

Organisational Readiness for Digital Technologies Adoption in Health Care Facilities: Bibliometric and Conceptual Review

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Abstract

This study examines organisational readiness for digital technology adoption in healthcare facilities through a bibliometric and conceptual review of recent literature. The study responds to the growing need for healthcare organisations to move beyond technology acquisition and assess whether their leadership structures, workforce capabilities, governance arrangements, infrastructure and change-management processes can support effective digital transformation. A quantitative bibliometric approach was used, supported by conceptual synthesis. Relevant peer-reviewed articles published between January 2020 and March 2025 were identified through a structured search of PubMed, Scopus and Web of Science. After applying inclusion and exclusion criteria, 80 articles formed the final dataset for analysis. Bibliometric mapping was conducted to examine publication trends, authorship patterns, journal outlets, country contributions, keyword co-occurrence, co-authorship, co-citation and bibliographic coupling networks. The findings show that organisational readiness research is concentrated around digital maturity, leadership and governance, technological infrastructure, workforce preparedness and change management. Emerging themes include data governance and artificial intelligence governance, indicating that healthcare organisations are increasingly required to manage digital risks, accountability and ethical implementation. The geographical distribution of publications shows stronger contributions from the United States, the United Kingdom, China, the Netherlands and Australia, while African contributions remain limited, particularly from Ethiopia, Ghana and Nigeria. The review concludes that successful digital health adoption depends not only on the availability of digital tools, but also on institutional preparedness, staff competence, interoperable systems and strategic governance. The study contributes by clarifying key readiness dimensions and proposing practical areas for strengthening digital transformation in healthcare facilities.

Keywords

Organisational readiness; Digital health; Healthcare facilities; Bibliometric analysis; Digital transformation

1. Introduction

There are a few modifications that have been made in healthcare organizations because of the rapid development of telemedicine, EHRs, and artificial intelligence. All these technologies make it possible to increase efficiency, provide evidence-based decision making, and ultimately improve patient outcomes. Digital technologies are being used by healthcare organizations worldwide for HIM purposes. While the use of modern healthcare technologies is growing fast, there are inefficiencies that continue to persist within the healthcare field (Tsai et al., 2020). There are several factors that are responsible for the efficient adoption of these digital technologies in an organization. Organizational readiness can be defined by willingness and culture that make it easier for digital technologies to be adopted (Grossi et al., 2021). As such, it is essential that organizations be ready for the successful adoption of digital technology. Even as investments continue to improve in digital health technology, they are still underused, particularly within complex health care systems because of problems such as disruption and non-adaptability (Marwaha et al., 2022). Moreover, the concept of organizational readiness can be vague because it comprises several aspects, among which are leadership, organizational culture, and change management (Gabutti et al., 2023). In addition, the existing body of literature largely represents the perspectives of developed nations, while few studies have explored organizational readiness in developing countries (Li et al., 2022).

1.1 Objectives

Main Objective

To analyse the key themes, trends, and gaps in the literature on organisational readiness for digital technology adoption in healthcare facilities.

Specific Objectives

- i. To identify the dominant conceptual dimensions of organisational readiness discussed in existing studies on digital health adoption.
- ii. To examine how research on organisational readiness for digital health has evolved over time in terms of focus, scope, and thematic development.
- iii. To develop strategic recommendations that can improve organisational readiness for digital technology adoption in healthcare facilities.

2. Literature Review

The success of digital health technologies in healthcare systems relies on several factors. The first one is the degree of organizational readiness and digital maturity. Organizational readiness is understood as the capacity of a healthcare system to introduce new technologies due to such characteristics as organizational leadership, culture, and personnel competence. As Gabutti et al. (2023) recommend, organizational readiness is more than just having enough technology since it needs organizational context, leadership, and the capacity of health care providers to use technologies. Moreover, readiness is not something that happens immediately since it is a dynamic process, where adjustment is continuously taking place alongside leadership and organizational culture acting as change facilitators (Li et al., 2022). There are several maturity models such as those presented by Kolukısa Tarhan et al. (2020) and Duncan et al. (2022), which allow assessing the digital capabilities of an organization and going through the levels of maturity with a focus on such criteria as organizational governance, workforce capacity, and technology. Besides organizational readiness, the introduction of digital health solutions in healthcare organizations implies the integration of technological systems. For instance, Tsai et al. (2020) have shown that implementation of digital health solutions, like EHRs, entails effective integration of various elements, such as hardware, software, and connectivity. Nevertheless, many healthcare providers face challenges with outdated IT infrastructure and poor system integration, hindering the success of their efforts to implement digital health interventions (Marwaha et al., 2022). Integration of digital health interventions in the workflows of care providers requires proper IT infrastructure and coherent systems, according to Geissler et al. (2024). Moreover, the human element of digital health transformation, which consists of attitudes, training, and engagement of healthcare professionals, is a vital component for implementing technological solutions in practice (Borges do Nascimento et al., 2023). It is essential to recognize that a positive organizational climate, along with strong support from management, is one of the main drivers of digital transformation in the field.

