

Impact of Knowledge Management Process on Employee Performance: Employee Creativity as Mediator

*Faiz Mayah Alshammary, Dhakir Abbas Ali

Faculty of Business and Accountancy, Lincoln University College, Petaling Jaya, Malaysia

*faiz7378@hotmail.com, drdhakir@lincoln.edu.my

Corresponding Author: Faiz Mayah Alshammary

Abstract: This study investigates the impact of the knowledge management process on employee performance. This study's objective is to examine the knowledge management processes under investigation, including knowledge sharing, knowledge utilization, and knowledge discovery, to find out the mediating role of employee creativity in the context of a healthcare center in the Hail health cluster. The study is conducted among full-time healthcare professionals (HCPs) working in the Hail Health Cluster in Saudi Arabia. 218 participants were surveyed with a well-structured questionnaire based on a previous study. The data was collected in July and August 2024 and Structural Equation Modeling (SEM) was applied to analyze the data. The findings reveal that all proposed hypotheses are supported, indicating a significant positive relationship between knowledge management processes and employee creativity. Furthermore, employee creativity was found to mediate the relationship between knowledge management processes and employee performance, demonstrating that the enhancement of creativity through knowledge sharing, utilization, and discovery positively influences performance outcomes. These results highlight the importance of fostering effective knowledge management strategies within healthcare settings to boost both creativity and performance among employees. The implications of this study suggest that healthcare organizations, particularly in the Hail Health Cluster, should prioritize knowledge management as a core strategy to drive employee performance through increased creativity.

Keywords: *Knowledge management, employee performance, employee creativity, health cluster*

1. Introduction

Knowledge management (KM) processes are essential for boosting organizational effectiveness, especially in the current time and competitive modern work environment. These processes involve the organized management of information creation, sharing, utilization, and retention. It enables organizations to fully leverage their intellectual resources (Alrashidi et al., 2024). There are different dimensions of KMP such as Knowledge accessibility, knowledge utilization, knowledge sharing, knowledge storage, etc. Each dimension has its significance (Idrees et al., 2024; Klaus-Rosińska et al., 2024; Shehzad et al., 2024). Knowledge Discovery involves identifying and extracting valuable information from various sources, which allows healthcare professionals to stay informed about best practices and innovative treatments (Huang & Yuan, 2024). Knowledge Utilization refers to applying this information in real-world scenarios, enabling employees to make informed decisions that enhance patient care. Knowledge Sharing emphasizes the collaborative exchange of insights and experiences among staff, fostering a culture of continuous learning and improvement (Sarfriz et al., 2022, 2023).

Employee creativity plays a pivotal role in this framework, as it acts as a bridge between KM processes and employee performance. Creative employees are better equipped to leverage discovered knowledge, effectively utilize it in their work, and share innovative ideas with colleagues. As such, understanding how KD, KU, and KS independently influence employee creativity and subsequently, performance is essential for optimizing the potential of the workforce within the Hail Health Cluster (Alrashidi et al., 2024).

Despite the growing recognition of knowledge management (KM) as a vital component in enhancing organizational performance, there remains a significant gap in the literature regarding the specific mechanisms through which KM processes affect employee performance in healthcare settings (Mohsin et al., 2021, Muhammad et al., 2019). There are many studies previously elaborated on the KMP, but with the knowledge of the author's research there is no study that has elaborated the KMP with KD, KU, and KS for employee creativity. Further, did not link this framework with the leader's education as moderator. Existing literature on this concept often overlooks the unique context of the healthcare sector and most importantly regions such as

the Hail health cluster. There are studies mostly focused on the general organization and neglected the complexities and challenges related to the healthcare industry with frequent changes in technology and innovation as well as expectations of patients (Naiwen et al., 2021; Naseem et al., 2020; Naseem et al., 2023). This fissure creates an opportunity for research to clarify these KM processes' interactions and influence each other, and this interaction translates into enhanced employee performance through creativity.

Addressing this gap will not only contribute to the theoretical understanding of KM in healthcare but also provide practical insights for healthcare leaders seeking to implement effective KM strategies to boost employee engagement, creativity, and overall performance (Mohsin et al., 2024). Therefore, This study aims to investigate the impact of three key KM processes, Knowledge Discovery (KD), Knowledge Utilization (KU), and Knowledge Sharing (KS) on employee performance, with employee creativity serving as a critical mediator.

By exploring these relationships, this research highlights the significance of KM processes in enhancing employee creativity, thereby contributing to improved performance outcomes in healthcare settings. The findings will provide valuable insights for healthcare leaders seeking to cultivate an environment that fosters innovation and excellence in patient care.

2. Literature Review

This section consists of the literature review of previous studies. In this section, the dependent and independent variables are explained in detail. The study has used TQM (total quality management) theory as the foundation of the theoretical background of the model. This theory plays an important role in management and administrative purposes.

Knowledge Discovery

Knowledge discovery is a process that includes mining valuable, unidentified, and large datasets. This versatile attitude is a combination of techniques from machine learning and AI to recognize outlines and tendencies (Usai et al., 2018). Knowledge discovery converts raw info into significant knowledge by analyzing data systematically or helping organizations make well-informed decisions, guess tendencies, and improve working productivity (Al-Janabi & Al-Mado, 2023). In the healthcare sector economics and marketing knowledge discovery allows the complexities of data structure, customer understanding, and tactical planning. It empowers researchers to harness the impending of their data for production and development (Grover et al., 2018).

