashi et al. (2016) study entitled "Determining the importance of hospital information system adoption factors using fuzzy analytic network process (ANP)". This study aimed to provide more insight within the context of Malaysia to understand the significant factors which drive or inhibit the adoption of health information system decisions besides theories of human, organization, technology model fit with system. By identifying these factors and comparing them with 20 hospital experts and decision-makers, the study reveals that the integration theoretical model serves as a tool for healthcare organizations to gain insight into the process of health information system adoption.
4) Lokuge et al. (2019) study entitled "Organizational readiness for digital innovation: Development and empirical calibration of a construct". The purpose of this study was to study the organization's readiness to adopt digitalization for organization development and increase its innovation. This study was working on two papers, the first one describes organization readiness for digital innovation construct as a model of qualitative study, and the other one is a quantitative approach to test this model including seven dimensions (resource readiness, IT readiness, cognitive readiness, partnership readiness, innovation valance, cultural readiness, and strategic readiness.), through instrument was pilot tested with a sample of 189 firms and 378 respondents. The result is the model of readiness is encouraging, and further researches are recommended to be extended to re-testing the readiness model.

5) Afrizal et al. (2019) study entitled "Narrative review for exploring barriers to readiness of electronic health record implementation in primary health care". The purpose of this study was to explore the factors associated with readiness in electronic health record implementation and to identify the barriers related to readiness in health care in a developing country. The study methodology depended on a narrative review of open–source literature. The result explored the barriers that affect readiness. One of these is individual barriers and the other is organisational barriers such as lack of leadership skills, lack of teamwork, and insufficient senior management were the common individual barriers. On the other side, the organization barriers were the lack of time to use computers and unfamiliarity with using a new system.
6) Vaishnavi et al. (2019) study entitled "Modelling the readiness factors for agility in a healthcare organization: TISM approach". The purpose of this study was to identify and analyse the readiness factors and the interaction between reaching agility in a healthcare organization, which is done by total interpretive structural modeling (TISM) through 12 factors of readiness for change in the literature review, which is important for implementing and improving the readiness of agility in healthcare organizations as a result.
7) Ali et al. (2019) study entitled "Contribution of Intellectual Capital Strategic Readiness and Government Innovation in Strengthening the Effect of High-Performance Work System toward Local Government Performance". This study aimed to determine the effect of a high-performance work system on government performance and the strategic readiness of human capital and government innovation capabilities as a mediator. The study design was a quantitative-descriptive analysis, and the sample was 320 government employees from Aceh Province–Indonesia. The result showed the significant impact of the high-performance system on the government performance and the role of strategic readiness of the intellectual capital.
8) Tjahjadi et al. (2022) study entitled "Human Capital Readiness and global market orientation in Indonesian Micro, Small- and-Medium-sized Enterprises Business performance" This study examined the impact of human capital readiness on business performance and whether the effect is mediated by global market orientation. It was a quantitative study by online & offline questionnaires through 433 owners and managers in SMEs in the Provinces of Indonesia. The result: human capital readiness has a direct and positive effect on business performance and a partial effect on the global market orientation as a mediator.
9) Bang et al. (2021) study entitled "Gauging Cameroon's Resilience to the COVID-19 Pandemic: Implications for Enduring a Novel Health Crisis". The study aimed to examine the agility of Cameron's health services in the first five months (March–July 2020) of the COVID-19 outbreak. The diagnosis of the high performance for the sustenance of health care during the pandemic is to find areas for improvement and draw lessons for the future as a motivator. This study conducted qualitative, exploratory, analytical and descriptive research, resulting in significant governance of the impact of fragile Cameroon's healthcare system with consequences of COVID-19 crisis intervention and

concluded that a strong healthcare system for strong health crisis response.