3. Methods

3.1 Search Strategy

The research of data was conducted following the PRISMA model and utilized three key databases, namely PubMed, Scopus, and Web of Science, in order to conduct research of peer-reviewed data in the period from 2020 to 2025. Such an approach helped to identify the steps needed for obtaining accurate data.

3.2 Search Terms

Key words such as “organizational readiness,” “digital health,” “digital transformation,” and “adoption of technology” were used to refine the search results. Boolean searching and use of MeSH terms in PubMed increased accuracy, resulting in peer-reviewed English papers published between 2020 and 2025.

3.3 Inclusion Criteria

All the articles that discussed organizational readiness or adoption of digital technology within the healthcare sector published between January 2020 and March 2025 were used for analysis. These articles had to be peer reviewed and come from hospitals and clinics.

3.4 Exclusion Criteria

Articles that were irrelevant or of poor quality, such as editorials, opinion pieces, conference proceedings, or non-peer reviewed articles, were excluded. Articles published prior to 2020 were also excluded to highlight new developments, as were articles that did not discuss organizational readiness or digital tools in healthcare.

4. Data Collection

This particular paper focuses on the measurement of organization's readiness to use digital technologies in healthcare organizations. Specifically, such concepts as Organizational Health Systems Readiness, Digital Maturity and factors that affect the implementation of technology have been addressed. To identify possible gaps in the literature regarding organizational, technological, and human factors of digitalization in healthcare, primary sources from Digital Health and Health Technology Management database have been chosen based on recommendations by Tsai et al. (2020). The systematic review technique allowed providing transparency and reproducibility of the review by using such keywords as "digital health", "organizational readiness" and "technology adoption". The focus was put on maturity models and organizational changes. Evaluations of maturity and readiness provided systematic methods to assess an organization's preparedness for digital transformation (Kolukisa Tarhan et al., 2020). Based on methodological approach, clinical area, authorship, and conclusions made about organizational readiness, articles have been categorized. On the basis of the data analysis, one can define the most common barriers to and drivers of technology adoption (Borges do Nascimento et al., 2023).

5. Results and Discussion

5.1 Numerical Results

5.1.1 Publication Distribution by Year

Every year, the number of published works shows how research about organizational readiness for digital technologies in health care settings has developed over the years. While breaking down the publications over time, some specific time frames showed higher academic interest, causing researchers to speculate about the relationship between these changes and the shifts in the health care system. Table 1 shows the distribution of publications in the years 2020 to 2025 for the dataset analyzed in this research study.

Table 1: Annual distribution of publications (2020–2025)

Year	Number of Publications	Percentage (%)
2020	24	30.0
2021	12	15.0
2022	16	20.0
2023	14	17.5
2024	7	8.8
2025	7	8.8
Total	80	100

The data suggests that 2020 had the most publications, representing the most sizeable portion of the dataset. This correlates with the heightened digital health research activity during the initial months of the COVID-19 pandemic. The multitude of healthcare systems economically reallocating their resources during COVID-19 to digital systems in order to support telehealth (Keesara, Jonas and Schulman, 2020). While publication counts slightly decreased post-2020, research work was consistent in the years to follow. The concerning data suggests that the pandemic nurtured and contributed to consistent research work pertaining to digital transformation and organizational readiness in healthcare systems (Golinelli et al., 2020).

5.1.2 Most Productive Authors

Analyzing authorship reveals which scholars most frequently participate in the advancement of a particular area of research. In bibliometric research, the analysis of a particular author's productivity is critical in understanding the process of knowledge creation, while also pinpointing the scholars' influence on the steering of the scholarly communication. The most productive authors in the dataset are shown in Table 2.