Knowledge Utilization

Knowledge utilization is known for fostering innovation and creativity. Organizations can inspire workers to relate knowledge in innovative ways, create new ideas, or make good solutions to problems (Khan & Khan, 2019). By establishing an atmosphere that rewards knowledge utilization for innovation, sectors can inspire continuous learning improvements and pace with dynamic needs and tendencies (Abd Awang et al., 2019). Knowledge utilization promotes the learning and development of workers. By applying knowledge utilization in their work workers get practical experience, and improve their skills and expertise. Feedback loops and knowledge-sharing instruments can improve learning and growth among organizations (Hrady, 2019).

Knowledge sharing

Knowledge sharing is the combination of information, skills, and capabilities of workers within an organization. Knowledge sharing is important in today's interconnected community, where completion is at its highest peak (Ganguly et al., 2019). Knowledge sharing can be defined in different ways, as it includes official training meetings, internship programs, and joint instruments. Organizations inspire knowledge creativity, and better decision-making and continue the learning process. When workers of any organization feel free and share their experiences they help each other not repeat mistakes and also improve overall productivity and development (Bligh et al., 2018).

Knowledge sharing not only creates a culture of trust and progress but also gives power to individuals with newly learned abilities and fosters professional growth and development (Ouakouak & Ouedraogo, 2019). Moreover, knowledge sharing is important for knowledge maintenance, it makes an adaptable team that can

rejoin to change. Knowledge sharing promotes an environment of better decision-making, innovation, and strong links within sectors and professional broader networks (Ganguly et al., 2019). Organizations create a continuous learning atmosphere by the acceptance of knowledge sharing that increases their long-term success (Al-Kurdi et al., 2018).

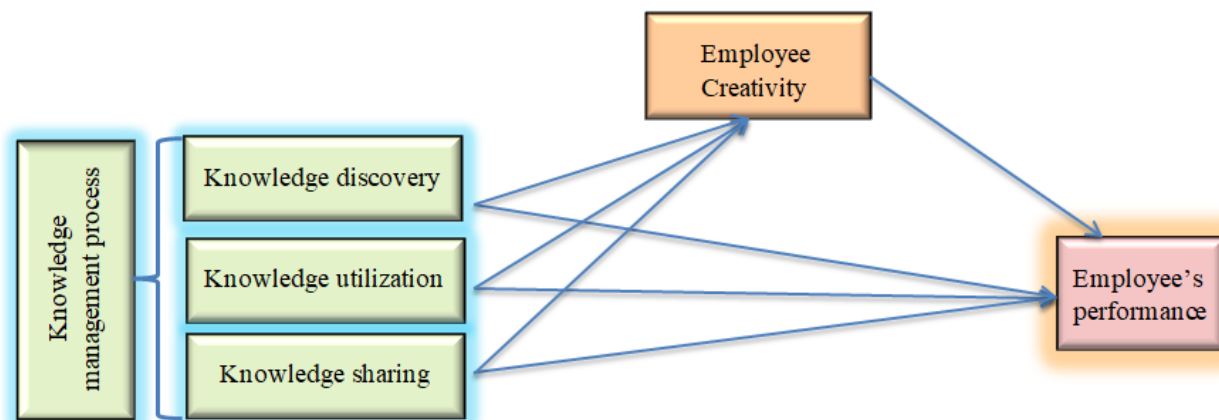
Employee creativity

Employee creativity is an important feature for organizations, when all workers are inspired to think broadly, they can make unique solutions and identify more opportunities for the betterment that go unnoticed. (Lee et al., 2018). Employee creativity within an organization fosters a more unique adaptable working environment, where all workers feel free and empowered to find new ideas. This power not only improves individual retention but also promotes a joint progressive culture where all new ideas are valuable. (Graham et al., 2022). Organizations can encourage employee creativity by giving a helpful atmosphere and giving resources like time, instruments, and feedback. Open communication that abides by practical risks is important for creativity to display (Calic et al., 2022). Leaders play an important role in the process of listening and motivating workers to pay significantly. Creativity helps organizations differentiate themselves in fluctuating markets. New ideas of all employees can lead the progress of new items or tactics to customer service, providing organizations with a diverse power (Nasifoglu Elidemir et al., 2020).

Hypothesis Development and Conceptual Framework

This section explains the hypothesis development and conceptual framework. The following figure explains that the model explores the relationship between the component of KMP and employee performance. The components of KMP are Knowledge discovery (KD), Knowledge utilization (KU), and Knowledge sharing (KS). Employee creativity is the mediator between the components of KMP and employee performance in the context of the health cluster.

Figure 1: Conceptual framework



Source: Developed by author

Knowledge discovery and employee performance

Knowledge discovery has a positive link with employee performance because it allows workers to reach relevant insights and information that improve their decision-making skills and experiences. When workers are empowered with knowledge they can solve their problems, and issues more efficiently and adapt to changes in their working atmosphere (Abubakar et al., 2019). This improves the knowledge of tasks, leading to enhanced output and value. Moreover, knowledge discovery encourages collaboration and sharing of practices among workers, it can lead to continued learning and overall improvement among team members (Ahmad & Karim, 2019). Furthermore, when workers are prepared with the right knowledge and skill learning, they are more likely to gain organizational goals or excel in their roles (Akdere & Egan, 2020).

