Knowledge management–performance nexus: Mediating effect of motivation and innovation

Simona Cătălina Ştefan
Management Department, Bucharest University of Economic Studies, Bucharest, Romania
Ion Popa
Management Department, Bucharest University of Economic Studies, Bucharest, Romania and
Academy of Romanian Scientists, Bucharest, Romania, and
Ana Alexandra Olariu, Ştefan Cătălin Popa and Cătălina-Florentina Popa
Management Department, Bucharest University of Economic Studies, Bucharest, Romania

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Abstract

Purpose – The current study has a two-fold purpose. Firstly, it aims to analyze the extent to which knowledge management (KM) affects the performance of individuals (task and contextual) on the one hand and that of organizations (product or service, perceived and financial) on the other hand. Secondly, it proposes to investigate the mediating effect of motivation and innovation in the relationship between KM and individual and organizational performance.

Design/methodology/approach – Partial least squares structural equation modeling (PLS-SEM) was employed in this study, with mediation analysis performed using advanced PLS-SEM techniques. A total of 1,284 respondents from organizations in both the public and private sectors were included in the sample.

Findings – The findings emphasize that KM has a more significant direct effect on individual performance compared to organizational performance. Concurrently, in terms of indirect influence, it is found that KM, through motivation and innovation, has a positive and significant effect on both individual and organizational performances, with a higher influence on the organizational one.

Originality/value – The originality of the work can be noted in designing two different structural models to represent the proposed relationships at the individual and organizational levels. These findings could provide organizational decision makers with empirical evidence, helping them (1) internalize the significance of the KM process in organizations as well as its subsequent effects on individual and organizational performance and (2) identify factors that mediate variable relationships.

Keywords Employee performance, Innovation, Knowledge management, Motivation, Organizational performance, PLS-SEM

Paper type Research paper

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1. Introduction

With the global knowledge-based economy having grown at an exponential rate, it is imperative that organizations identify and implement optimal solutions that will enable them to establish a lasting competitive advantage. Despite its intangibility, organizational knowledge is, nowadays, considered an asset that generates a competitive advantage for modern companies (Gloet and Terziovski, 2004; Boumarafi and Jabnoun, 2008; López-Nicolás and Meroño-Cerdán, 2011; Valmohammadi and Ahmadi, 2015; Gonzalez and Martins, 2017; Kurniawati *et al.*, 2019; Bratianu *et al.*, 2021; Rezaei *et al.*, 2021). Besides constituting an organizational asset in the contemporary business environment, according to Abualoush *et al.* (2018), along with capital and human resources, knowledge constitutes one of the production factors with the greatest significance, a primary driver of economic growth and the trigger of technological advancement and production enhancement, as well as the factor that drives innovation and subsequently converts it into products and processes. Furthermore, Hiebeler (1996) pointed to the capitalization on organizational knowledge not only as a business advantage but also as a business imperative. Organizational knowledge is the ability that members of an organization have developed to make distinctions in the process of carrying out their activity, especially in concrete contexts, by implementing sets of generalizations whose application depends on historically evolved collective understandings (Tsoukas and Vladimirou, 2001).

On the other hand, Ferraris *et al.* (2020) outlined the reliance of a company's performance and innovative potential on its ability to acquire, transfer, and absorb external knowledge in organizational contexts. Consequently, to maintain competitiveness, it is imperative that organizations effectively and efficiently develop, identify, capture, and exchange their own knowledge and acumen. They should subsequently be capable of applying such knowledge on the challenges and opportunities confronting them. Knowledge management (KM) is defined as "the managerial process through which knowledge generation, acquisition, memory and retrieval, transfer, dissemination, and sharing, transformation, and use, as well as organizational learning are realized" (Brătianu, 2015, p. 10). du Plessis (2007) describes it as a management function through which knowledge is developed or located, knowledge flow is controlled and the effective and efficient application of knowledge is ensured to provide the organization with a competitive advantage in the long term. Other research (Kianto *et al.*, 2016) indicates that KM predominantly constitutes the development, provision, energization, and maintenance of suitable knowledge settings in the organizations for the purpose of motivating and empowering knowledgeable individuals to use, exchange and form new knowledge. According to Gholami *et al.* (2013), the main aim of KM is for resources and knowledge assets, technologies, processes, and infrastructures to be utilized in a rapid, effective, and creative manner so that organizational performance can be heightened. On the other hand, Nana *et al.* (2017) claimed that KM also contributes to enhancing the performance of employees.

