




The Effect of Knowledge Management Practices Exploration and Exploitation on Individual Performance and Empowerment

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Received: 27 July 2021 / Accepted: 21 February 2023

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Abstract

Purpose Knowledge management has acquired the center position of organizational literature. However, there is a shortage of empirical studies examining the interrelation between knowledge management (KM) practices and employee performance and empowerment. To fill this gap, this study aims to empirically investigate the direct relationship between KM practices exploration and exploitation and employee performance and empowerment in higher education institutions. This study also proposes to examine the mediating effect of employee empowerment on the relationship between KM practices exploration and exploitation and employee performance.

Design/methodology/approach Based on a sample of 163 employees from higher education institutions in Jordan, this study tested the hypotheses with partial least square-structural equation modeling (PLS-SEM).

Findings The results indicate that KM practices exploration has a statistically significant positive influence on employee performance and empowerment, both directly and indirectly through employee empowerment. The findings also reveal that KM practices exploitation has a statistically significant direct positive influence on employee empowerment, and indirect impact on employee performance through employee empowerment.

Originality/value Very little is known about the impact of KM practices exploration and exploitation on employee performance and empowerment in higher education institutions (HEIs). This paper aims to fill this gap in the literature by providing empirical evidence on the effects of various areas of KM. Practically, the findings highlight the significance of considering both KM exploration and exploitation, and their effect on individual level employee performance and empowerment.

Keywords Knowledge management practices · Exploration · Exploitation · Empowerment · Performance · Higher education

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Introduction

One of the biggest changes that the organizations face nowadays is the shift in the world's economy from a base of financial to intangible assets (Scarborough, 2012). Knowledge has become a crucial asset for gaining and sustaining a competitive advantage (Alavi & Leidner, 1999; Lee et al., 2016; Torabi & Elden, 2017). Thus, the key is putting this knowledge to good use and managing it in a way that creates value for organizations (Wiig, 1997a). Effective knowledge management (KM) is one of the main foundations of an organization's success in the twenty-first century (Wiig, 1997b). KM is the process of defining, creating, capturing, sharing, and using knowledge (Van Buren, 1999). The goal of this process is to plan, implement, operate, and monitor all knowledge-related activities to enhance organizational performance (Wiig, 1997a; Cabrilo and Dahms, 2018). Since KM is an integrated approach to creating, sharing, and applying all of an organization's knowledge assets, the two key concepts exploitation and exploration in knowledge management are equally important and require a balance between them (Dhir & Dhir, 2018; Sherif et al., 2013). KM enablers should facilitate knowledge processes that would allow recipients to effectively interpret knowledge with the same meaning that was expressed by a source (Alavi & Leidner, 2001; Wu & Lee, 2017; Khosravi & Nilashi, 2018). Human factors such as human resources management practice, employee empowerment, and performance are recognized as KM enablers in extant literature (Oltra, 2005; Chong, 2006). In this vein, the essential factor for organizational survival and superior performance is human resources empowerment and performance. Thus, linking KM to employee empowerment and performance can boost organization performance (Hasani, Sheikhesmaeili, 2016).

Academic literature has long examined the link between various aspects of knowledge management process and performance as well as empowerment. For instance, at the individual level, studies have investigated the effect of KM process on employees' work performance (Alyoubi et al., 2018), the relationship between knowledge sharing and psychological empowerment (Feiz, soltani, and Farsizadeh, 2019), and the link between KM processes (knowledge creation, acquisition, storage, sharing, and application) and employee empowerment (Hasani, Sheikhesmaeili, 2016). At the organizational level, the relationship between KM processes and public sector firm performance has been analyzed (Ahbabi et al., 2019).

The existing literature on KM focuses on KM processes rather than KM practices, focusing on studying the KM process (Inkine, 2016) has been seen as insufficient to fully reflect the influence of knowledge on institutional development. Examining practices of KM, in turn, provides better insights on how KM contributes to creating organizational value. The success of KM is largely affected by the organizational practices and systems through which KM goals can be achieved. These practices are considered a crucial mechanism for creating organizational values (Marqués and Simón, 2006). Creating organizations values and development depend on the organization investment in managing the knowledge that is

mostly possessed and applied by individuals, which can help increase employee performance (Torabi et al., 2016; Mustapa and Mahmood, 2016) and empowerment (Hasani and Sheikhesmaeili, 2016). However, there is a shortage of empirical studies on the interrelations between KM practices exploration and exploitation, and employee performance and empowerment in the existing literature, especially in knowledge-intensive entities such as higher education.

