

Article

Knowledge Management and Sustainability Performance of Hospital Organisations: The Healthcare Managers' Perspective

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Abstract: In a changing context, the use of knowledge management (KM) generates value and a long-lasting competitive advantage. As a critical issue for societal development, sustainable organisations must consider the relationship between KM and healthcare. They must investigate how knowledge is created and identify potential predictors of knowledge-sharing behaviour to support a hospital's long-term knowledge-management strategy. Managers could benefit from KM strategies to improve the performance of hospitals and other healthcare organisations. This study aimed to determine the knowledge management and sustainability performance of a hospital organisation based on the perspective of the healthcare managers. A cross-sectional research approach was employed involving the healthcare managers of a government-subsidised hospital in the Hail Region of Saudi Arabia. The study was conducted between September and October 2022. The results demonstrated that knowledge management was commendable (4.41 ± 0.470) and had high sustainability performance (4.28 ± 0.558). Predictors for knowledge management included gender ($B = 0.201$; $p = 0.002$), managerial position ($B = 0.285$; $p < 0.000$), years of experiences as manager ($B = 0.319$; $p < 0.000$) and educational attainment ($B = 0.092$; $p = 0.003$). The predictors for sustainability were gender ($B = 0.023$; $p < 0.000$), managerial position ($B = 0.352$; $p < 0.000$) and years of experience as a manager ($B = 0.0648$; $p < 0.000$). The study found that knowledge management was a predictive factor in sustainability regarding economic ($B = 0.735$; $p < 0.000$), social ($B = 1.028$; $p < 0.000$), environmental ($B = 0.774$; $p < 0.000$), technical ($B = 0.751$; $p < 0.000$) and governance ($B = 0.526$; $p < 0.000$), while knowledge management had a strong correlation to sustainability performance ($R = 0.663$; $p < 0.000$). Therefore, knowledge management for learning should be consistently created and shared to keep members involved in the core of operations. When knowledge is put into practice, it can help an organisation innovate, sustain better performance and guarantee long-term success. These study findings may additionally persuade workers to put more effort into knowledge management.

Keywords: healthcare managers; knowledge management; performance; sustainability



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1. Introduction

Individuals and organisations can benefit from knowledge as a valuable resource. It represents a cognitive framework that enables the meaning and comprehension of raw data and information [1] and, on occasion, leads to wisdom [2]. Management embraced knowledge, and a contemporary business philosophy piqued the interest of executive officers, researchers and scholars in the 1990s [3]. This has increased and sustained interest in knowledge management (KM). Knowledge management is defined as a set of procedures with the goal of turning data into knowledge or useful information for an organisation's advancement [4]. It is thought to both serve as a crucial resource and to improve market competitiveness for a company [5]. While it is vital to develop an organisation's core knowledge, doing so requires gradually and carefully maximising the benefits and feedback

from its knowledge assets [6]. In healthcare, knowledge management is paramount to the healthcare providers' ability to provide high-quality treatment. Therefore, it is important to raise awareness of the value and potential of knowledge management in the field. In order to achieve long-term and sustainable goals by enhancing organisational performance based on learning, KM is an integrated system that significantly combines human resources, processes and state-of-the-art within an organisation [7]. KM is thought to function both as an essential resource for the organisation and as a means of improving market competition [8]. Hospital owners, governments and managers now prioritize improving the KM of the financial sector. The performance of organisations is now directly impacted by knowledge management. Organisations have invested in the development of KM in Gulf countries such as the Kingdom of Saudi Arabia (KSA). Their main objective has been to create and draw in human capital and resources that enable them to realise their goals [9]. In the healthcare sector, numerous studies have found out that KM has a positive effect on hospital performance [7,10–12]. Nonetheless, despite the Gulf Cooperation Council (GCC) countries' growing investment in knowledge management, several shortcomings and difficulties with its implementation have had a direct impact on organisational performance [13]. Alghatani [14], for example, found that the most challenging problems in its implementation include the lack of training programs for knowledge management, the absence of business cases for it, the lack of employee commitment and the lack of a framework for knowledge management information. Addressing concerns in its implementation is of utmost concern to an organisation because it is known to significantly improve organisational performance, resource management and the achievement of sustainable competitive advantage in a variety of industries [15].