In the literature, the relationship between KM and organization performance, in addition to the connection between KM and the performance of individual employees, have been explored by various researchers. Nevertheless, the relationships between the aforementioned variables have only been investigated simultaneously in a limited number of studies. To address the above-mentioned gaps in the literature, the aim of the current study is to propose two structural models that display how KM and both individual and organizational performance are directly related. Thus, the development of the aforementioned models will enable the influence of KM on individual and organizational performance to be identified and analyzed in the same study along with a comparison of such effects individually and organizationally. Moreover, the research contributes to the advancement of the literature by facilitating the analysis of such linkages among concepts focus on private and public organizations in Romania.

Conversely, other researchers have also identified different mediating factors in the relationship between KM and performance, including human capital (Rezaei *et al.*, 2021), intellectual capital (Iqbal *et al.*, 2019), organizational learning (Obeso *et al.*, 2020; Meher and Mishra, 2022), firm's customer centricity and market orientation (Dash, 2022), absorptive capacity (Migdadi, 2022), sustainable competitive advantage (Beigi *et al.*, 2023) or production technology, supply chain integration, and green supply chain (Hartono *et al.*, 2023). Nevertheless, extant research reveals that an organization's competitiveness largely stems from its capacity to constantly innovate (Rhodes *et al.*, 2008; Peng *et al.*, 2015), whereas different scholars regard the capacity of organizations to enhance their innovative abilities as a factor that contributes to their ability to grow and increase profits (Walecka-Jankowska, 2015). Moreover, other researchers believe that, besides the degree of innovation, other factors influencing KM include the extent of motivation and the degree to which employees are committed to the organization (Malhotra and Galletta, 2003), while motivational factors can also contribute to employee performance enhancement via knowledge development (Nana *et al.*, 2017). Thus, the current research takes motivation and innovation as mediating variables in the relationship between KM and both individual and organizational performance.

Furthermore, existing research has considered the effects of KM on performance at only one level: individual or organizational (Ogutu *et al.*, 2023; Urban and Matela, 2022). At the same time, at the level of Romania, the authors Zbuchea *et al.* (2019), argue that Romanian companies have demonstrated a weak relationship between knowledge management and knowledge and innovation capabilities, as well as performance.

However, since both levels are equally important, this research considered both KM effects and designed two different models to represent them in the same organizational context.

The issues for which adequate explanations have yet to be provided, along with the existing theoretical framework, which assisted with forming a general perspective on the KM process as well as individual and organizational framework, resulted in the development of the following research questions, to which this research will endeavor to discover relevant answers:

RQ1. What is the influence of the KM process on both individual and organizational performance?

RQ2. How could innovation and motivation mediate the relationship between KM and individual and organizational performance?

Hence, the aim of this study is to shed light on the role played by KM in shaping both individual and organizational performance as well as to investigate how it affects the aforementioned concepts. To achieve this aim, the specifics of KM as well as individual and organizational performance will be studied. Additionally, the study will endeavor to determine how KM indirectly affects individual and organizational performance via motivation and innovation.

The remainder of this paper is structured as follows: In Section 2, the specific characteristics of the KM concept are presented, along with the findings of other researchers on how KM influences employees' individual and organizational performance, reflecting the mediating role played by motivation and innovation in the relationship between the studied variables. Furthermore, justification for the formulated research hypotheses is provided. The methodology adopted in the research is presented in Section 3, followed by the results in Section 4. Section 5 introduces the discussion and lastly, Section 6 concludes the article along with implications, limitations, and suggestions for future studies.