In the context of the health sector, knowledge discovery allows the staff of the sector to make decisions, leading to managing consequences and more effective healthcare delivery (Ayatollahi & Zeraatkar, 2020). Knowledge

discovery improves the ability of workers to provide a better quality of care and helps the workers to stay with advancements and improvements in medical technology, treatment, and healthcare rules and regulations (Singh et al., 2018). Based on the above discussion following hypothesis can be developed as

H1: *Knowledge discovery has a positive and significant relation with employee performance*

Knowledge utilization and employee performance

Knowledge utilization has a positive link with employee performance. Knowledge utilization includes the practical implementation of knowledge in the working environment. When workers use the knowledge that they have gained through training, experience, or shared resources and then they are better prepared to do their tasks effectively and more perfectly (Iqbal et al., 2019). This ability can lead to enhanced the better problem-solving capabilities, quick decision-making, and can give high-quality production. On the other hand, workers who use their knowledge perfectly and utilize it effectively can adapt to innovative problem-solving decisions and contribute more expressively to organizational goals (AlMazrouei et al., 2023). Not only Culture of continuous improvement can be improved but also employees can enhance their performance by applying knowledge in real-world scenarios (Khan et al., 2019).

In the healthcare sector knowledge utilization allows the workers to implement knowledge in real-life patient care. When all the team members use their knowledge, research findings and much more then they can make better decisions and improve patient consequences (Abd Awang et al., 2019). Knowledge utilization can improve their ability to come to know the conditions, implement treatment, and follow the healthcare protocols. (Correa et al., 2020). Based on the above discussion following hypothesis can be developed as

H2: *Knowledge utilization has a positive and significant relation with employee performance*

Knowledge sharing and employee performance

Knowledge sharing has a positive relationship with employee performance because it includes the exchange of knowledge and experiences among the employees which helps them increase awareness and enhance task performance (Sa'adah & Rijanti, 2022). It is an important element of the progress process and economic production as encouraged by followers of knowledge-based views. In any sector there are new fresh employees and experienced employees and improving the collaboration and workforce between them contributes to the profitability and success of an organization (Ghani et al., 2022). Knowledge sharing enables better decision-making skills policy implementation and the generation of successful ideas. The value of individuals and organizations depends on advanced working policies that can be attained by knowledge-sharing (Sonmez Cakir & Adiguzel, 2020).

Knowledge sharing gives healthcare professionals with the entrance to a wide range of info and views. Knowledge sharing helps in making more informative decisions, healthcare workers contribute to joint decision-making, progress care coordination, and improve patient consequences. (Amir et al., 2021). Knowledge sharing gives healthcare professionals with the entrance to a high range of info and views. Knowledge sharing helps in making more informative decisions, healthcare workers contribute to joint decision-making, progress care coordination, and improve patient consequences (Nyame-Asiamah, 2020). Well-informed decisions determined by knowledge sharing positively impact employee performance. Knowledge sharing can lead to process improvement in the healthcare sector (Kim & Park, 2020).

H3: *Knowledge sharing has a positive and significant relation with employee performance*

Employee creativity as a mediator

Employee creativity works as a mediator link between knowledge discovery and employee performance. When all the workers have knowledge or are involved in knowledge discovery then they can use new information and ideas that increase their creativity (Joo et al., 2023). Knowledge sharing increases innovative thinking behavior and allows all workers to complete tasks and challenges in better progressive ways, improving creative problem-solving solutions. Employee creativity as a mediator, creativity associates the link between knowledge discovery and improved performance, since the implementation of creative and informative ideas increases more efficient processes, enhanced problem-solving (Sokół & Figurska, 2021). This relationship suggests that knowledge discovery has a positive link with employee performance and employee creativity apply the knowledge they discover, healthcare sector staff can see important improvements in progress, innovation, and overall job performance (Abdullah et al., 2021).

Knowledge utilization has a positive impact on employee performance and employee creativity is working as a mediator. Employee creativity mediates the link in these dynamics (El-Kassar et al., 2022). When workers use the knowledge they acquire in their daily tasks, it not only improves their problem-solving ability but also increases the employee's creative thinking. Workers are inspired to think outside of the specific atmosphere and find innovative problem-solving solutions to challenges which increases employee creativity (Ye et al., 2022). Knowledge creativity mediates the impact of knowledge utilization on employee performance like workers can improve approaches that enhance the processes and consequences. Moreover, employee creativity works as a connection, connecting knowledge utilization to improve knowledge performance by promoting an atmosphere where applied knowledge grows innovative decision-making, high-quality work, and results (Chen et al., 2022).

Employee creativity plays an important mediating role in the link between knowledge sharing and employee performance. When organizations promote knowledge sharing, workers are more likely to show new innovative ideas and best practices, which inspire creative thinking and innovative ideas (Imran et al., 2018). This joint working atmosphere inspires individuals to influence knowledge sharing to grow solutions or methodologies, ultimately improving their performance ability efficiently (Charband & Jafari Navimipour, 2018). As workers are involved in problem-solving and methodologies, they not only enhance their employee performance but also add to the value of their workers and organization. Therefore organizations can achieve vital improvements in employee performance by promoting employee creativity through knowledge sharing and also explaining the importance of promoting a joint knowledge-sharing atmosphere (Zeb et al., 2020).