Coulson-Thomas suggested KM as a more expedient, effective and cost-effective path to improved organisational performance, particularly in service-based organisations [16]. In addition to offering a practical solution for managing knowledge in a service sector that relies heavily on knowledge, KM also promotes sustainable development by managing organisational resources well [17]. Understanding that healthcare needs are not static and that they must advance in a cutthroat environment is crucial [15]. KM has made significant contributions to resource management, performance enhancement and gaining sustainable competitive advantage across a variety of industries. As one of the intellectual capital and sustainable organisational practices, KM can help the healthcare industry gain a long-term sustainable competitive advantage [18]. KM guarantees long-term, high-quality patient care in addition to assisting hospitals in decision-making [15]. In terms of sustainable performance, knowledge-based hospitals have a good chance of generating high returns in a sustainable manner [19].

Sustainability performance can be defined as performance across all domains and for all corporate sustainability drivers [20]. Sustainability can be viewed as a continuum of work practices, goal attainment and developmental processes [21]. Techniques for sustainable development could be based on KM [22]. Accordingly, developing KM is among the efforts made by hospitals to achieve sustainable success. Hospitals must, therefore, rely more heavily on their knowledge-generating resources and processes [23]. KM is viewed as a new development concept in the context of sustainability that aims to improve adherence to the principles of economic, environmental and social sustainability [24].

Healthcare managers can accomplish the objectives of their organisations through the application of KM, which can result in a healthcare system that is sustainable [15]. It is crucial to remember that the KM process can have a significant impact on social and economic outcomes at the organisational level, as well as improvements in healthcare quality [24]. Healthcare professionals can process information about the healthcare sector and, using their expertise and knowledge, can enhance the system's performance and the way their patients are managed [3]. Additionally, patients can learn more from a variety of resources, including the internet, social media and other medical staff [3]. Patients can then decide or alter their behaviour and thoughts and demand the best service possible

in this way. The effectiveness of a system depends on how well the knowledge process is managed.

While earlier studies found that knowledge management influenced sustainability performance, it needs to be examined in the healthcare context. To the knowledge of the researchers, no previous studies have been conducted that are related to and focused on the knowledge management and sustainability performance of healthcare in Saudi Arabia.

The focus of this study was on gaining a grasp of what knowledge management could accomplish to maintain organisational performance. This can be understood in the context of anticipating elements in the healthcare system that require change, as seen from the perspective of healthcare management. One of the main issues considered was a lack of knowledge about what sustainability is and how to implement it in hospitals. To understand this, healthcare managers should consider the variables that may predict their ability to comprehend the context. With these considerations, this study aimed to determine the knowledge management and sustainability performance of a hospital organisation from the perspective of the healthcare managers.

2. Methods

2.1. Design

This study employed a cross-sectional research approach to determine the knowledge management and sustainability performance of hospital organisations.

2.2. Participants

The study participants were the healthcare managers of the hospitals of Hail. They included top, middle and low-level managers (e.g., hospital directors, nursing directors, supervisors and department heads) employed by government hospitals in the Hail Region of the Kingdom of Saudi Arabia. The sample size, with a 95% confidence interval, was calculated using the Raosoft online calculator (accessed on 10 October 2022), which showed that 210 individuals were needed. Convenience sampling was employed because the study's emphasis was on relationships among factors rather than target audience distribution. Regardless of nationality, the managers were invited to take part in the study. To be eligible, they had to be willing to take part in the study and to have more than a year of work experience working for a government-subsidised hospital in the Kingdom of Saudi Arabia.