2. Literature review

2.1 Knowledge management concept

KM denotes the utilization and advancement of organizational assets for the purpose of achieving the goals of the organization (Chiu and Chen, 2016). According to Rašula *et al.* (2012), KM is a process aimed at transforming individual knowledge into organizational knowledge. Through the creation, accumulation, organization, and use of knowledge, this process enables the achievement of objectives and the enhancement of organizational performance (Rehman and Iqbal, 2020; Urban and Matela, 2022). Cohen and Levinthal (1990) argue that in order to develop an effective absorptive capacity, whether it is general knowledge or problem-solving or learning skills, it is insufficient to merely briefly expose an individual to relevant prior knowledge. Intensity of effort is critical. Rivera and Rivera (2016) investigated the KM concept from varying angles and identified that the majority possess common elements, such as: (1) KM necessitates a set of organizational practices pertaining to people, technology, strategy, and environment; (2) KM is aimed at enhancing decision-making quality as well as organization productivity; (3) KM is aimed at improving the processes by which knowledge is created, stored, shared, and used.

The concept of KM represents a dynamic and continuous process involving different activities and sub-processes (Popa and Ştefan, 2019). In the literature, a variety of frameworks has been used to measure KM, which include: accumulation, utilization, sharing, ownership (Rašula *et al.*, 2012; Ogutu *et al.*, 2023); acquisitions, sharing, creation, codification, retention (Kianto *et al.*, 2016); knowledge acquisition, knowledge sharing, knowledge utilization (Popa *et al.*, 2018; Popa and Ştefan, 2019); knowledge generation, knowledge dissemination, knowledge shared interpretation, knowledge responsiveness (Fugate *et al.*, 2009); knowledge creation, knowledge acquisitions, knowledge sharing, knowledge storage, knowledge implementation (Gholami *et al.*, 2013); acquiring knowledge, converting it into useful form, applying or using it, and protecting it (Gold *et al.*, 2001); process of knowledge acquisition, dissemination and responsiveness (Gowen *et al.*, 2009); knowledge creation, knowledge storage, knowledge transfer, knowledge application (Rivera and Rivera, 2016); acquisitions of knowledge, storage of knowledge, distribution of knowledge, use of knowledge (Gonzalez and Martins, 2017). For the purpose of the current research, the KM process was approached through four subprocesses and activities, respectively, knowledge acquisition, knowledge sharing, knowledge storage, and knowledge use/utilization.

Knowledge acquisition denotes the process of collecting knowledge and information, either internally or externally, as well the process of developing new knowledge in the context of extant knowledge. Numerous terms have been utilized for the purpose of describing the process of knowledge acquisition, including acquiring, generating, collaborating, capturing, creating, and seeking, the common aspect of all these terms being that knowledge is accumulated (Gold *et al.*, 2001). Gholami *et al.* (2013) claimed that knowledge acquisition incorporates the process by which suitable knowledge is acquired and learned from various internal and external sources, including personal experiences, expert opinions, and pertinent documents, among others.

Knowledge sharing indicates the process by which information is shared by organizational employees internally or externally. Put differently, it refers to the exchange of individual and organizational knowledge (Gholami *et al.*, 2013). Moreover, knowledge sharing constitutes the process by which new information collected from various sources is shared and can subsequently generate new knowledge, cognizance, and information (Gonzalez and Martins, 2017). Knowledge sharing implies the distribution of suitable knowledge to appropriate individuals in a timely manner and it is important that organizations create an organizational environment conducive to such activities as well as establish an infrastructure that facilitates knowledge sharing (Rivera and Rivera, 2016).

According to the kind of knowledge being shared, it is possible to utilize different channels, including formal or informal and personal or impersonal (Alavi and Leidner, 2001).

Knowledge storage implies the process of keeping organizational knowledge and information to facilitate its subsequent use in organizational processes. It also entails the necessity to organize and store a variety of information and knowledge forms, including best-practice documentation, structured information, codified knowledge, written documents, documented procedures, and tacit knowledge (Alavi and Leidner, 2001; Rivera and Rivera, 2016).

Knowledge use/utilization represents the ultimate phase of the KM process and indicates the business procedures implied by organizations in the usage of knowledge and information aimed at enhancing performance. In cases where knowledge utilization is ineffective, efforts aimed at developing/acquiring, sharing, and storing knowledge will be fruitless (Rivera and Rivera, 2016).