Based on the above discussion following hypothesis can be developed

H4a: *Employee creativity has positive and significant mediation between Knowledge discovery and employee performance*

H4b: *Employee creativity has positive and significant mediation between Knowledge utilization and employee performance*

H4c: *Employee creativity has positive and significant mediation between Knowledge sharing and employee performance*

3. Methodology

This research focused on full-time healthcare professionals (HCPs) working in selected hospitals in the Hail region. For the sample, this study included medical as well as non-medical staff. The use of both medical and non-medical staff gives a well-rounded study and covers all types of staff in healthcare. The study used cross-sectional methods and data was collected with the help of a well-designed questionnaire. The questionnaire was distributed after getting permission from the department. The questionnaires were distributed to interested participants to directly increase the likelihood of participant engagement. After screening, 218 completed questionnaires were gathered and used for analysis. The high response rate provided a solid foundation for in-depth analysis, reflecting the willingness of healthcare professionals to engage in research that aims to improve healthcare practices and organizational performance.

Table 1: Demographic characteristics of respondents

Demographic variable	Category	Percentage (%)
Gender	Male	45%
	Female	55%
Age group	Under 25	12%
	25- 34	35%
	35-44	28%
	45-54	18%
	55-above	7%
Position	Nurses	50%
	Medical staff	30%
	Non-medical staff	20%

Years of experience	Less than year	8%
	1-5 years	27%
	6-7 years	18%
	6-10 years	22%
	More than 10	25%

In terms of gender distribution, the study shows that 55% of the participants are female, while 45% are male. This relatively balanced gender ratio, with a slight female majority, reflects the common demographic trend in healthcare, where women often make up a larger portion of the workforce, particularly in professions such as nursing.

Regarding the age groups, the majority of participants are in the 25-34 age brackets, making up 35% of the total sample. This is followed by 28% in the 35-44 age groups, indicating that most of the healthcare professionals are in the early to mid stages of their careers. Only 7% of the participants are aged 55 and above, suggesting that a smaller proportion of the workforce is nearing retirement age.

In terms of professional positions, nurses represent the largest group in the sample, accounting for 50% of the participants. Medical staff, such as physicians and specialists, make up 30%, while non-medical staff, including administrative and support roles, represent 20%. This distribution highlights the critical role nurses play in the healthcare system, which is often reflected in studies focused on healthcare professionals.

For the years of experience, the data shows that 25% of the participants have over 10 years of professional experience, demonstrating a significant level of expertise within the sample. Meanwhile, 27% have 1-5 years of experience, indicating a strong presence of early-career professionals. The remaining participants are spread across different experience levels, with 8% having less than a year, 18% with 6-7 years, and 22% with 8-10 years of experience, suggesting a well-rounded workforce with a variety of experience levels contributing to the healthcare environment.

Measurement scales of variable

In this study, three components of the KMP have been used, such as knowledge sharing, knowledge discovery and knowledge utilization. The dependent variable of this study is employee performance, whereas the mediator is employee creativity in the context of the Hail health cluster. The measurement scale for components of KMP is selected from the study by (Kun, 2022). There are 3 items of KS, 3 items of KU are used, and knowledge discovery 11 items which is a sub-process of a combination of 7 items and socialization 4 items (Sensuse et al., 2015). Further, for employee creativity, there are 4 items used from the study (Sahibzada et al., 2020).

Instruments used for data analysis

This study has used SEM-PLS to explain the data and used Smart PLS for data analysis. Therefore, this study as used followed the steps such as this study has applied measurement model and structural model.

4. Data Analysis and Findings

Measurement model

The finding of the measurement scale is used based on the value of the outer loading of all variables used in the research. The result of the current analysis shows the indicators have range from 0.71 to 0.84. The table of factor loading indicates that all the indicators have more than 0.5 value of outer loading which explains that the entire variable is significant (Karimah et al., 2024).

Table 2: Factor loading

Variable	Code	Factor loading
Knowledge sharing (KS)	KS1	0.78
	KS2	0.81
	KS3	0.84
Knowledge utilization (KU)	KU1	0.84

	KU2	0.79	
	KU3	0.82	
Knowledge Discovery (KD)	KD1	0.75	
	KD2	0.72	
	KD3	0.81	
	KD4	0.73	
	KD5	0.77	
	KD6	0.80	
	KD7	0.74	
Employee's performance (EP)	EP1	0.79	
	EP2	0.81	
	EP4	0.75	
	EP5	0.77	
	EP6	0.80	
	EP8	0.78	
	EP9	0.82	
	EP10	0.76	
	Employee creativity (EC)	EC1	0.83
		EC2	0.86
EC3		0.79	
EC4		0.82	

Table 3: Composite reliability (CR), Cronbach's Alpha (CA) and Average variance extracted (AVE)

Variable	CR	CA	AVE
KD	0.84	0.89	0.66
KS	0.86	0.88	0.64
KU	0.83	0.90	0.62
EC	0.88	0.91	0.67
EP	0.85	0.82	0.63

Note: Knowledge Sharing (KS), Knowledge Utilization (KU), Knowledge Discovery (KD), Employee Performance (EP), Employee Creativity (EC), Cronbach's Alpha (CA), Composite Reliability (CR), Average Variance Extracted (AVE)

The results of the reliability and validity analysis show that all constructs of Knowledge Sharing (KS), Knowledge Utilization (KU), Knowledge Discovery (KD), Employee Performance (EP), and Employee Creativity (EC) have high internal consistency, as indicated by their Cronbach's Alpha (CA) values, all of which are above 0.80. These values indicate the strong reliability of each variable. The CR values constructs are also higher than the threshold level which explains the consistency.