2.3. Data Collection

A Google Form survey was employed to gather the data. Its URL was sent to the invited individuals through WhatsApp. Information regarding the study was made available to the participants through the link (e.g., the purpose of the study and their level of engagement). If they chose to participate, they were also provided with a notice instructing them to click the link button and complete the questionnaire. The data collection was conducted between September and October 2022.

2.4. Questionnaires

Two questionnaires were adapted and used in this study. The first involved knowledge management. Localisation, Knowledge Usage, Knowledge Acquisition and Development, Knowledge Codification and Knowledge Transfer were the five indicators utilised to gauge the knowledge management variables [25]. This questionnaire used a 5-point Likert scale from (1) strongly disagree to (5) strongly agree. The higher the mean, the better the knowledge management. An example of a question in the knowledge part is, "In any organization knowledge must be localized to include all activities that indicate where knowledge exists".

The second is the sustainability performance measurement developed by Caiado et al. [26], which was used to measure sustainability variables. It had five dimensions with 31 items, including (1) economical, with two items, (2) social, with nine items, (3) environmental, with ten items, (4) governance, with seven items, and (5) technical, with three items. The 5-point Likert-type scale (1, ‘very low’, to 5, ‘very high’) was used here as well. The higher the score, the higher the sustainability performance. Examples of question statements are as follows, under the economical dimension, “Cost performance”, for the social dimension, “Social Inter-firm collaborative capabilities”, environmental, “Environmental protection”, under the technical dimension, “Quality management” and for governance, “Corporate reputation”.

The sustainability performance in the current study’s knowledge management questionnaire had an internal reliability of 0.89 and an outstanding internal consistency of 0.83. Prior to the actual study, a pilot study was performed using the two questionnaires to forecast how the participants would respond.

3. Ethical Considerations

The University of Hail Institutional Review Board cleared and approved this study (H-2022-051, dated 15 April 2022).

4. Data Analysis

SPSS version 26 was used to examine the data. The individuals’ demographic characteristics were ascertained utilising frequency and percentage. Multiple regression was used to predict the factors that would influence knowledge management and sustainability performance. Pearson’s correlation coefficient was used to examine the association between knowledge management and sustainability performance (bivariate r). The following presumptions were taken into account in using the aforementioned tests. For example, the model should be dependable, and the factors it takes into account should be relevant. The model should not be non-linear but linear instead. Variables need to be distributed normally, and all projected variable levels should have the same variance.

5. Results

The demographic profiles of the participants are presented in Table 1. A total of 210 healthcare managers of the hospitals of Hail were included in the study. Of the 210 participants in the study, at least 52.4% of them belonged to the 40 and below age range, dominated by males (55.7%) and were in low-level management (37.2%). The participants had at least 6 to 10 years of experience as managers (38.1%), and most had attained a bachelor’s degree (40.9%).

Table 1. Demographic profiles of participants. N=210.

		Frequency	Per cent
Age	40 and below	110	52.4
	40 and above	100	47.6
Gender	Male	117	55.7
	Female	93	44.3
Managerial Position	Top management	62	29.5
	Middle Management	70	33.3
	Low-Level Management	78	37.2
Years of experience as a manager	1–5 years of experience	78	37.1
	6–10 years	80	38.1
	11 years and above	52	24.8
Educational Attainment	Bachelors	86	40.9
	Masters	72	34.3
	Doctorate degree	52	24.8

The descriptive statistics on knowledge management and sustainable performance are displayed in Table 2. The knowledge management of the healthcare managers was commendable (4.41 ± 0.470) and had high sustainability performance (4.28 ± 0.558).

Table 2. Descriptive statistics on knowledge management and sustainable performance.

	Minimum	Maximum	Mean	Std. Deviation
Knowledge Management	3.2	5	4.41	.470
Sustainability Performance	2.77	4.94	4.28	0.558

The demographic profile predictors for knowledge management are illustrated in Table 3. Multiple regression was used to analyse the data. Gender ($B = 0.201$; $p = 0.002$), managerial position ($B = 0.285$; $p < 0.000$), years of experience as a manager ($B = 0.319$; $p < 0.000$) and educational attainment ($B = 0.092$; $p = 0.003$) were found to be predictive factors for knowledge management.