Table 2: Top contributing authors in digital health readiness research

Author	Number of Publications	Affiliation	Country
Krasuska, M.	2	University of Edinburgh	United Kingdom
Cresswell, K.	2	University of Edinburgh	United Kingdom
Tilahun, B.	2	University of Gondar	Ethiopia
Endehabtu, B.F.	2	University of Gondar	Ethiopia
Kanste, O.	2	University of Oulu	Finland

These results indicate that research in digital health readiness does not concentrate on one individual researcher, but rather on input from various contributors. Such an approach is justified in light of interdisciplinary collaboration in the field combining the use of approaches to health informatics, health care management and policy and health (Kraus, Schiavone, Pluzhnikova and Invernizzi, 2021). The involvement of prominent researchers from the United Kingdom, Ethiopia and Finland indicates a cross-national scope of the phenomenon of interest in organisational readiness for digital health. It is crucial to consider contributions of different scholars coming from countries with either sufficient or poor health care resources to identify particular challenges for each case.

5.1.3 Most Influential Journals

Analysing the journals allows one to understand the main publication outlets for research on organisational readiness for digital health technologies. On which journals can one find the most articles? This question helps answer which journals the most scholarly discussions on the adoption of digital health technologies are published. The journals in Table 3 are the most frequent contributors to the dataset analysed in this study.

Table 3: Leading journals publishing research on digital health readiness

Journal	Number of Articles	Publisher
Journal of Medical Internet Research	8	JMIR Publications
BMC Health Services Research	7	Springer Nature
International Journal of Medical Informatics	4	Elsevier
Digital Health	3	SAGE Publications
Journal of Advanced Nursing	3	Wiley

The Journal of Medical Internet Research has the highest number of articles concerning the adoption of digital health technologies and readiness of the health care organizations. This journal specifically covers healthcare information technologies and digital innovations in healthcare, making it a primary journal in research of telehealth, e-health, and digital health. As stated in the journal, Alturkistani et al. (2020) consider it to be an important journal for systematic reviews and studies in the area of digital health technologies and their implementation. The BMC Health Services Research and the International Journal of Medical Informatics journals, in the same way, underscore the different disciplines in research in this area by covering studies in the intersection and fusion of health care management, health informatics, and organizational studies. Their significant presence in the dataset shows that adoption of digital health technologies is researched more in an integrated way from the both the technological and organizational sides.

5.1.4 Geographic Distribution of Studies

The analysis of the geographic distribution of the publications provides knowledge about which nations are the leading contributors to research on organizational readiness for the adoption of digital health. For the country affiliation of the authors, the country-based analysis helps to understand the global trends of research and to see the presence of research output focused on certain areas. Table 4 shows the distribution of countries of the publications found in the dataset.

Table 4: Country distribution of publications

Country	Number of Publications
United States	16
United Kingdom	12
China	9
Netherlands	7
Ethiopia	6
Australia	5
Canada	5
Ghana	4
Nigeria	3
Finland.	13

Studies related to digital health, however, focus mostly on the developments and concerns of high income nations, especially the United States of America and the United Kingdom, which have significantly invested in research on digital health as well as in the development of infrastructures regarding this topic. According to the OECD report in 2020, the two mentioned nations have served as trailblazers for the creation of digital health policy, including the first instances of electronic health records and telemedicine services. However, studies conducted by researchers from Africa, specifically from Ethiopia, Ghana, and Nigeria, are also very important. Although most of these are about the issues of implementation of digital health, there is an imbalance in the research landscape.

5.1.5 Keyword Frequency Analysis

Keywords show what the main themes are in a bibliometric dataset. They show the main focus of each piece in the dataset, as such they give insight into the dominant topics explored by the authors. Keywords may also show trends in the main themes and how they link to the development of the field as a whole. The most frequently occurring keywords in the dataset are in Table 5.