2.2 Influence of knowledge management on individual performance

Knowledge is nowadays regarded as being a valuable resource for enhancing performance, particularly in relation to employees (Sinaga *et al.*, 2020). Furthermore, according to Sinaga *et al.* (2020), for an organization to achieve success, it must have employees who are prepared to go beyond their job requirements and enhance the organizational performance above what is expected. Individual performance (employee performance) can be measured in terms of contextual performance and task performance. Specifically, task performance denotes the extent to which employees are engaged in their work, as well as the degree to which they perform the duties necessitated by their job. Contextual performance indicates additional tasks performed by employees outside those required by the official criteria for their job (Peng *et al.*, 2015). Numerous different studies in the literature have examined the relationship between KM and the individual performance of employees. For example, Akram and Hilman (2018) determined that the KM processes (acquisition, sharing and creation) significantly and positively influence employee individual performance (measured in terms of task and contextual performance) in the Pakistani banking industry. Similarly, regarding the connection between KM and individual performance, Kianto *et al.* (2016) identified that knowledge acquisition leads to an enhancement of employees' job satisfaction, as the availability of new knowledge can enable employees to perform tasks more efficiently. Gholami *et al.* (2013) determined that enhancing KM practices (most effective after knowledge dissemination) is a critical factor in improving productivity, the performance of employees, employee work relationships, and the creativity of employees which denote general organizational performance. The findings of other researchers (Nana *et al.*, 2017) reveal that KM positively and significantly impacts employee performance when proxied by work performance. Mahmudi and Monavvar (2016) studied the effect of KM on improving employee performance in the Tax Affairs Administration of Ease Azerbaijan and the findings showed that the KM dimensions (knowledge creation, knowledge acquisition, knowledge organization, knowledge distribution and knowledge application) positively influenced employee performance. Based on the above discussions, the following hypothesis can be formulated:

H1. KM influences individual performance (contextual performance–H1a and task performance–H1b).

2.3 Influence of knowledge management on organizational performance

Organizational performance is a critical area of firms' management and could be considered the most important test criterion for organization success (Gholami *et al.*, 2013).

The management of every organization focus on enhancing the performance of their organization (Valmohammadi and Ahmadi, 2015). As stated by Boumarafi and Jabnoun (2008), it is possible to measure the performance of an organization according to the extent to which it exerts its efficiency, decision making, customer satisfaction, financial benefits, as well as the overall work quality. Further research (Kiessling *et al.*, 2009) implied that organizational performance outcome can be measured by three variables: product improvement, employee improvement and firm innovation. Gholami *et al.* (2013) used six variables to measure organizational performance: productivity, staff performance, financial performance, work relationships, innovation, and customer satisfaction.

In the modern era, there is increased awareness among organizations regarding the critical role of knowledge and KM in driving organizational performance, as well as in improving their ability to adapt and compete. At the same time, researchers have increased their focus on the analysis and development of tools, models, and theories which can more effectively describe the KM process and its mechanisms that can lead to increased organizational performance. Numerous studies in the literature have investigated the association between KM and organizational performance. According to Kurniawati *et al.* (2019), managing knowledge can improve organizational performance, both the financial and non-financial one. Sahibzada *et al.* (2020) alluded to the fact that it is only possible to enhance organizational performance by effectively applying knowledge that has previously been created, stored, and transferred. Chiu and Chen (2016), Gold *et al.* (2001) and Reisi *et al.* (2013) investigated the relationship between the KM process dimensions (knowledge acquisition, knowledge conversion, knowledge protection, and knowledge application) and organizational effectiveness. Their findings indicated that all dimensions of KM were directly, positively, and significantly related to organizational effectiveness. Similarly, Kimaiyo *et al.* (2015) also examined the connection between the four aforementioned KM process dimensions, discovering that all of them have a direct and significant effect on organizational performance. The findings of other researchers (Mills and Smith, 2011) revealed that knowledge acquisition, knowledge application and knowledge protection were significantly and positively related to organizational performance. Additionally, regarding organizational performance, Ngah *et al.* (2016) explored the effect of KM capabilities on organizational performance in the public sector. The findings revealed that KM capabilities (acquisitions, conversion, application, storage, dissemination, and protection) have a positive and significant relationship with organizational performance. Rezaei *et al.* (2021) also identified the existence of a positive effect of KM on organizational performance.