Table 4: Discriminant validity (Fornell and Lacker Criterion)

Construct	KS	KU	KD	EP	EC
KS	0.81				
KU	0.53	0.80			
KD	0.49	0.55	0.79		
EP	0.46	0.50	0.47	0.82	
EC	0.41	0.44	0.43	0.55	0.84

Table 4 explains the discriminant validity of the constructs with Fornell-Lacker criteria. The values represent that the square root value is greater than the correlation value. These values confirmed that there is strong discriminant validity (Chaudhuri et al., 2024, Hussain, Kampoowale, et al., 2022; Hussain, Yousufi, et al., 2022).

Table 5: Saturated results

Variable	R ² value	Q ² value	SRMR
EP	0.65	0.41	0.057
EC	0.50	0.32	

The table mentioned above explains that Employee Creativity has an R² value of 0.50, indicating that 50% of its variance is explained by the knowledge-related independent variables. The Q² values for both EP (0.41) and EC (0.32) confirm the model's predictive relevance, as both values are above zero, signifying that the model reliably predicts these outcomes. The SRMR value of 0.057 is well below the threshold of 0.08, indicating a good model fit to the observed data. These values collectively confirm that the model explains a substantial portion of the variance in both EP and EC, has predictive strength and accurately represents the relationships among the variables.

Structural model

The structural (or inner) model reveals a causal relationship between exogenous and endogenous constructs, as suggested by Hair et al. (2016). This model was evaluated based on its explanatory power (R²), predictive relevance (Q²), and path coefficient (β -values). This assessment of the model also explains the results of hypothesis development.

Table 6: Results of Hypothesis testing

Hypothesis	Path	Beta value	t-value	p-value	Decision
H1	KD->EP	0.28	4.15	0.000	Supported
H2	KU->EP	0.35	3.85	0.001	Supported
H3	KS->EP	0.20	3.65	0.009	Supported
H4a	KD->EC->EP	0.19	3.25	0.000	Supported
H4b	KU->EC->EP	0.24	3.09	0.007	Supported
H4c	KS->EC->EP	0.67	4.10	0.010	Supported

Note: Knowledge Sharing (KS), Knowledge Utilization (KU), Knowledge Discovery (KD), Employee Performance (EP), and Employee Creativity (EC),

The hypothesis testing results confirm the significant positive effects of knowledge processes on Employee Performance (EP) and highlight the mediating role of Employee Creativity (EC). Knowledge Discovery (KD) positively influences EP ($\beta = 0.28$, $t = 4.15$, $p = 0.000$), as does Knowledge Utilization (KU) ($\beta = 0.35$, $t = 3.85$, $p = 0.001$) and Knowledge Sharing (KS) ($\beta = 0.20$, $t = 3.65$, $p = 0.009$), supporting the direct hypotheses (H1, H2, and H3). Additionally, EC effectively mediates the relationship between knowledge processes and performance. Specifically, the mediating effect of EC is significant for KD ($\beta = 0.19$, $t = 3.25$, $p = 0.000$), KU ($\beta = 0.24$, $t = 3.09$, $p = 0.007$), and KS ($\beta = 0.67$, $t = 4.10$, $p = 0.010$), supporting hypotheses H4a, H4b, and H4c. This indicates that while knowledge processes directly enhance employee performance, creativity plays a critical role in amplifying these effects.

Discussion

This study aims to investigate the impact of knowledge management process with its dimension on the employee performance in the context of Hail health cluster. Further, this study also found the relationship between employee creativity as a mediator to make a strong conceptual framework. After the analysis this study has extracted the following results:-

This study has accepted the H1 which explains that Knowledge discovery positively impacts employee performance by providing insights that enhance decision-making and problem-solving skills. When employees are empowered with knowledge, they can adapt to changes in their work environment, leading to improved task efficiency and output (Abubakar et al., 2019).

The results also suggested that H2 is also accepted. This hypothesis elaborates that KU has a positive and significant relationship with employee performance. The worker with the best utilization of the resource has more capability to solve the problem and a high capacity for the best decision-making, which leads to the best quality performance. Further, the results also elaborate that the hypothesis related to KS and employee

performance is accepted. Knowledge sharing plays an important role in the provision of mutual sharing of ideas and experience which increases the know-how about the task (Nyame-Asiamah, 2020). This activity of KS promotes collaboration among the new employees and organizational success. Especially, in healthcare where timely decision-making is crucial, knowledge sharing helps to make the appropriate decision at the appropriate time (Chen et al., 2022).

Furthermore, the analysis of this study explains that employee creativity is important as a mediator between KMP and employee performance. The creativity application of the KU, KS and KD leads to the improved ability of problem-solving and management of tasks within in remaining in the resources (AlMazrouei et al., 2023). Further, in the Healthcare sector employee creativity in medical and non-medical fields enhances performance and active patient satisfaction (Sonmez Cakir & Adiguzel, 2020).. The results of these hypotheses are a line with previous studies to make these results more accurate.