Table 5: Most frequently occurring keywords

Keyword	Frequency
Digital health	21
Telemedicine	17
Electronic health records	16
Digital transformation	13
Organisational readiness	11
Health information systems	10
Telehealth	9

The keyword analysis shows that digital health the most common term shows that a lot of relevant research is being done on the impact of digital technologies on the delivery of healthcare services and the efficiency of systems. Digital health incorporates technologies like telehealth systems, mobile health monitoring, and electronic health records which assist in the management and support of decision making in healthcare (Yusif, Hafeez-Baig, Soar and Lai, 2020). During the COVID-19 pandemic telemedicine services increased as healthcare professionals provided services without in-person contact (Iyengar et al ,2020). The inclusion of the keywords digital transformation and organisational readiness shows the focus on the organisational dimensions of the adoption of digital health.

5.2 Graphical Results

5.2.1 Keyword Co-Occurrence Network

The network analysis of the keywords that appear together in the digital health literature shows that there are three prominent topics in this area. First, there is the topic of digital health technologies like telemedicine, telehealth, EHRs, and mHealth that make everything convenient, effective, and efficient (Yusif et al., 2020). Second, there is the topic of organizational readiness challenges that include leadership, readiness of employees, governance, and change management needed to implement new technologies. Third, there is the topic of future trends in this area, such as AI governance, digital maturity, and HIS integration (Ni & Jia, 2025). It could be argued that current research does not focus on technologies but on organizational readiness for their implementation (Figure 1).



Figure 1: Keyword co-occurrence network of digital health readiness research

5.2.2 Co-Authorship Network

The co-authorship network illustrates the relationships of collaboration among the contributors of readiness in digital health. In a bibliometric analysis, co-authorship refers to the relationships that explain how knowledge is produced within a given set of collaborative research networks. The network visualization developed in this study identifies a number of clusters of authors who repeatedly work together in the research of digital health implementation and innovations in the field of healthcare. According to the findings, there is evidence of a number of small research networks, but no clear indication of any dominating network in the subject matter being studied. Therefore, it can be inferred that this field of study is currently in its early stages of development, with the research results distributed across multiple locations, both centers and institutions. As per the description provided by Kraus et al. (2021), digital

health transformation studies have an interdisciplinary approach, and it requires cooperation among various fields including health informatics, healthcare management, and clinical medicine (Figure 2).

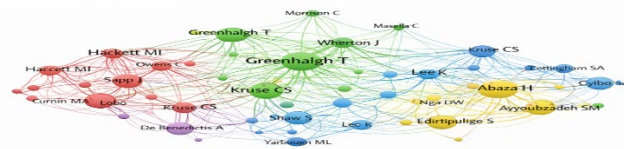


Figure 2:Co-authorship network of authors

5.2.3 Co-Citation Network

The co-citation network shows the most common co-citation for the papers in the dataset. In bibliometric studies, co-citation helps identify the intellectual pillars of a research area. This is because the papers co-cited address similar theories, or conceptual frameworks. The co-citation network for this research shows some of the seminal works in the research of digital health readiness that are most cited. Many of these studies are seminal works on the adoption of digital health technologies, frameworks of organisational readiness, and strategies of transformation in the healthcare system. Burton-Jones, Akhlaghpour, Ayre, Barde, Staib and Sullivan (2020) contend that assessing digital transformation in the health sector requires an institution view, which takes into organisational processes, governance, and technology. The co-citation network clustering depicts a research field that is well established in health informatics, implementation science, and organisational management. These frameworks inform the majority of empirical research that deals with the ways healthcare organisations implement and scale the use of digital technologies in clinical practice. The network also indicates the research on organisational readiness for digital health adoption is interdisciplinary (Figure 3).

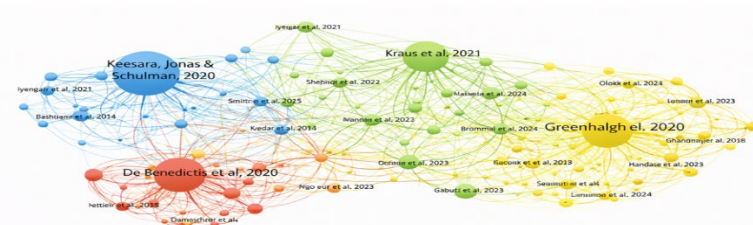


Figure 3:Co-citation network of influential publications

5.2.4 Bibliographic Coupling Network

The term bibliographic coupling describes a technique that is utilized to establish relationships among research publications by virtue of shared citation. If references share similarities among a number of research papers, then there exists bibliographic coupling between those documents. Bibliographic coupling is an instrument that facilitates identifying relevant literature that deals with the same research problems and theories. Bibliographic coupling in this case showed a number of clusters in digital health adoption. One of the clusters deals with electronic health records and the readiness of the medical professionals to implement new technologies. The second one highlights telemedicine and remote healthcare systems and its connection with information and communication technology. The third emerging cluster deals with organizational change and digital transformation strategies in healthcare organizations (Gabutti et al., 2023) (Figure 4).