Table 3. Demographic profile as Predictors to knowledge management.

	B	Std. Error	t	Sig.
(Constant)	2.664	0.290	9.197	0.000
Age	0.063	0.070	0.897	0.371
Gender	0.201	0.063	3.178	0.002
Managerial Position	0.285	0.071	4.031	0.000
Years of Experience as a Manager	0.319	0.068	4.664	0.000
Educational Attainment	0.092	0.048	1.943	0.003

Table 4 shows the demographic profiles predictors for sustainability. Multiple regression was used to analyse the data. Gender ($B = 0.023$; $p < 0.000$), managerial position ($B = 0.352$; $p < 0.000$) and years of experience as a manager ($B = 0.0648$; $p < 0.000$) were found to be predictors for the sustainability performance of an organisation.

Table 4. Demographic profile as a predictor of sustainability.

	B	Std. Error	t	Sig.
(Constant)	1.794	0.29	6.196	0
Age	0.023	0.07	0.333	0.74
Gender	0.247	0.063	3.89	0
Managerial Position	0.352	0.071	4.967	0
Years of Experience as a Manager	0.648	0.068	9.49	0
Educational Attainment	0.077	0.048	1.61	0.109

Table 5 presents knowledge management as a predictor for sustainability. It was found that knowledge management was indeed a predictive factor for sustainability regarding economical ($B = 0.735$; $p < 0.000$), social ($B = 1.028$; $p < 0.000$), environmental ($B = 0.774$; $p < 0.000$), technical ($B = 0.751$; $p < 0.000$) and governance ($B = 0.526$; $p < 0.000$).

Table 5. Knowledge management as predictor of sustainability.

	B	Std. Error	t	Sig.
Economical	0.735	0.063	11.661	0.000
Social	1.028	0.080	12.883	0.000
Environmental	0.774	0.070	11.032	0.000
Technical	0.751	0.088	8.570	0.000
Governance	0.526	0.068	7.705	0.000

Table 6 exhibits the correlation between knowledge management and the sustainability performance of the organisation. Knowledge management had a strong correlation with sustainability performance ($R = 0.663$; $p < 0.000$).

Table 6. Correlation between knowledge management and sustainability performance.

	Knowledge Management	Sustainability Performance
Knowledge Management	Pearson Correlation	1
	Sig. (2-tailed)	0.663 **
		0.000

** . Correlation is significant at the 0.01 level (2-tailed).

6. Discussion

The aim of this study was to determine the knowledge management (KM) and sustainability performance (SP) of the hospital organisations as perceived by the healthcare managers. As to the knowledge management of healthcare managers they had commendable knowledge management, which means that they understand that it plays an important role in healthcare operations in such a way that their organisation will deliver quality care. Indeed, KM can assist managers in structuring the knowledge required for effective management at various levels of the organisation [27]. Furthermore, knowledge management can enhance interaction and alleviate professional tensions that can emerge from sharing knowledge [28]. Knowledge management could also be used much more effectively than it is now to improve the financial performance of health care [27]. A better understanding of how knowledge management affects financial performance will help the hospital better handle its mounting financial pressures. This promotes continuous improvement in healthcare operations, and it is one of the most critical factors in determining a healthcare organisation's future success and overall performance. Meanwhile, the sustainability performance of the organisation scored high, which implies that the hospital conducts business operations in a way that is holistic in terms of economy, social responsibility and environmental impact. Healthcare managers have a unique opportunity to serve as role models for sustainability, and they are required to help bring about the requisite changes towards more sustainable practices. According to the study of Mehra and Sharma [29], implementing healthcare initiatives into practice via circular workflows, integrated healthcare facilities planning, waste management, sustainable procurement and employee satisfaction strategies would reduce the cost of operating healthcare facilities, increase profits, boost patient satisfaction and make healthcare services more affordable. This finding contributes to healthcare settings. Workplace attractiveness, enhanced employee retention and employee well-being can all be influenced by knowledge management. This will lead to new methods of both managing training in healthcare workplaces and the work of a variety of professional healthcare groups. Moreover, it is implied that, in order to achieve sustainable healthcare, social and environmental sustainability are linked through economic sustainability practices.