The goal of assimilating KM practices (KM practices exploration and exploitation) into organizational processes is to reap the full benefits of KM initiatives and gain significant business value (Al-Mahaseneh and Harb, 2022). To fill this gap, the present study seeks to empirically examine the relationships between KM practices exploration and exploitation, and employees' individual performance and empowerment. It also investigates the mediating effect of employee empowerment on the relationships between KM practices exploration and exploitation, and employee performance. By examining both exploration (the dissemination of KM practices within an organization) and exploitation (the learning activities or experiences involving the use of KM practices), this research will enhance the understanding of solutions to improve employee performance and competencies.

KM Practices in Higher Education

Effective KM is widely recognized as a crucial driver of new information and ideas and is a critical issue in all types of organizations, profit or non-profit (Omotayo, 2015). In today's knowledge economy, Higher Education Institutions (HEIs) are key places for creation and sharing productive knowledge (Elrehail et al., 2018). As knowledge-intensive entities (Howell and Annansingh, 2013), universities are considered as a zone of knowledge and play an important role in developing the capabilities of faculty members, staff, and students through effective KM practices (Shehabat, Harb, and Zahrawi, 2020). Thus, effective KM in these institutions is crucial in shaping their strategies to achieve their objectives. Nowadays, adopting more KM strategies is crucial for HEIs to address growing demands for transparency, competitiveness, and quality (Quarchioni et al., 2020, p. 1).

The broad approach to knowledge management in Higher Education Institutions (HEIs) significantly affects knowledge development and sharing in the academic community (Iqbal et al., 2019). Hence, implementing KM practices can enhance the overall performance of these institutions (Hossain et al., 2013). A study by Sharimilah Devi et al. (2008) emphasized that for organizations to remain competitively resilient, they must focus on sharing and applying organizational knowledge and expertise. The authors argue that establishing a KM system within HEIs is crucial for identifying, transforming, evaluating, and sharing academic institutional knowledge, which will provide these institutions with a competitive advantage and improve their dynamics (Choi and Lee, 2003). Furthermore, providing knowledge to employees within an organization is considered a primary source of competitive advantage, and improving this knowledge allows the organization to maintain its advantage for longer periods (Mahmood et al., 2020). Thus, the relationship between knowledge management and performance is a significant concern for researchers

and practitioners, and more research is needed to clarify this relationship (Rezaei, Khalilzadeh, and Soleimani, 2021).

There are growing studies on KM in HEIs. For instance, Sahibzada et al., (2020) examined the impact of knowledge management processes on organizational performance in context of HEIs. The findings revealed that KM processes have a direct and significant impact on organizational performance, as well as an indirect impact via creative organizational learning. Similarly, Iqbal et al., (2019) investigated the direct impact of KM processes on organizational performance in higher education. The findings indicated that KM processes have a direct and indirect impact on organizational performance through innovation and intellectual capital.

Despite the presence of such significant evidence of the role of KM in HEIs, the literature is still in its early stage and inadequate research studies have verified the association of KM practices exploration and exploitation toward performance at the individual level in HEIs. In a similar vein, insufficient empirical research has been conducted to investigate the direct and indirect effect of assimilating KM practices on the individual performance of HEIs. The majority of information relevant to the indirect impact of individual empowerment on the relationship between KM practices exploration and exploitation and individual performance is almost silent.

To fill these gaps in the literature, this study aims to examine KM and its practices in HEIs, which will contribute to a better understanding of how these organizations operate (Quarchioni et al., 2020). The following research questions are proposed based on identified gaps in existing research: Do KM practices exploration and exploitation have an impact on employees' empowerment and performance in HEIs? Does employees' empowerment mediate the relationship between KM practices exploration and exploitation and employees' performance in HEIs?

The rest of this paper is organized as follows. In the next section, we discuss the research background and hypotheses. In the third section, we outline the research methodology and present the results. Discussion and conclusions are illustrated in the last two sections.

Research Background and Hypothesis

KM and its Practices: Contributions at the Individual Level

It has been over 30 years since Karl Wiig coined the KM term in 1986 (Beckman 1999). Increasingly, the field of KM has experienced unprecedented growth since the 1980s, and more recently, it has become a core element of organizational strategies (Barclay and Murray 1997; Beckman 1999). During this time, several scholars have suggested multiple perspectives to define KM, leading to a multitude of definitions in the literature. These definitions have originated from diverse disciplines such as social science, management science, artificial intelligence, and knowledge engineering, shaping the concept of KM (Barclay and Murray 1997).