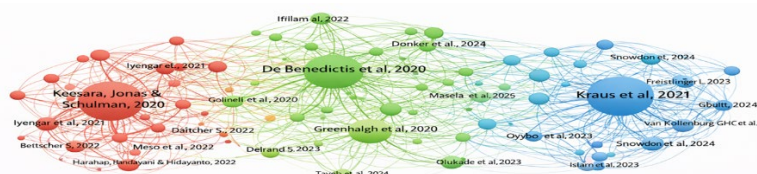


Figure 4:Bibliographic coupling network of publications

5.2.5 Overlay Visualization

An overlay visualisation provides insight on the progression of research topics over a defined period. In this visualisation, different colours represent the average publication year of articles linked to particular keywords. This shows researchers which topics were previously researched and which ones have recently emerged. The overlay visualisation for this study shows that earlier research from the dataset concentrated on telemedicine, mobile health, and electronic health records. These were some of the very first digital tools used by healthcare organisations during the first phase of the digital transformation of healthcare. During the COVID-19 pandemic, telemedicine was very significant because health services needed to be provided remotely (Greenhalgh, Wherton, Shaw and Morrison, 2020). The recent articles in the dataset revolve around digital transformation, organisational leadership, digital maturity and the governance of artificial intelligence. These topics illustrate the awareness of the organisational requirements for digital health adoption beyond the mere incorporation of new technologies. Therefore, the overlay visualisation shows that the focus of research on digital health has shifted to the organisational and strategic aspects (Figure 5).



Figure 5: Overlay visualization showing temporal evolution of research topics

5.2.6 Density Visualization

Density visualization highlights focuses of the datasets by creating density maps that focus on the keywords that repeat the most. VOSviewer creates maps where the higher the density is, the more topics are represented in the literature. Creating the density visualization for this analysis shows that most of the literature of digital health, telemedicine, electronic health records, and digital transformation, as research linked to digital is mostly present after the pandemic, there has been a focus on the organizational and managerial elements that digital technology use in health systems (Angerer, Stahl, Krasniqi and Banning, 2022). Visualization also provides less dense areas that show new emerging examples such as. AI governance, digital maturity models, and data governance frameworks These show a higher focus as healthcare organizations become more digitally advanced. The density visualization shows old and new research themes and emerging topics that help shape the research of digital health readiness (Figure 6).



Figure 6: Density visualization of research themes

5.3 Proposed Improvements

5.3.1 Organisational Leadership and Governance

Organizational leadership and governance have been known to be key components in ensuring success in digital health technologies. Different research studies have confirmed that good leadership is necessary for proper management and successful implementation of digital health systems. Good leadership ensures unity and coherence in digital health projects by ensuring that resources are appropriately allocated according to the goals of the organization. Poor leadership can lead to a lack of coherence in digital health projects since the organization will not provide adequate backing. Authors such as Brommeyer et al. (2024) and Krasuska et al. (2021) have highlighted the significance of governance and strategy integration in digital health projects.

5.3.2 Workforce Digital Competency

The digital competency of the workforce plays an important role in the effective integration of the digital technology in healthcare. Research indicates that digital literacy, readiness, and digital competence play a significant role in the adoption of digital technologies by health professionals. Problems will come up when the healthcare professionals have insufficient knowledge or skills to use such technologies effectively as this can hinder the effectiveness of implementing systems such as electronic health records (Shiferaw et al., 2020). Solving these problems through proper training and participation of the users is necessary. According to de Benedictis et al. (2020), this must be done.

5.3.3 Digital Infrastructure Readiness

Preparation of the digital infrastructure is a prerequisite to the successful uptake of digital health technologies. Reliable and interoperable IT systems are key requirements to integrating digital health in the provision of health services. Evidence has shown that lack of integration and information systems challenges prevent the uptake of digital health technologies (Harahap et al., 2022). The World Health Organization has stated that successful implementation of digital health innovations requires integration of health information systems (WHO, 2021). It is therefore crucial for health facilities to integrate IT systems for successful digital health implementation (Table 6).