Furthermore, Liu and Deng (2015) find that knowledge acquisition, knowledge conversion, knowledge application, and knowledge protection have a positive effect on the performance of outsourcing business processes, leading them to consider the dimensions of the KM process as an effective tool to improve organizational performance. In further research conducted by Khanal and Poudel (2017), the connection among KM, employee satisfaction and performance were examined, revealing that KM was positively and significantly related to organizational performance via employee satisfaction. In their research, Zack *et al.* (2009) emphasized that there is a direct relationship between KM practices and organization performance which has a subsequent direct influence on financial performance. All the above emphasize the fact that KM process dimensions have significance in improving organizational performance and accomplishing enhanced performance. Based on these findings, the following hypothesis can be formulated:

H2. KM influences organizational performance (financial performance – H2a, perceived performance – H2b, and product / service performance – H2c).

2.4 Employee motivation and innovation as mediators between KM and performance

An organization's competitiveness largely stems from its capacity to constantly innovate (Rhodes *et al.*, 2008; Peng *et al.*, 2015). Some authors suggest that extent to which innovation is implemented in the business models may result in new working patterns and new products, supporting sustainable performance (Simionescu *et al.*, 2023), and increasing innovation capacity is significant for facilitating organization's ongoing profitability and growth (Walecka-Jankowska, 2015). Furthermore, du Plessis (2007) determined that, in the modern business environment, innovation has become a mainstay of organizations, being highly dependent on the availability of knowledge, which requires that knowledge expansion be well managed to facilitate successful innovation. Innovation is believed to play a critical role in the creation of organizational knowledge and in generating a flow of knowledge and information that can produce change in the organization's wider knowledge systems (Nonaka, 1994), whereas different researchers (Peng *et al.*, 2015) believe that knowledge sharing has particular importance for the promotion of innovation. Rhodes *et al.* (2008) investigated the relationship between knowledge transfer, innovation capability, and organizational performance, finding that innovative capability is positively and significantly impacted by knowledge transfer, while innovation and organizational performance are also positively related. Rezaei *et al.* (2021) state that the dimensions of KM (knowledge acquisition, knowledge sharing and knowledge use) have a positive influence on innovation because they equip employees in organizations with skills and lay the foundation for innovation. Different researchers (Braganza *et al.*, 1999; Gloet and Terziovski, 2004; Vaccaro *et al.*, 2010; Yang, 2010; López-Nicolás and Meroño-Cerdán, 2011) have identified that KM has the potential to indirectly influence competitiveness and performance via the organization's increased innovation capability. For instance, Vaccaro *et al.* (2010) determined that KM can play an indirect role in enhancing an organization's financial performance via innovation (measured according to improvements in new product performance); Yang (2010) assumes that a positive relationship could exist between KM strategy and strategic performance if the organization's innovation capacity is increased; Lee and Sukoco (2007) established that innovation can play a mediating role in the KM capability – organizational performance relationship with respect to effectiveness. Furthermore, Kurniawati *et al.* (2019) conducted a systematic review of the literature, finding empirical evidence of the relationship between KM, innovation, and performance in 22 studies, while six articles reported that innovation mediates the relationship between KM and performance.

According to the findings of the literature review presented above, it can be observed that innovation may act as a mediator in the KM-performance relationship, which allows the formulation of the following hypotheses:

H3. Innovation mediates the relationship between KM and individual performance (contextual performance – H3a and task performance – H3b).

H4. Innovation mediates the relationship between KM and organizational performance (financial performance – H4a, perceived performance – H4b and product / service performance – H4c).

Malhotra and Galletta (2003) believe that, in addition to technological availability, access to information and the degree of innovation of organizations, KM systems can also be influenced by the motivation and commitment of employees in those organizations. Different researchers (Stenmark, 2000) assert that knowledge workers' motivation and commitment enable knowledge sharing as this generally does not occur when workers are not personally motivated (Stenmark, 2000). Conversely, Nana *et al.* (2017) insist that it is important that employee performance is improved via knowledge development which can be achieved through capability and motivation factors. In summary, the following hypotheses can be formulated:

H5. Employee motivation mediates the relationship between KM and individual performance (contextual performance – H5a and task performance – H5b).