With reference to the predictive factors of knowledge management, we found that gender, managerial position, years of experience as a manager and educational attainment were predictive factors of knowledge management, which means that gender, managerial position, years of management experience and educational attainment were all strong contributing factors for knowledge management. This finding corroborates those of other studies. For example, it has been considered that gender, age, experience and management level would all act as influencing variables in knowledge management processes [30]. The Ko and Dennis [31] investigations drew the conclusion that time and experience were important for determining the advantages that workers gain from utilising knowledge management systems. Less experienced workers need more time before they can benefit from new knowledge, while more experienced workers are better able to integrate new knowledge more quickly and thus realise the benefits of new knowledge sooner [31]. These predictive factors for knowledge management can contribute to hospital and academic policymakers that, when making strategic decisions, should take gender differences,

managerial position, years of management experience and educational attainment into consideration if they intend to implement knowledge management processes.

Concerning the predictive factor of sustainability performance, this study established that the sustainability performance of healthcare managers was found to be predicted by gender, managerial position and years of experience as a manager, implying that, in all areas and for all drivers of corporate sustainability, gender, managerial position, years of management experience and educational attainment were all significant key contributors. An earlier investigation indicated that the attitudes and behaviours of healthcare managers differed depending on the roles they played in society, for example, based on gender, managerial position, years of management experience, educational attainment and similar cases [32]. Females were more corporate sensitive than males when it came to general organisational issues, and they were more inclined to voice worries about how their spending might affect society and the environment [33,34]. Individuals in higher managerial positions have fewer economic problems and can devote more time to other concerns while simultaneously having a greater willingness and ability to pay for goods and having more time to deal with corporate issues as well [35]. According to most studies, younger people (those with less experience) are more sensitive to and concerned about corporate issues [36]. However, Liu et al. [37] discovered a favourable correlation between organisational concerns and those with more or less experience. Although the results of previous studies were varied and equivocal [38], our research supported the majority of the proposed hypotheses. These results contribute to policymakers in that they can test these relationships in the investigated context, and they can provide companies with more prominent roles with better insights.

It was found that knowledge management was indeed a predictive factor for sustainability, specifically with economic factors, which means that knowledge application effectively boosts a hospital's ability to use external resources for better market performance, operational capability development, organisational performance enhancement and external cooperation. The greater this knowledge application within the firm, the better-prepared companies are to absorb new environmental knowledge, incorporate it into normal business processes and modernise operational capabilities in proportion to unique environmental needs [39]. In addition, knowledge management was also a predictor for the social dimension, which means that it is viewed as a brand-new paradigm for development that seeks to improve adherence to social sustainability rules [40]. Given the growing demand for sustainability aspects, finding better ways to improve knowledge management procedures and methods for evaluating social consequences is becoming increasingly important [41]. From the perspective of the social dimension of sustainability, from employees and customers to the local communities near their facilities, organisations must consider the various stakeholders in their operations. Hospitals must consider the various stakeholders in their operations, from employees and patients to the local communities near their facilities, from the perspective of the social dimension of sustainability. Consequently, to be socially responsible, organisations must take responsibility for the welfare of these stakeholders [42].

Knowledge management was also a predictor for the environment, which means that the more significant this meaningful learning within an organisation, the better able an organisation is to digest new environmental understanding, integrate it into routine business operations and update operational effectiveness in line with changing ecological requirements. At the macro level, sustainability is a way of thinking that aids in understanding environmental realities, the laws governing the intricate context of corporate competition and identifying new competitive advantages before others [43]. Better sustainability enables businesses to take advantage of environmental opportunities to gain a competitive edge, transform ecological threats into opportunities and develop novel, value-adding responses to environmental changes [44]. Additionally, knowledge management is a predictor for the technical dimension, which means that, for policymakers, managing sustainability in a digital environment should be a top priority. A wide range of opportunities for good

change is provided by information technology when sustainability objectives are taken into consideration [43]. Knowledge management has recently made significant progress because it and innovation are both fundamental to the nature of technology-based businesses [45]. Therefore, knowledge management may be an appropriate tool for businesses that rely on technology in the healthcare industry.