Table 6: Strategies for Improving Organisational Readiness for Digital Health Adoption

Identified Theme	Key Challenge	Recommended Strategy	Expected Impact
Organisational leadership and governance	Weak leadership coordination and absence of digital governance structures	Establish formal digital governance committees and develop institutional digital transformation strategies	Stronger leadership direction and improved coordination of digital initiatives
Workforce digital competency	Limited digital literacy and resistance to new technologies among healthcare staff	Introduce continuous digital training programmes and role-specific competency development frameworks	Improved staff confidence and increased adoption of digital health systems
Digital infrastructure readiness	Fragmented information systems and inadequate technological infrastructure	Invest in interoperable digital platforms and integrated health information systems	Improved system integration, efficient data exchange, and enhanced healthcare service delivery

5.4 Validation

5.4.1 Dataset Validation

In validating the dataset, the publications were reviewed for possible relevance to the organisational readiness and adoption of digital technology in healthcare. During the first phase of data cleaning, duplicates and data and studies outside the organisational scope of the relevant healthcare were omitted. Publications were included if they discussed digital health technologies, including telemedicine, electronic health records, and the digital transformation of healthcare systems, and were published between 2020 and 2025. This was in line with the study objectives and ensured the dataset focused on a specific dimension. Mauco, Scott and Mars (2020) underscore the relevance of study selection in assessing digital health readiness, as every health system has a distinct context for implementation.

5.4.2 Network Validation

Network validation assessed stability and interpretability of bibliometric clusters formed through the VOSviewer software. Upon the construction of networks for keyword co-occurrence, co-authorship, co-citation, and bibliographic coupling, the clusters were subjected to evaluation to determine if the aggregated items flagged any significant thematic connections. For illustration, the repeated and consistent emergence of clusters comprising keywords related to digital health, telemedicine, and electronic health records, calls for notable conceptual associations. Furthermore, in order to establish consistency, the clusters were examined across various visualization types. In bibliometric clustering, Romero, Guédria, Panetto, and Barafort (2020) assert that the network structures must be evaluated to see if there exists sufficient relationships to justify the dominant structures pertaining the field of research under consideration (Figure 7).

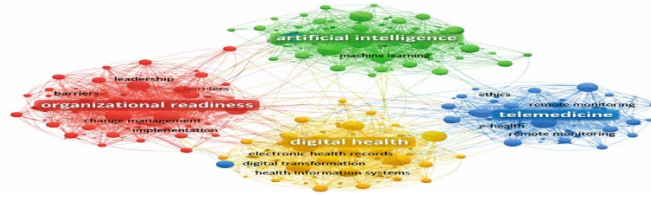


Figure 7: Validation of bibliometric clusters

5.4.3 Consistency with Existing Literature

The final step of validation consisted of comparing the bibliometric outcomes and the results of prior reviews of the literature pertaining to digital health. The thematic clusters of this analysis revealed organisational readiness, telemedicine, e-health, and digital transformation. These themes reflect closely the findings of the studies that focus on the organisational aspects of digital health adoption. For example, Yusif, Hafeez-Baig, Soar, and Lai (2020) highlight the role of organisational capacity, technological readiness, and sufficient health workforce in the successful implementation of digital health. Similarly, Angerer, Stahl, Krasniqi, and Banning (2022) highlight the urgent need for research on the managerial and organisational aspects of digital health. The alignment of these studies with the bibliometric findings reinforces the analysis.

6. Conclusion

The organisational readiness to adopt digital technologies in the health sector was evaluated in relation to the literature review conducted between 2020 and 2025 through a bibliometric analysis and conceptual literature review. As a result of this study, certain dominant topics have been revealed in this body of literature that includes digital maturity, organisational leadership, technology infrastructure, etc. At the same time, growing research interests have emerged in relation to data governance and artificial intelligence as major topics for future research. Another observation made during this process was that a relatively small number of papers were written in countries like Ethiopia, Ghana, and Nigeria as the vast majority of publications come from other countries, for example, the United States, the United Kingdom, China, the Netherlands, and Australia. It is also worth pointing out that few articles focused on comparing organisational readiness of public and private hospitals. Overall, it can be observed that research interests are now shifting from focusing on the technology itself to factors affecting their organisational adoption.

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