10) Al-Awamleh (2021) study, "The Impact of Strategic Leadership Competencies on the Effectiveness of Jordanian Public Institutions," examines how competencies such as strategic thinking, planning, relationships, and leadership style influence the effectiveness of Jordanian public institutions. Using quantitative analysis, the study surveyed 280 managers from 8 government entities, identifying medium-to-high levels of strategic leadership competencies. It found that Jordanian governmental institutions demonstrate moderate effectiveness in goal achievement, environmental adaptation, and stakeholder satisfaction, influenced by strategic leadership skills.
11) Kruszyńska-Fischbach et al. (2022). Study entitled "Organizational e-Health Readiness: How to Prepare the Primary Healthcare Providers". This study was conducted to clarify the organizational e-health readiness of Polish primary healthcare units through three methods of literature review, a survey with 371 health managers and Partial Least Squares Structural Equation Modeling. It concluded by increasing the knowledge base of recourses and capabilities, which will help the health care organization in the well understanding of the challenges and to change surrounding by adopting e-health technology.
12) Astuti and Augustine (2022) explored the impact of digital technology and agility on company performance, with a focus on the mediation of management accounting systems. Using verification and descriptive analysis, the study surveyed directors, managers, and divisional leaders. Results indicated that integrating digital technology and agility through management accounting systems positively influences firm success.

2.4. Conceptual model and hypotheses

We introduce a conceptual model that highlights the connections among the key variables. Depicted in **Figure 1**, the model provides a framework for comprehending how strategic leadership competencies influence organizational effectiveness.

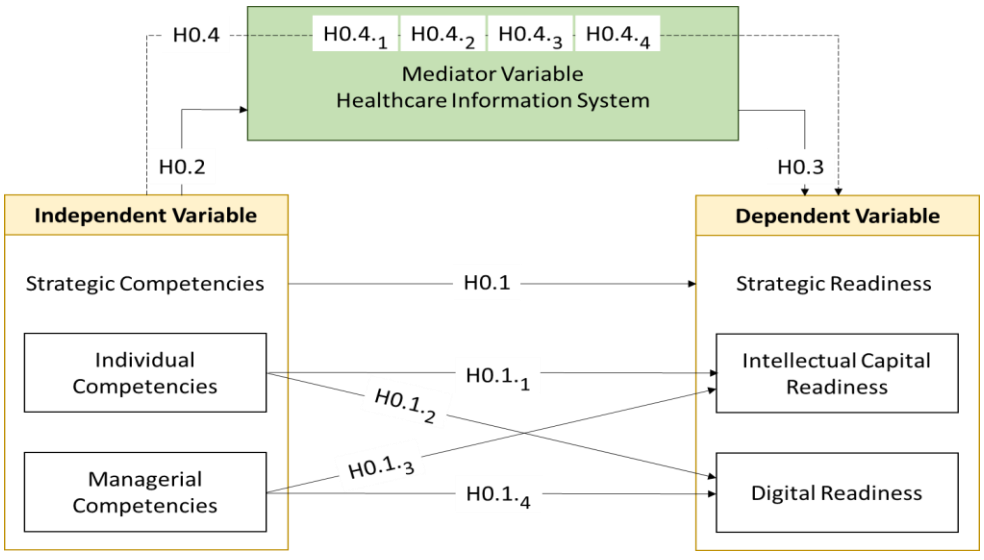

Figure 1. Conceptual model of study.

H0.1: There is no impact of the strategic competencies on strategic readiness in the private hospitals in Amman.

The following sub-hypotheses are derived from it:

- H0.1.$_1$: There is no impact of individual competencies on intellectual capital readiness.
- H0.1.$_2$: There is no impact of individual competencies on digital readiness.
- H0.1.$_3$: There is no impact of the managerial competencies on intellectual capital readiness.
- H0.1.$_4$: There is no impact of the managerial competencies on digital readiness.
- H0.2: There is no impact of the strategic competencies on the health care information system.
- H0.3: There is no impact of the health care information system on strategic readiness.
- H0.4: The healthcare information system does not mediate the impact of the strategic competencies on strategic readiness.

The following sub-hypotheses are derived from it:

- H0.4.$_1$: The health care information system does not mediate the impact of individual competencies on intellectual capital readiness.
- H0.4.$_2$: The healthcare information system does not mediate the impact of individual competencies on digital readiness.
- H0.4.$_3$: The healthcare information system does not mediate the impact of managerial competencies on intellectual capital readiness.
- H0.4.$_4$: The health care information system does not mediate the impact of the managerial competencies on digital readiness.