H6. Employee motivation mediates the relationship between KM and organizational performance (financial performance – H6a, perceived performance – H6b and product / service performance – H6c).

Given the above theoretical approach, past research and our own experience, a conceptual model is proposed in Figure 1.

3. Methodology

3.1 Participants and procedure

The purpose of this research is to analyze the extent to which KM influences individual performance, on the one hand, and organizational performance, on the other. Furthermore, the objective was to analyze the mediating effect of innovation and motivation in the relationship between KM and individual and organizational performance. To achieve this goal, a study was carried out having as a research tool a questionnaire addressed to employees of public and private sector organizations in Romania. The research was conducted at the end of 2021 and potential respondents were asked to provide answers referring to their current workplace and their recent working conditions. Therefore, regardless of the industry, size, or age of the firms for which they work, the research population focused on employees from all of Romania's development regions. Furthermore, the research population included both men and women, regardless of the managerial or executive position held by the respondents, their degree of education or seniority, or their age within the business.

The questionnaire was distributed online, with the help of the Google Forms platform, which allowed automatic centralization of data in a database and the use of statistical methods and software for data processing. The questionnaire was preceded by a preamble that informed the respondents about the research's goals, data confidentiality, voluntary

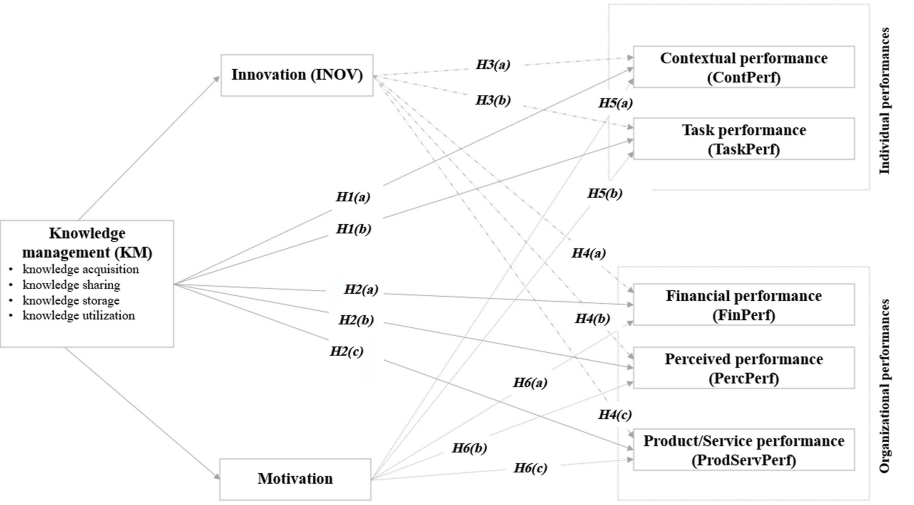

Figure 1.
Conceptual model and hypotheses

Source(s): Authors

involvement in the survey, and the time needed to complete it. The preamble was followed by a closed question asking them to indicate their agreement to participate in the study.

Following the application of this questionnaire, 1,388 responses were collected. Of these, 4 were removed because respondents no longer wanted to continue participating in this study, and 100 responses were removed because they were provided by respondents who did not have employee status. Preliminary analysis revealed that there were no cases with missing data or suspicious responses. Thus, 1,284 cases were validated to be analyzed in this research. The sample of this investigation was a non-probabilistic sample and consisted of employees of public and private sector organizations in Romania. Therefore, of a total of 1,284 respondents, 842 (65.58%) were employed in private sector organizations and 442 (34.42%) in public sector organizations. At the same time, 38.78% of the respondents were employed in organizations with more than 250 employees and 22.43% were employed in organizations with numbers of employees ranging between 50 and 249. The rest of the respondents were employed in an organization with fewer than 50 employees at the time of their participation in the survey.