5. Implications and Limitations of the Study

Practical Implications

This study has practical implications not for one sector but the other. Mainly this study provides the main practical pathway to the Hail health cluster regarding this framework. The results of this study emphasize the strategic importance of KS, KD and KU within healthcare. The environment in which the activity of knowledge sharing and collaboration is performed is the employee performance used to enhance employee creative work. Further, this performance improvement is a direct result of effective knowledge management and creativity. The framework suggests that by prioritizing knowledge sharing, utilization, and discovery, the Hail Health Cluster can achieve higher productivity, more innovative approaches to care, and overall improved healthcare delivery. This not only boosts employee performance but also aligns with the strategic goals of enhancing patient outcomes and healthcare services.

Theoretical Implications

This study is very important from a theoretical perspective. This study has used three components of the KMP which have great importance in enhancing the performance of employees working in any sector. This study has used KS, KU and KD as components of the KMP. Further, this study also used employee creativity as the mediator. Employee creativity is an important aspect of any organization as well as the production sector to make it long-term sustainable. This study along with TQM theory explains the importance of employee creativity in the healthcare cluster in Hail Saudi Arabia.

Limitations of Study

This study has several limitations that should be noted. First, the sample is restricted to healthcare professionals (HCPs) within the Hail Health Cluster in Saudi Arabia, which limits the generalizability of the findings to other sectors or regions. The specific context of healthcare may not fully represent the dynamics in other industries, and results could vary in different organizational cultures or geographic areas. Additionally, The cross-sectional nature of the data also limits the ability to establish causality between variables. A longitudinal approach would provide more robust insights into the temporal effects of knowledge management on creativity and performance.

Another limitation is the study's focus on only three knowledge management processes, knowledge sharing, utilization, and discover without considering other relevant processes like knowledge retention or organizational learning. There could be additional factors influencing employee creativity and performance that were not included. Moreover, the study does not account for contextual factors, such as leadership style or organizational support, which may also play a significant role in the relationships examined. Addressing these limitations in future research could offer a more comprehensive understanding of the impact of knowledge management on employee creativity and performance across diverse settings.

References

- Abd Awang, H., Mohd Sapie, N., Yusof Hussain, M., Ishak, S., & Md Yusof, R. (2019). Nurturing innovative employees: Effects of organizational learning and work environment. *Economic research-Ekonomska istraživanja*, 32(1), 1152-1168.
- Abdullah, M. I., Huang, D., Sarfraz, M., Ivascu, L., & Riaz, A. (2021). Effects of internal service quality on nurses' job satisfaction, commitment and performance: Mediating role of employee well-being. *Nursing Open*, 8(2), 607-619.
- Abubakar, A. M., Elrehail, H., Alatailat, M. A., & Elçi, A. (2019). Knowledge management, decision-making style and organizational performance. *Journal of Innovation & Knowledge*, 4(2), 104-114.
- Ahmad, F., & Karim, M. (2019). Impacts of knowledge sharing: a review and directions for future research. *Journal of Workplace Learning*, 31(3), 207-230.
- Akdere, M., & Egan, T. (2020). Transformational leadership and human resource development: Linking employee learning, job satisfaction, and organizational performance. *Human Resource Development Quarterly*, 31(4), 393-421.
- Al-Janabi, A. S. H., & Al-Mado, A. A. G. (2023). Knowledge Management in Integration with Business Intelligence Systems: A Descriptive Analytical Research1. *International Journal of Research in Social Sciences and Humanities*, 13(01), 18-33.
- Al-Kurdi, O., El-Haddadeh, R., & Eldabi, T. (2018). Knowledge sharing in higher education institutions: a systematic review. *Journal of Enterprise Information Management*, 31(2), 226-246.
- AlMazrouei, H., Zacca, R., & Mustafa, G. (2023). Mediating-moderating effect of employee creativity and team potency on expatriate innovative work behavior. *International Journal of Organizational Analysis*, 31(5), 1669-1693.
- Alrashidi, S., Alenezi, W., Alrimali, A., & Alshammari, M. (2024). Exploring the leadership styles of nurse managers in Hail, Saudi Arabia: A cross-sectional analysis. *Journal of Hospital Administration*, 13(1).
- Amir, N., McCarthy, H. J., & Tong, A. (2021). A working partnership: a review of shared decision-making in nephrology. *Nephrology*, 26(11), 851-857.
- Ayatollahi, H., & Zeraatkar, K. (2020). Factors influencing the success of knowledge management process in health care organizations: a literature review. *Health Information & Libraries Journal*, 37(2), 98-117.
- Bligh, M. C., Kohles, J. C., & Yan, Q. (2018). Leading and learning to change: the role of leadership style and mindset in error learning and organizational change. *Journal of Change Management*, 18(2), 116-141.
- Calic, G., Mosakowski, E., Bontis, N., & Helie, S. (2022). Is maximizing creativity good? The importance of elaboration and internal confidence in producing creative ideas. *Knowledge Management Research & Practice*, 20(5), 776-791.
- Charband, Y., & Jafari Navimipour, N. (2018). Knowledge sharing mechanisms in the education: A systematic review of the state of the art literature and recommendations for future research. *Kybernetes*, 47(7), 1456-1490.
- Chaudhuri, R., Chatterjee, S., & Vrontis, D. (2024). Adoption of blockchain technology in hospitality and tourism industry and sustainability performance: impact of technological turbulence and senior leadership support. *EuroMed Journal of Business*, 19(1), 62-83.
- Chen, M., Zada, M., Khan, J., & Saba, N. U. (2022). How does servant leadership influence creativity? Enhancing employee creativity via creative process engagement and knowledge sharing. *Frontiers in Psychology*, 13, 947092.
- Correa, V. C., Lugo-Agudelo, L. H., Aguirre-Acevedo, D. C., Contreras, J. A. P., Borrero, A. M. P., Patiño-Lugo, D. F., & Valencia, D. A. C. (2020). Individual, health system, and contextual barriers and facilitators for the implementation of clinical practice guidelines: a systematic metareview. *Health research policy and systems*, 18, 1-11.
- El-Kassar, A.-N., Dagher, G. K., Lythreathis, S., & Azakir, M. (2022). Antecedents and consequences of knowledge hiding: The roles of HR practices, organizational support for creativity, creativity, innovative work behavior, and task performance. *Journal of Business Research*, 140, 1-10.
- Ganguly, A., Talukdar, A., & Chatterjee, D. (2019). Evaluating the role of social capital, tacit knowledge sharing, knowledge quality and reciprocity in determining the innovation capability of an organization. *Journal of Knowledge Management*, 23(6), 1105-1135.