While KM has been defined in different ways, some definitions clearly point out KM's contributions to organizational success. For example, a survey of the 100 top European companies indicated that the most widely adopted definition of KM

among these companies is that KM is a ‘collection of processes that govern the creation, dissemination, and utilization of knowledge to fulfill organizational objectives’ (Cranfield School of Management, 1998 in Mertins et al. 2003, p.14). It is widely believed that KM is a crucial factor for organizations to compete and drive growth in the market (Giampaoli et al., 2017; Marqués and Simón, 2006). The idea is that effective knowledge management affects various aspects of an organization (McKeen et al., 2006). Thus, in terms of management philosophy, organizational activities, and technological methods, KM has highly penetrated the managerial rhetoric and practice (Andreeva and Kianto, 2012). This is due to the belief that KM can make a difference in an organization’s development. From this perspective, KM is seen as ‘the formalization of and access to experience, knowledge, and expertise that create new capabilities, enable superior performance, encourage innovation and enhance customer value’ (Beckman, 1999). This links KM to value creation; such value lies in the relevance of knowledge and its effective and efficient management contribute to organizational competitiveness, performance (Andreeva and Kianto, 2012) and innovation (e.g., Inkinen, 2016; Donate et al., 2015; Gloet and Terziovski, 2004; Darroch and McNaughton, 2002).

Knowledge management in organizations typically has two foci: knowledge management processes and knowledge management practices (Inkinen, 2016). KM processes focus on the process of acquiring, converting, and applying knowledge and how this process takes place within a firm (Inkinen, 2016). KM practices, by contrast, focus on the organization’s activities that support the management process of knowledge for organizational benefits (e.g., organizational competitiveness and performance) (Andreeva and Kianto, 2012; Al-Mahasneh and Harb, 2022). Studying KM processes reflects a knowledge-based picture of an organization, i.e., how knowledge is utilized and used in the organization. However, this does not give rich insights into the potential contributions of knowledge and its management activities (Andreeva and Kianto, 2012). Thus, to examine KM activities and their benefits for knowledge-intensive entities, such as higher education institutions, this current study focuses on KM practices.

Within the literature, it seems that the role of KM practices in organizational performance is very evident (e.g., Inkinen, 2016; Kianto et al., 2014; Marqués and Simón, 2006; Schiuma et al., 2012). This role has been widely examined at the organizational level with a notable shortage of studies at the individual level. Practically, organizational performance ultimately relies on an individual performance, and KM at the individual level is expected to facilitate the effectiveness of KM at the organizational level (Sabherwal and Becerra-Fernandez, 2003). This study, thus, moves down to the individual level and aims to contribute to the literature through developing a better understanding of KM practices contribution in creating values for individuals in higher education.

Hislop (2009) links KM with the use of internal sources of knowledge, such as information communication technologies (ICT) and firm policy and strategy to manage the knowledge of employees. These KM activities at the individual level have the potential contribution to improve their performance (North and Kumta, 2018) and facilitate their empowerment (Hasani and Sheikhesmaeili, 2016). By investing in implanting knowledge and its practices, organizations create an environment for

employees' superior performance (North and Kumta, 2018; Marqués and Simón, 2006). These organizations usually employ a set of practices to manage the knowledge that is mostly possessed and applied by individuals. Hence, KM's provision of knowledge and its practices in organizations serves as a means for improving the knowledge processes, where all types of knowledge contribute to improving individual work performance and thereby, organizational performance (Henttonen et al., 2016; Torabi et al., 2016). Although the recent debate around the role of KM in organizations has become more complex (Torabi et al., 2016), there is a general agreement that KM plays a significant role in enhancing employee performance (Torabi et al., 2016; Mustapa and Mahmood, 2016).

At the individual level, KM also serves as an organizational mechanism to empower employees (Hasani and Sheikhesmaeili, 2016; Haghghi et al., 2014). Empowerment refers to the "process of enhancing feelings of self-efficacy among organizational members through the identification of conditions that foster powerlessness and through their removal by both formal organizational practices and informal techniques of providing efficacy information" (Conger and Kanungo, 1988, p474). To energize and sustain employee behavior, studies indicate some cognitions as the basis for employee empowerment: effectiveness (an individual's autonomy to make a difference in the performance outcomes), competence (individual's ability to perform their tasks well), meaningfulness (individual's intrinsic motivation), autonomy (perceived opportunity for decision-making) (Spreitzer and Mishra, 1999). Considering these elements of empowerment, Hasani and Sheikhesmaeili (2016) noted that employee empowerment can be increased through KM, where empowerment is far-fetched without knowledge.

Despite many studies investigating the impact of KM and its processes on performance (e.g., Henttonen et al., 2016; Masa'deh et al., 2017), there is a lack of evidence on how assimilating the practices of KM affect performance, particularly the job performance of individuals who possess and apply knowledge. Moreover, literature has proven that KM processes can increase the employee empowerment (Hasani and Sheikhesmaeili 2016). However, the relationship between assimilating KM practices and employee empowerment is absent.