3. Population, sample and sampling

The current study focused on the largest private hospitals in the city of Amman, each with a capacity of 140 beds or more, according to the private Hospitals Association-Jordan. (Private Hospitals Association Jordan, n.d.), in the following hospitals (Jordan Hospital, Specialty Hospital, Arab Medical Centre, Abdali hospital, Al kindi Hospital).

The total number of workers in these hospitals was (3263) from which a proportional stratified random sample of size 344 was drawn. This sample is considered a representative sample of its community and the results can be generalized (Sekaran and Bougie, 2016).

Instrument development and design

A questionnaire was developed as the study tool, based on data collected from participants in previous studies. Questionnaires are widely recognized as one of the most important data-collection tools in analytical studies (Neuman, 2014).

We employed established measures from previous research to assess the study variables. Specifically, strategic competencies were evaluated across two dimensions—individual competencies and managerial competencies—consisting of a total of (32) items adapted from Lee et al. (2022). Strategic readiness was measured using (28) items, evenly distributed between intellectual capital readiness

and digital readiness, adapted from Ali et al. (2019). Additionally, healthcare information systems were operationalized with (24) items adapted from Nilashi et al. (2016). All variables were rated on a five-point Likert scale, ranging from 1 = strongly disagree to 5 = strongly agree.

To ensure linguistic accuracy, the questionnaire was translated using the back-translation method by two bilingual business professors proficient in English and Arabic. Rigorous testing and refinement, including academic and field piloting, were then conducted to validate measures, ensure reliability, and clarify participant inquiries.

4. Results

4.1. Measurement model evaluation

PLS-SEM was used, and confirmatory factor analysis initially identified latent structures before hypothesis testing. All indicators had factor loadings above 0.60, meeting validity standards (Hair et al., 2021). Metrics for evaluating the model include internal consistency, path coefficients, *R*-squared (R^2), and *T*-values, assessing relationships among strategic competencies, healthcare information systems, and strategic readiness in private hospitals.

4.1.1. Confirmatory validity

The statistical program (Smart PLS) was used to ensure the confirmatory factor validity of the study tool. The results of this analysis were as follows in **Table 1**:

Table 1. The indicator values of the congruence between the expected model and the real data of the study variables.

Indicator	Acceptance Standard	Indicator value strategic competences	Indicator value strategic readiness	Indicator value health care information system	Result
(CMIN/DF)	Greater than 2 and less than 3	2.225	2.10	2.22	Acceptance
(GFI)	Greater than 0.90 and less than 0.95	0.93	0.91	0.93	Acceptance
(AGFI)	Greater than 0.85 and less than 0.90	0.89	0.86	0.88	Acceptance
(CFI)	Greater than 0.95 and less than 0.97	0.96	0.97	0.96	Acceptance
(RMSEA)	Greater than 0.05 and less than 0.09	0.07	0.07	0.06	Acceptance

It appears from the results of the previous table that all validity values were acceptable, and this is an indication that the questionnaire measures what it was intended for.

4.1.2. Reliability

The purpose of the research tool's reliability test is to ascertain the stability of respondents' answers to its different questions, as well as the dependability and stability of the study tool itself (Sekaran and Bougie, 2016). The Cronbach alpha coefficient test was used to confirm the research tool's stability. The results of this analysis were as follows in **Table 2**:

Table 2. Dimensional stability of the study variables using Cronbach's alpha coefficient.

Tool content	Paragraphs	Cronbach's alpha coefficient
Individual competencies	13	0.915
Managerial competencies	11	0.943
Independent variable (Strategic competences)	24	0.992
Intellectual capital readiness	13	0.911
Digital readiness	11	0.921
Dependent variable (Strategic readiness)	24	0.977
Mediator variable (Strategic readiness)	18	0.982

The results of the previous table show that all internal consistency values are greater than (0.70), and this is an indication of the reliability of the questionnaire and that it gives the same results if applied at different times.

4.2. Structural model and hypothesis testing

To test the study's hypotheses and assess the validity of the structural model, we employed the Structural Equation Modeling (SEM) technique using SMART PLS software. As illustrated in **Figure 2**, the results underscore the relationships between strategic competencies and healthcare information systems, with the figure providing a visual representation of key insights derived from the analysis. Following the statistical analysis, the detailed results are presented in **Table 3**.