Finally, knowledge management is a predictor for governance, which means that the managers' behavioural honesty in providing information boosts team spirit, self-efficacy and self-confidence. The use of knowledge management will accelerate a company's performance sustainability [46]. The relationship between corporate culture and sustainability may be advantageous for both people and businesses, as demonstrated by corporate sustainability [27]. In accordance with Hossain et al. [46], relationships with external stakeholders' fosters knowledge transfer, which benefits firms through innovation. In reality, research has shown that knowledge transfer significantly affects business performance, innovative culture, long-term competitive advantage and sustainability [47]. As a result, individuals are free to communicate their views and opinions about their experiences. By allowing employees to acquire new knowledge, share it with one another and collaborate on decisions, interactive decision-making in organisations can increase workers' productivity [48]. This research suggests that healthcare managers should set up situations where workers can take training classes and receive counselling while interacting with users for the least amount of benefits. Consequently, to increase the sustainability of their operations, healthcare managers are advised to foster a culture of innovation and creativity within their organisations. In doing so, they can add value to their hospital and gain a competitive edge.

This study obtained a significant association between knowledge management and sustainability performance, indicating that knowledge is widely regarded as a crucial source of competitive advantage and value creation [49]. Some researchers who concur that effective knowledge management is essential to the viability of sustainable development also concur with it [50,51]. These findings demonstrate that good knowledge management could result in good awareness of the environment, which is a major global issue [52]. Such a result contributes to stakeholders, such that it will also help organisations to create sustainable work environments if the information is properly shared or managed among the various stakeholders.

The implication of this study to healthcare managers is to identify areas with little exploration involving knowledge management in the context of sustainability. This provides a sense of discussion when exploring the potential of organisations in the sense of generating knowledge for the search for a more sustainable society. In light of the research opportunities, from the perspective of the research objectives, it is of tremendous consideration that the need for the development of specific models, tools and systems to facilitate information sharing and the development of knowledge management insertion level measurement tools in production systems meet sustainability guidelines. Alghatani [14], for example, found that the most challenging problems in its implementation include the lack of training programs for knowledge management, the absence of business cases for it, the lack of employee commitment and the lack of a framework for knowledge management information. Addressing concerns in its implementation is of utmost concern to an organisation because it is known to significantly improve organisational performance, resource management and the achievement of sustainable competitive advantage in a variety of industries [11]. In general, knowledge management remains a difficult topic that needs significantly more research, both generally and specifically, in the context of healthcare [14].

7. Study Limitations

This study had some restrictions that will encourage future researchers to carry out additional investigations. For example, the researchers considered just one region of Saudi Arabia, and we recommend conducting further research in a wider setting. Another is that the results of this study cannot be generalisable because of the exclusion of healthcare managers from private firms. In addition, the non-identification of the participants'

profession and department (e.g., medical doctors, nurses and pharmacists) can be recommended as part of a future study to identify the exact areas that need improvement in knowledge management.

8. Conclusions

The knowledge management of the participants was commendable, and the sustainability performance was high. Gender, managerial position, years of experience as a manager and educational attainment (but not for sustainability) all predict knowledge management and sustainability. Moreover, knowledge management was a predictive factor for sustainability in terms of economic, social, environmental, technical and governance. Further, knowledge management has a strong correlation to sustainability performance. Therefore, knowledge management for learning should be consistently created and shared to keep members involved in the core of operations. When knowledge management is put into practice, it can help an organisation to innovate, sustain better performance and guarantee long-term success. These study findings may additionally persuade workers to put more effort into knowledge management.

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