Knowledge Exploration and Exploitation

To invoke organizational values from its knowledge, organizations employ explorative and exploitive practices (March, 1991). These practices encompass both technological and human-related practices (Andreeva and Kianto, 2012; Hansen et al., 1999). Technological practices for KM include technological information systems that are concerned with facilitating communication and information processing, such as information technologies that support management decisions and knowledge work, KM systems and tools, knowledge sharing tools, and knowledge repository. Human-related practices for KM focus on managing employees as an essential source of knowledge (Andreeva and Kianto, 2012). Examples of such practices include a reward system for motivating knowledge sharing and creation as well as workforce retention.

The organizational technological and human-related KM activities can be utilized to spread the number of KM practices, i.e., knowledge exploration, as well as to capture the longevity or the degree of experience when employing a specific KM practice, i.e., knowledge exploitation. KM studies argue that organizations can gain significant value from adopting and implementing more KM practices and exploiting them in ongoing work processes (Gray, 2001; Purvis et al., 2001). However, it is noted that while there are some investigations into the relationship between KM practices and performance in organizations, there is a neglect of the KM practices spread and longevity and their organizational values, particularly at the individual level. This study is on filling this gap by examining KM practice, exploration and exploitation, and their impact on the individual level, i.e., how they relate to improving individuals' performance and facilitating their empowerment.

Knowledge Exploration

Knowledge exploration is defined as the exploration of new possibilities of knowledge management practices (Gray, 2001). It is a tool for introducing radical innovations in an organization and helping extend existing product competencies (Voss et al., 2008). This implies the organization's ability to apply new knowledge rather than just how to use current knowledge more efficiently (Liu, 2006). In this sense, increasing the KM practices that are being utilized cumulatively in organizations would improve the job performance of individuals (Harb, 2017) and creates a more empowering work environment. For instance, broadening the scope of KM practices, such as a database of best practices, lessons learned, manuals of training, etc., would contribute to increasing the timely access to information, supporting the employees' internal communication, and collaboration and enhancing the ability to obtain prompt feedback. This, in turn, stimulates ideas and learning (Harb, 2017). Thus, in this study, knowledge exploration is more related to an organization's ability to adopt a wider range of KM practices in the workplace. The potential value of applying various new practices could be achieved by enabling individuals to generate innovative solutions to work issues (Luo and Ling, 2013). Through explorative usage, employees have the opportunity to experiment with new work alternatives and apply them (March, 1991), thereby enhancing work performance and create a favorable work environment that empowers them. Therefore, this study suggests the following hypotheses:

H1a: A higher level of KM practices exploration in an organization will most likely lead to a higher level of employee empowerment.

H1b: A higher level of KM practices exploration in an organization will most likely lead to a higher level of employee performance.

Knowledge Exploitation

Exploitation refers to 'the assimilation of existing knowledge management practices in organizations' (Gray, 2001). It reflects a greater assimilation focus (Setia et al., 2011) and includes elements such as 'refinement, choice, production, efficiency,

selection, implementation, and execution' (March, 1991). In addition to implementing new KM practices, organizations must also sustain their use over time to improve the work environment. This highlights the importance of both adopting a diverse range of KM practices and enhancing exploitation of these practices in order to achieve greater improvement in job performance and work environment (Harb, 2017). In this study, pertains to an individual's level of exposure (i.e., usage period) to KM practices in performing tasks. Over time, as employees gain more experience and develop new skills, they become more proficient in these KM practices, and their internal learning and ability to share and create new knowledge would enhance. Consequently, KM longevity has a potential contribution to create superior job performance and conditions to enhance individual empowerment in organizations. Therefore, this study suggests the following hypotheses:

H2a: A higher level of KM practices exploitation will most likely lead to a higher level of employee empowerment.

H2b: A higher level of KM practices exploitation will most likely lead to a higher level of employee performance.

Employee Psychological Empowerment and Job Performance

Employee job performance refers to the extent to which an employee fulfills their duties and responsibilities (Shields et al., 2015). Studies found several factors that contribute to the individual's job performance, such as recognition and appreciation, organizational culture, and employee empowerment. Employee empowerment, also referred to as psychological empowerment, is linked to the intrinsic motivation and involves employee's self-perception of their ability, autonomy, work environment impact, and job significance (Seibert et al., 2011). Employee psychological empowerment has been recognized as an essential contributor to individual job performance and in turn to organizational success in organizational behavior literature (Danit & Menon, 2012). Shih and Tasi (2016) suggest that empowerment aims to improve employees' attitudes towards their jobs and organizations, causing them to perform better, which is also applicable to their moral and psychological well-being. Studies have found that psychological empowerment positively impacts job performance by boosting employee motivation, commitment, productivity, and satisfaction (Ahmad & Manzoor, 2017; Hewagama et al., 2019). Spreitzer et al. (1999) proposed a four-dimensional framework, including meaning, competence, self-determination, and impact, to conceptualize psychological empowerment. In line with this framework, this study adopts the four dimensions to operationalize the concept of psychological empowerment and suggests the following hypotheses:

H3: A higher level of employee empowerment will most likely lead to a higher level of employee performance.