Table 3. Path analysis of the direct and indirect impact of strategic competencies on strategic readiness.

	Path			Path coefficient	R^2	*t*-value	Sig. level
	Direct impact						
H01	Strategic competencies	⋯⋯▶	Strategic readiness	0.757	0.573	10.53	0.000*
$H0_{1-1}$	Individual competencies	⋯⋯▶	Intellectual capital readiness	0.758	0.574	11.72	0.000*
$H0_{1-2}$	Individual competencies	⋯⋯▶	Digital readiness	0.725	0.525	9.44	0.000*
$H0_{1-3}$	Managerial competencies	⋯⋯▶	Intellectual capital readiness	0.736	0.542	13.56	0.000*
$H0_{1-4}$	Managerial competencies	⋯⋯▶	Digital readiness	0.701	0.491	12.37	0.000*
H0.2	Strategic competencies	⋯⋯▶	Health care information system	0.897	0.805	34.22	0.000*
H0.3	Health care information system	⋯⋯▶	Strategic readiness	0.774	0.599	11.84	0.000*
	Indirect impact						
H0.4	Strategic competencies	Health care information system	Strategic readiness	0.326	0.106	9.66	0.021
$H0.4_{-1}$	Individual competencies	Health care information system	Intellectual capital readiness	0.721	0.520	27.54	0.000*
$H0.4_{-2}$	Individual competencies	Health care information system	Digital readiness	0.695	0.483	10.22	0.000*
$H0.4_{-3}$	Managerial competencies	Health care information system	Intellectual capital readiness	0.702	0.493	9.77	0.000*
$H0.4_{-4}$	Managerial competencies	Health care information system	Digital readiness	0.688	0.473	8.78	0.000*