- Ghani, B., Zada, M., Memon, K. R., Ullah, R., Khattak, A., Han, H., Ariza-Montes, A., & Araya-Castillo, L. (2022). Challenges and strategies for employee retention in the hospitality industry: A review. *Sustainability*, 14(5), 2885.
- Graham, J. R., Grennan, J., Harvey, C. R., & Rajgopal, S. (2022). Corporate culture: Evidence from the field. *Journal of financial economics*, 146(2), 552-593.
- Grover, V., Chiang, R. H., Liang, T.-P., & Zhang, D. (2018). Creating strategic business value from big data analytics: A research framework. *Journal of Management Information Systems*, 35(2), 388-423.
- Hair Jr., J. F., Hult, G. T. M., Ringle, C., & Sarstedt, M. (2016). *A Primer on Partial Least Squares Structural Equation Modeling (PLS-SEM)*. Thousand Oaks, CA: Sage Publications.
- Hayat, R., S. Hussain S., Iqbal S., (2024). Impact of Socio-Economic Factors on Women's Entrepreneurial Intention: The Moderating Role of Skill Development. *International Journal of Contemporary Social Science*, 3(3).
- Hardy, C. A. (2019). The General Knowledge, Skill, and Experience Paradox. *BCL Rev.*, 60, 2409.
- Huang, Z., & Yuan, L. (2024). Enhancing learning and exploratory search with concept semantics in online healthcare knowledge management systems: An interactive knowledge visualization approach. *Expert Systems with Applications*, 237, 121558.
- Hussain, S., Kampoowale, I., Sadia, H., & Hall, S. (2022). Linking organizational climate with Psychological capital: Organizational Innovative culture as moderator. *J. Hum. Univ. Nat. Sci*, 4, 18-30.
- Hussain, S., Yousufi, M., & Iftikhar, H. (2022). China-Pakistan Economic Corridor: Geopolitical Dynamic in the US and South Asian Print Media. *Dialogue (Pakistan)*, 17(4).
- Idrees, H., Xu, J., & Haider, S. A. (2024). Impact of knowledge management infrastructure and processes on automobile manufacturing firm innovative performance through the mediating role of agile project management practice. *Journal of Knowledge Management*.
- Imran, M. K., Ilyas, M., Aslam, U., & Fatima, T. (2018). Knowledge processes and firm performance: the mediating effect of employee creativity. *Journal of Organizational Change Management*, 31(3), 512-531.
- Iqbal, A., Latif, F., Marimon, F., Sahibzada, U. F., & Hussain, S. (2019). From knowledge management to organizational performance: Modelling the mediating role of innovation and intellectual capital in higher education. *Journal of Enterprise Information Management*, 32(1), 36-59.
- Joo, B.-K., Yim, J.-H., Jin, Y. S., & Han, S. J. (2023). Empowering leadership and employee creativity: the mediating roles of work engagement and knowledge sharing. *European journal of training and development*, 47(9), 881-899.
- Karimah, R. N., Kusnanto, H., Lazuardi, L., Pertiwi, A. A., Istiono, W., Lusiantoro, L., & Idris, H. (2024). Information quality measurement model of diabetes management in primary healthcare: Confirmatory factor analysis. *International Journal of Healthcare Management*, 1-7.
- Khan, N. A., & Khan, A. N. (2019). What followers are saying about transformational leaders fostering employee innovation via organizational learning, knowledge sharing and social media use in public organizations? *Government Information Quarterly*, 36(4), 101391.
- Khan, S. A., Kaviani, M. A., J. Galli, B., & Ishtiaq, P. (2019). Application of continuous improvement techniques to improve organization performance: A case study. *International Journal of Lean Six Sigma*, 10(2), 542-565.
- Kim, E.-J., & Park, S. (2020). Transformational leadership, knowledge sharing, organizational climate and learning: an empirical study. *Leadership & Organization Development Journal*, 41(6), 761-775.
- Klaus-Rosińska, A., Walecka-Jankowska, K., & Zgrzywa-Ziemak, A. (2024). The significance of knowledge management processes for business sustainability: the role of sustainability-oriented projects. *Humanities and Social Sciences*, 31(1), 65-75.
- Kun, M. (2022). Linkages between Knowledge Management Process and Corporate Sustainable Performance of Chinese SMEs: Mediating role of Frugal Innovation. *Frontiers in Psychology*, 1172.
- Lee, Y., Mazzei, A., & Kim, J.-N. (2018). Looking for motivational routes for employee-generated innovation: Employees' scouting behavior. *Journal of Business Research*, 91, 286-294.
- Mohsin, M., Shamsudin, M. N., Jaffri, N. R., Idrees, M., & Jamil, K. (2024). Unveiling the contextual effects of total quality management to enhance sustainable performance. *The TQM Journal*.
- Mohsin, M., Zhu, Q., Wang, X., Naseem, S., & Nazam, M. (2021). The empirical investigation between ethical leadership and knowledge-hiding behavior in the financial service sector: a moderated-mediated model. *Frontiers in Psychology*, 12, 798631.