Previous research suggested that employees' feelings of empowerment increase their willingness to contribute to improving their work performance. The research by Abualoush et al. (2018) found that knowledge management, through the mediating factor of empowerment, has a significant positive effect on employee performance in the

pharmaceutical industry. Similarly, a study by Hameed et al. (2020) argued that green employee empowerment mediates the relationship between green human resource management practices and employees' environmental performance. They built their case on the theory of social exchange, which states that employees are more likely to reciprocate favorable behavior toward the environment when they perceive benefits from organizational actions. This theory, as described by Cropanzano and Mitchell (2005), suggests that social exchange involves actions that are dependent on the rewarding reactions of others and lead to mutually beneficial transactions and relationships over time. The current study proposes employee empowerment as a mediator between KM practices exploration and exploitation and employees' performance. Based on the theory of social exchange, when employees feel empowered through KM practices, they feel inclined to improve their performance as a form of reciprocation. These arguments provide theoretical support for the proposed role of employee empowerment as a mediator between KM practices exploration and exploitation and employees' performance. As a result, this study suggests the following hypotheses. The research model is presented in Fig. 1.

H4: Employee empowerment mediates the relationship between KM practices exploration and employee performance.

H5: Employee empowerment mediates the relationship between KM practices exploitation and employee performance.

Research Method

Sample

This research investigates the influence of KM practices exploitation and exploration on Employee performance and empowerment. The sample population consists of faculty members and administrative staff at private and public universities in Jordan. The data were collected by a questionnaire method using a convenience sampling technique. Researchers made phone calls and sent emails to the head of departments to

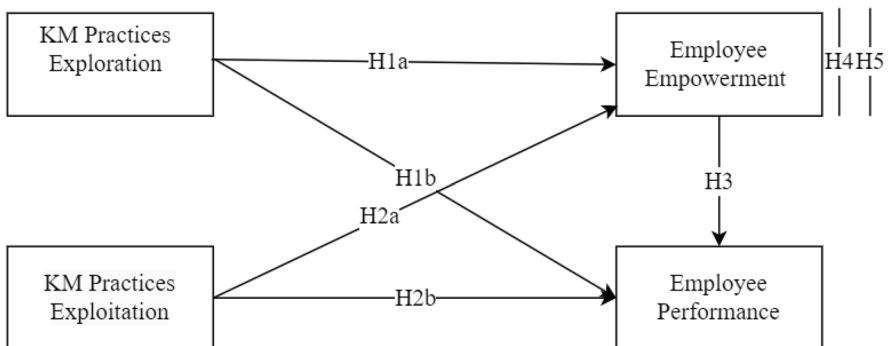


Fig. 1 Research model

explain the purpose of the study and to solicit support for this study. Using an online survey tool, we sent the link of the questionnaire along with the purpose of the study and the necessary confidentiality information to the universities that agreed to participate in the study. Of the responded cases, 163 valid questionnaires were used in this study. The respondents consisted of 31 faculty members, 118 administrative staff, and 14 are both faculty members and hold an administrative position.

Table 1 presents the demographic detail of respondents. Results of descriptive statistics show that 52.8% of the respondents are male and 47.2% are female. Also, 44.2% are under 36 years of age, 52.8% are between 36 and 55 years old, and 3.1% are over 55 years old. Besides, 4.3% have a high school education, 14.1% have a diploma, 34.4% have a bachelor's degree, 19.6% have a master's degree, and 27.6% have a PhD. The table also shows the position and years of experience of respondents.

Measures

The research model consists of four constructs: KM practices exploitation and KM practices exploration as independent variables, performance, and empowerment as dependent variables. The questionnaire used in this study to gather data and test the research hypotheses consists of 39 questions related to KM practices exploitation (in two dimensions: ICT KM practices exploitation, and HRM KM practices exploitation), KM practices