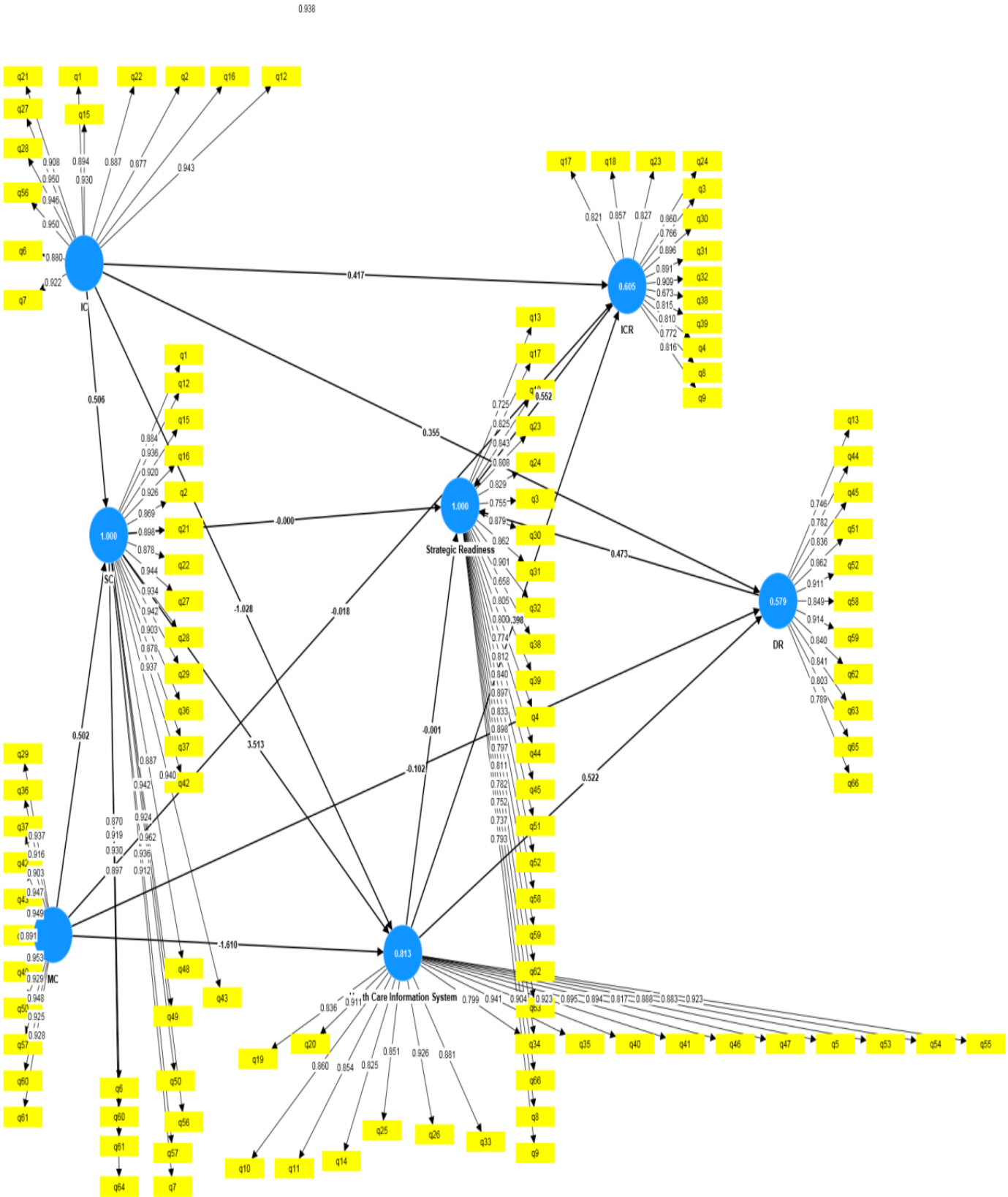

Figure 2. Structural model.

5. Discussion and conclusion

The research conducted on private hospitals in Jordan aimed to explore the correlation between strategic competencies, healthcare information systems, and

strategic readiness. The findings unveiled several significant observations. Firstly, there was a direct influence of strategic competencies on strategic readiness. This indicates that investments in enhancing competencies such as individual and managerial skills can bolster overall readiness within hospitals, highlighting the critical role of human capital in organizational preparedness.

Furthermore, the study revealed that healthcare information systems play a pivotal mediating role. It was noted that healthcare information systems act as mediators between strategic competencies and readiness dimensions (specifically intellectual capital and digital readiness). This mediation implies that while competencies directly impact readiness, the presence of an effective healthcare information system amplifies this relationship by facilitating improved organizational processes and decision-making. This finding underscores the importance of strategic healthcare information systems implementation in augmenting hospital preparedness.

In conclusion, this study underscores the interconnectedness of strategic competencies, healthcare information systems, and strategic readiness in private hospitals in Jordan. By confirming the direct influence of competencies on readiness and identifying the mediating role of healthcare information systems, the study offers practical insights for hospital management and policymakers. Prioritizing competency development alongside effective healthcare information systems implementation emerges as crucial for enhancing hospital preparedness, operational efficiency, and ultimately, patient outcomes. Continuous research in this domain promises to illuminate further strategies for optimizing healthcare delivery not only in Jordan but also globally.

6. Implications for practice and policy

Private hospitals can improve their operational readiness by prioritizing the development of strategic competencies within their workforce. This involves implementing tailored training programs aimed at enhancing individual and managerial skills, thereby fostering intellectual capital and digital readiness. Furthermore, the integration and optimization of healthcare information systems can streamline operations, enhance data-driven decision-making processes, and ultimately elevate overall efficiency and patient care quality.

From a policy perspective, policymakers within Jordan's healthcare sector could explore incentivizing investments in human capital development and information system infrastructure. Policies that promote continuous education and skill enhancement among healthcare professionals could contribute to establishing a more resilient and prepared healthcare system. By aligning strategic actions with these research findings, both hospitals and policymakers can collaborate to advance healthcare delivery and outcomes throughout Jordan.

7. Recommendations

Private hospitals in Jordan should prioritize several actions to enhance readiness and effectiveness. They should invest in competency development, focusing on strategic management, decision-making, and digital literacy. Implementing targeted

training programs at all levels will foster continuous improvement and adaptability. Additionally, promoting leadership through dedicated programs ensures a robust manager pipeline for organizational continuity. Optimizing healthcare information systems is crucial for streamlined processes and efficient decision-making. Fostering a culture of knowledge sharing can stimulate innovation and improve outcomes. Future research should explore how strategic competencies, healthcare systems, and readiness interact, aiding informed decision-making and policy development.

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