- Muhammad, M., Muhammad, A. S., Li, N.-W., & Muhammad, M. K. (2019). Investigation of various factors affecting the coefficient of friction of yarn by using the Taguchi method. *Industria Textila*, 70(3), 211-215.
- Muhammad, N., Robinson, D., & Nisar, M. (2019). The influence of Muslim marriages on entrepreneurial intentions of women entrepreneurs: Evidence from Pakistan. *International Journal of Entrepreneurial Behavior & Research*, 25(7), 1389-1409.
- Naiwen, L., Wenju, Z., Mohsin, M., Rehman, M. Z. U., Naseem, S., & Afzal, A. (2021). The role of financial literacy and risk tolerance: an analysis of gender differences in the textile sector of Pakistan. *Industria Textila*, 72(3), 300-308.
- Naseem, S., Fu, G. L., Mohsin, M., Aunjam, M. S., Rafiq, M. Z., Jamil, K., & Salamat, S. (2020). Development of an inexpensive functional textile product by applying accounting cost-benefit analysis. *Industria Textila*, 71(1), 17-22.
- Naseem, S., Hu, X., Shi, J., Mohsin, M., & Jamil, K. (2023). Exploring the optical impact of information communication technology and economic growth on CO2 emission in BRICS countries. *Optik*, 273, 170339.
- Nasifoglu Elidemir, S., Ozturen, A., & Bayighomog, S. W. (2020). Innovative behaviors, employee creativity, and sustainable competitive advantage: A moderated mediation. *Sustainability*, 12(8), 3295.
- Nyame-Asiamah, F. (2020). Improving the 'manager-clinician' collaboration for effective healthcare ICT and telemedicine adoption processes—a cohered emergent perspective. *Information technology for development*, 26(3), 525-550.
- Ouakouak, M. L., & Ouedraogo, N. (2019). Fostering knowledge sharing and knowledge utilization: The impact of organizational commitment and trust. *Business Process Management Journal*, 25(4), 757-779.
- Sa'adah, N., & Rijanti, T. (2022). The role of knowledge sharing, leader-member exchange (LMX) on organizational citizenship behavior and employee performance: an empirical study on public health center of pati 1, pati 2 and tranquil in central java. *International Journal of Social and Management Studies*, 3(1), 112-131.
- Sahibzada, U. F., Latif, K. F., Xu, Y., & Khalid, R. (2020). Catalyzing knowledge management processes towards knowledge worker satisfaction: fuzzy-set qualitative comparative analysis. *Journal of Knowledge Management*, 24(10), 2373-2400.
- Sarfraz, M., Naseem, S., & Mohsin, M. (2022). Adoption of renewable energy, natural resources with conversion information technologies and environmental mitigation: Evidence from G-7 countries. *Energy Reports*, 8, 11101-11111.
- Sarfraz, M., Naseem, S., & Mohsin, M. (2023). Assessing the nexus of gross national expenditure, energy consumption, and information & communications technology toward the sustainable environment: Evidence from advanced economies. *Sustainable Development*, 31(4), 2826-2835.
- Sensuse, D. I., Cahyaningsih, E., & Wibowo, W. C. (2015). Identifying knowledge management process of Indonesian government human capital management using analytical hierarchy process and Pearson correlation analysis. *Procedia Computer Science*, 72, 233-243.
- Shehzad, M. U., Zhang, J., Dost, M., Ahmad, M. S., & Alam, S. (2024). Knowledge management enablers and knowledge management processes: a direct and configurational approach to stimulate green innovation. *European Journal of Innovation Management*, 27(1), 123-152.
- Singh, J. B., Chandwani, R., & Kumar, M. (2018). Factors affecting Web 2.0 adoption: exploring the knowledge sharing and knowledge seeking aspects in health care professionals. *Journal of Knowledge Management*, 22(1), 21-43.
- Sokół, A., & Figurska, I. (2021). The importance of creative knowledge workers in a creative organization. *Energies*, 14(20), 6751.
- Sonmez Cakir, F., & Adiguzel, Z. (2020). Analysis of leader effectiveness in organization and knowledge sharing behavior on employees and organization. *Sage Open*, 10(1), 2158244020914634.
- Usai, A., Pironti, M., Mital, M., & Aouina Mejri, C. (2018). Knowledge discovery out of text data: a systematic review via text mining. *Journal of knowledge management*, 22(7), 1471-1488.
- Ye, P., Liu, L., & Tan, J. (2022). Creative leadership, innovation climate and innovation behavior: the moderating role of knowledge sharing in management. *European Journal of Innovation Management*, 25(4), 1092-1114.
- Zeb, A., Abdullah, N. H., Hussain, A., & Safi, A. (2020). Authentic leadership, knowledge sharing, and employees' creativity. *Management Research Review*, 43(6), 669-690.