Table 1 Demographic detail of respondents

Variable		N	%
Gender	Male	86	52.8
	Female	77	47.2
Age Group	Less than 25 years	8	4.9
	25-35 years	64	39.3
	36-45 years	65	39.9
	46-55 years	21	12.9
	More than 55 years	5	3.1
Educational level	High school	7	4.3
	Diploma	23	14.1
	Bachelor	56	34.4
	Master	32	19.6
	PhD	45	27.6
Current position	Faculty member	31	19
	Administrative staff	118	72.4
	Faculty member and	14	8.6
Years of experience	Less than 2 years	9	5.5
	2-4 years	16	9.8
	5-10 years	63	38.7
	11-15 years	30	18.4
	16-20 years	20	12.3
	More than 20 years	25	15.3

exploration (in two dimensions: ICT KM practices exploration, and HRM KM practices exploration), performance, and empowerment (in four dimensions: competency, autonomy, job meaningfulness, and effectiveness). Content validity of the survey items was based on previous relevant studies. In particular, to assess measure performance, the Perceived Performance Impact Questionnaire by Goodhue and Thompson (1995) was utilized. The questionnaire by Spreitzer (1995) and Feiz, Soltani, and Farsizadeh, (2019) was used to assess empowerment. To assess KM practices exploitation, the questionnaire by Luo and Ling (2013) was utilized, and the questionnaires by Singh et al. (2006) and Andreeva and Kianto (2012) were employed to measure KM practices exploration with slight modifications to fit the research context.

The measurement items were further evaluated for ease of understanding, clarity, and appropriateness by pretest students who took a knowledge management course. The pilot sample was excluded from the study sample. We also consulted some faculty members and administrative staff who have expertise in the KM domain about the survey items. Minor modifications were made to the questionnaire based on the suggestions and comments we received.

It is worth noting that because this study used a single administration survey methodology, it is necessary to assess the common method bias (Tehseen, Ramayah, & Sajilan, 2017). As a result, we used the correlation matrix procedure to evaluate the effect of common method bias (Tehseen et al., 2017). If the correlation between constructs are greater than 0.9, the common method bias will be an issue. The latent variable correlations in this study are depicted in Table 2. The correlations between all constructs were found to be less than 0.9, as shown in Table 2. As a result, common method bias is not an issue in this study.

Results

The current study is an exploratory investigation into a specific phenomenon, therefore, the questionnaire was used to understand employees' perspectives and experiences with KM practices. When the goal of the study is to predict and explain key target

Table 2 Latent variable correlations

Correlations	1	2	3	4	5	6	7	8	9
HRM_Exploration	1								
ICT_Exploration	.742	1							
Exploitation_HRM	-.378	-.207	1						
Exploitation_ICT	-.392	-.259	.687	1					
Competence	.221	.601	.104	.139	1				
Autonomy	.612	.652	-.231	-.078	.564	1			
Effectiveness	.572	.667	-.139	-.103	.593	.696	1		
Meaningfulness	.291	.637	.053	.027	.855	.530	.625	1	
Performance	.402	.611	.008	-.033	.664	.482	.497	.629	1

constructs, partial least squares structural equation modeling (PLS-SEM) would be the appropriate choice to use (Hair et al., 2017). Therefore, in this study, to test the relationships between the research model constructs, we used partial least squares (PLS) using SmartPLS (Hair et al., 2014). The analysis was divided into two parts: the measurement model and the structural model (Hair et al., 2014). In the measurement model, validity and reliability results were reported for the research measurement items. Then, paths significance between the model constructs were estimated in the structural model.

The Measurement Model

The measurement model was evaluated for its reliability (internal consistency reliability and indicator reliability), convergent validity, and discriminant validity.

Internal consistency reliability was assessed by composite reliability. As shown in Table 3, the resulting values of composite reliability ranged from 0.90 to 0.97, which are above the acceptable threshold of 0.7 (Nunnally, 1970).

Indicator reliability was evaluated by examining standardized outer loading. As shown in Table 2, the loadings for all measurement items on their respective constructs are between 0.56 and 1, which is considered acceptable. This shows that the measurement items or indicators have got enough reliability.

To evaluate convergent validity, the average variance extracted (AVE) was used. The AVE values for all constructs were above the threshold value of 0.5 (see Table 3) (Hair et al., 2014).

The third criterion to examine the measurement model is discriminant validity. Fornell and Larcker test was used (Fornell & Larcker, 1981). According to this test, the square root of the AVEs for a construct should be higher than its correlation with other constructs. One indicator of HRM exploration was deleted to resolve discriminant validity issues. Thus, as reported in Table 4, none of the correlations is greater than the square root of AVE for each single construct. Thus, this shows that all constructs are empirically distinct.

Taken together, the results of the measurement model evaluation provide evidence for the reliability and validity of our constructs.

The Results of the Structural Model

In this section, we describe the relationships between the research model constructs. Table 5 displays path coefficients and their significance levels (p-values). As shown in Table 5, the following relationships in the structural model are statistically significant: KM practices exploration has a direct positive effect on employee performance with $p < 0.05$. P-value between KM practices exploration and employee empowerment is less than 0.001, suggesting that KM practices exploration has a direct positive effect on empowerment. Results also show that KM practices exploitation has a direct positive impact on employee empowerment with a p-value less than 0.001. However, the link between KM practices exploitation and employee performance is not supported, with a p-value greater than 0.05. Further, the results provide evidence

Table 3

Construct	Dimension	Items	Loadings	Composite reliability	AVE
KM practices exploration	HRM_Exploration	HRM1	0.76	0.94	0.51
		HRM2	0.79		
		HRM3	0.71		
		HRM4	0.80		
		HRM5	0.56		
		HRM6	0.82		
		HRM7	0.84		
		HRM9	0.75		
		HRM10	0.68		
		HRM11	0.81		
		HRM12	0.82		
		ICT_Exploration	ICT1		
	ICT2		0.79		
	ICT3		0.81		
ICT4	0.82				
ICT5	0.77				
ICT6	0.79				
KM practices exploitation	HRM_exploitation	HRM_Exploitation*	1	0.90	0.82
	ICT_exploitation	ICT_Exploitation*	1		
Performance		Performance1	0.97	0.97	0.93
		Performance2	0.97		
		Performance3	0.94		
Empowerment	Competence	Competence 1	0.94	0.95	0.59
		Competence 2	0.80		
		Competence 3	0.93		
		Competence 4	0.96		
	Autonomy	Autonomy 1	0.88		
		Autonomy 2	0.90		
		Autonomy 3	0.91		
		Autonomy 4	0.81		
	Meaningfulness	Meaningfulness 1	0.92		
		Meaningfulness 2	0.96		
		Meaningfulness 3	0.95		
		Meaningfulness 4	0.94		
	Effectiveness	Effectiveness 1	0.83		
		Effectiveness 2	0.85		
		Effectiveness 3	0.89		
		Effectiveness 4	0.78		

*Represents single item measures

Table 4 Fornell-Larcker criterion

Dimension	1	2	3	4	5	6	7	8
1 HRM_Exploration	0.77							
2 ICT_Exploration	0.75	0.77						
3 HRM_exploitation	-0.38	-0.13	1					
4 ICT_exploitation	-0.39	-0.25	0.65	1				
5 Competence	0.21	0.59	0.10	0.13	0.91			
6 Autonomy	0.61	0.64	-0.22	-0.06	0.55	0.88		
7 Meaningfulness	0.29	0.62	0.05	0.03	0.85	0.52	0.94	
8 Effectiveness	0.57	0.66	-0.13	-0.09	0.58	0.69	0.62	0.84

*The data on the diagonal is the square root of AVE of the construct.

of the positive impact of employee empowerment on employee performance with a p -value less than 0.001.

The indirect effect of KM practices exploration on employee performance through employee empowerment is positive and significant with $p < 0.001$. Thus, Hypothesis 4 is supported. Also, Hypothesis 5 regarding the indirect effect of KM practices exploitation on employee performance through employee empowerment is supported with $p < 0.01$.

Table 6 displays the R square and Square Adjusted of the dependent variables. The R Square Adjusted of empowerment was 0.465 and 0.465 of performance. These results indicate that the model is sound in terms of the explained variance of the dependent variables.

Discussion

Theoretical Implications

A skilled human workforce, capable of performing their tasks effectively and efficiently, is a critical factor in the development and progress of organizations. Empowering and enhancing individual performance requires a supportive environment within the organization to achieve maximum productivity and efficiency. Previous research has suggested that knowledge management activities can foster employee empowerment and improve performance (e.g., Feiz, Soltani, and Farsizadeh, 2019). Thus, the aim of this study is to explore the impact of KM practices exploration and exploitation on employees' individual performance and empowerment. The first theoretical contribution of this study is to link the relationship between KM practices exploration and exploitation with employee performance and empowerment. As previously noted, existing studies proposed that KM practices have positive impact on organizational performance. Our study extends the literature by offering new insights at the individual level. We found that KM practices exploration and exploitation have a statistically significant positive effect on both employee performance and empowerment in the higher education context. Our result is in line

Table 5 Path coefficients, *T*-value, *P*-value

Hypotheses	Path	Original Sample	T Statistics	<i>P</i> Values	Results
H1a	KM Practices Exploration -> Performance	0.240	2.066	0.039	Accepted
H2a	KM Practices Exploitation -> Performance	0.083	1.223	0.222	Rejected
H1b	KM Practices Exploration -> Empowerment	0.737	15.815	0.000	Accepted
H2b	KM Practices Exploitation -> Empowerment	0.249	4.213	0.000	Accepted
H3	Empowerment -> Performance	0.516	4.638	0.000	Accepted
H4	KM Practices Exploration -> Empowerment -> Performance	0.383	4.680	0.000	Accepted
H5	KM Practices Exploitation -> Empowerment -> Performance	0.133	3.060	0.002	Accepted

Table 6 R square values

	R Square	R Square Adjusted
Empowerment	0.471	0.465
Performance	0.475	0.465

with extant studies (e.g., Zhang et al., 2022), which also found that both employee exploration, referring to an individual's ability to develop and experiment with new knowledge, skills, and opportunities within their work tasks, and employee exploitation, relating to an individual's capability to refine and enhance existing knowledge and skills in their work tasks, have a positive impact on task performance. This supports the notion that activities related to knowledge management can create a supportive environment for universities to improve the performance and empowerment of their employees. This also provides further evidence of the value of knowledge management activities in improving organizational performance and competencies (Feiz, Soltani, and Farsizadeh, 2019).

The second contribution of this study is the mediating role of employee empowerment. As shown in the result section, the hypothesized relationship between KM practices exploitation and employee performance was not supported. Although it may seem logical that KM practices exploitation would have a direct influence on employee performance, this study does not confirm this hypothesis. This may be because employee psychological empowerment serves as a mediator in the relationship between KM practices exploitation and employee performance. In other words, KM practices exploitation does not directly influence employee performance, but rather empowers employees, leading to improved performance. Existing studies advocated that KM practices are used to create, share, and apply knowledge in order to achieve employee empowerment (e.g., Hasani, Sheikhesmaeili, 2016). Similarly, a recent study by Hendrawijaya (2019) found that employee empowerment mediates the effect of knowledge (education) on employee performance. In this context, empowering concerns with strengthening individuals and boosting their self-confidence to overcome their inability (Thomas and Velthouse, 1990).

Practical Implications

This study found a positive significant association between employee empowerment and performance. A stream of research postulated that employee performance is predicted by empowerment (e.g., Degago 2014; Saleem et al., 2019). An empowered employee leads to improved work quality, commitment, and performance. Some of the potential benefits of psychological empowerment (competence, autonomy, meaningfulness, and effectiveness) include deeper understanding of one's job role in the organization, increased their confidence and commitment levels, and high job performance. Worth noting, leveraging employee performance through employee empowerment, considering the strategies of implementing KM initiatives, is a

strategic importance in organizations as individual performance of an employee contributes to organizational performance. Practically, businesses need employees with high performance who can perform their job tasks effectively and efficiently to remain competitive (Saleem et al., 2019).

Additionally, in this study, we estimated the impact of both types of KM practices (HRM and ICT practices) on employee performance and empowerment. Previous literature (e.g., Andreeva and Kianto, 2012) suggest that to reap the potential benefits from KM practices, organizations should use both types of KM practices in a complementary manner to enhance knowledge sharing and creation. Since the area of knowledge management is vital and of high importance to organizations, it is suggested to have the required practices for facilitating aspects of knowledge management including creating, sharing, and applying knowledge among employees (Feiz, soltani, and Farsizadeh, 2019). Practically, we suggest that universities can establish appropriate policies to adapt and assimilate both ICT and HRM practices to empower their employees and leverage their performance. ICT practices include systems and tools for facilitating the process of communicating ideas and solutions, conducting research and collaborating with peers and experts, such as knowledge sharing tools, knowledge repository, and information technologies to support management decisions and knowledge work. At the level of HRM practices, universities need to focus on using various KM tools and systems such as reward systems for motivating knowledge sharing and creation.

Conclusion

To conclude, this study contributes to the literature on knowledge management by extending the understanding of how ICT and HRM KM practices are related to individual performance and empowerment and provide empirical evidence on the impact of KM practices exploration and exploitation on employee performance and empowerment in the context of higher education.

Limitations

This research is not without limitations. Firstly, the study has a sample limitation. Particularly, the results mainly obtained from the universities context and the survey sample size is relatively small. To still get a robust result, the study used PLS-PM which is well known to perform better for small sample size than traditional SEM approach. Additionally, there was an imbalance of participants' positions (72.4 were administrative staff). Lastly, the survey responses were self-reported by universities employees, and the single data source may result in common method bias. However, the findings indicated that common method bias was not an issue in this study. To better address this issue, future studies could collect data from various data sources.

Future Study

Due to the limitations of this study, we recommend that future researchers expand the sample and study the research model in other contexts or industries. Triangulate data from different universities, contexts, and time periods can provide a more exhaustive view of KM practices. Moreover, the indirect relationship between KM practices exploration and exploitation and employee performance should be further investigated through some other relevant mediators in the knowledge-intensive industry such as organizational culture, organizational learning, and technology utilization. It is recommended that future research replicate this study in different cultures such as western culture to validate the findings and gain a deeper understanding of how knowledge management practices can be adapted to different cultural contexts and how they impact performance in those cultures. Additionally, comparing and contrasting the effects of KM practices across cultures can provide valuable insights into how knowledge management can be implemented in an effective and culturally sensitive way.

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