3.2 Measures

The questionnaire was designed after analyzing the specialized literature relevant to the topic addressed to develop the most suitable items to measure the variables considered in the research. As mentioned previously, this research sought to determine the effects of KM on two categories of performance, namely individual performance and organizational performance, as well as the mediating effect of innovation and motivation within the KM – performance relationship. Therefore, this investigation included five scales, composed of several subscales, respectively: KM, individual performance, organizational performance, innovation, and motivation. In this sense, the variables included in this research, together with the references on which the development of the specific items for each variable was based, are presented in Supplementary material (Appendix A and Appendix B) and explained in the following paragraphs.

The *KM* scale was measured through four dimensions, respectively: acquisition, share, storage, and utilization. Therefore, respondents were asked to state to what extent they agree with 26 statements regarding knowledge acquisition, knowledge sharing, knowledge storage and knowledge use process within the organization where they are employed in (Gold *et al.*, 2001; Fugate *et al.*, 2009; Rašula *et al.*, 2012; Gholami *et al.*, 2013; Rivera and Rivera, 2016; Gonzalez and Martins, 2017; Popa *et al.*, 2018; Popa and Ştefan, 2019). In the present paper, these four dimensions were grouped in a single second-order construct, called knowledge management (KM).

Individual performance: In this research, individual performance was measured through two subdimensions: conceptual performance and task performance. Therefore, to measure this scale, respondents expressed their perceptions on 5 items corresponding to the task performance dimension and 8 items corresponding to the contextual performance dimension (Koopmans *et al.*, 2014a, b). Task performance pertained to employees' involvement in solving the tasks required by the job (such as task planning, efficient performance of tasks with minimal effort), while contextual performance referred to employees' additional work involvement (such as taking on new and challenging tasks, taking on additional responsibilities, etc.).

Organizational performance: This scale was measured using 14 items grouped into 3 subdimensions: financial performance (4 items), perceived performance (4 items), and product/service performance (6 items) (Chang *et al.*, 2003; Rosenzweig *et al.*, 2003; Acar and Acar, 2014; Hogan and Coote, 2014). In the context of this study, financial performance referred to items related to the overall success of the organization, increasing revenues,

decreasing costs, increasing the organization's position in the competitive environment. Perceived performance pertained to the extent to which the number of employees, the level of loyalty, the level of satisfaction and training of employees increased at the organization level. Product/service performance was measured by items related to the increase in the number of customers, their satisfaction and loyalty, the decrease in customer complaints, the increase in the quality of the products/services and the improvement of the image of the organization.

Innovation was used within the models designed as a second-order construct, being measured through five subdimensions: behavior innovativeness (4 items); product innovativeness (4 items); process innovativeness (4 items); market innovativeness (4 items); strategic innovativeness (4 items) (Wang and Ahmed, 2004).

Employee motivation represented a measurement scale made up of 9 items. Specifically, to measure this variable, respondents were asked to express their opinion on each of the 9 items (Tsai, 2011; Paais and Pattiruhu, 2020).

All items used in this research were measured on a five-point Likert scale (with options from "total disagreement" to "total agreement"), except for items specific to organizational performance sub-dimensions, which, although they were also measured on a five-point scale, the options ranged from "Not at all" to "To a very large extent".

3.3 Data analysis

For the specification and evaluation of the measurement and structural model and for testing research hypotheses partial least squares structural equation modeling (PLS-SEM) with SmartPLS 3.3.3 (Ringle *et al.*, 2015) was considered. As Cepeda-Carrion *et al.* (2019) also find, in the recent years, PLS-SEM has been increasingly used in empirical research on KM, being also used in other research on the topic of KM and performance (Beigi *et al.*, 2023; Dash, 2022; Hartono *et al.*, 2023; Meher and Mishra, 2022; Migdadi, 2022). More precisely, two structural models were designed within the present research:

(1) Model 1 aimed to study the influence of KM on individual performances and included one exogenous construct: knowledge management (KM) (a second order construct which includes four first order constructs, namely, i. knowledge acquisition (KMach), ii. knowledge sharing (KMsha), iii. knowledge storage (KMst) and iv. knowledge utilization (KMuse)) and four endogenous ones: contextual performance (ContPerf), task performance (TaskPerf), innovativeness (INOV – second order construct) and motivation.

(2) Model 2 focused on analyzing the influence of KM on organizational performance and included the same constructs for KM, innovation and motivation and four constructs to measure organizational performance: financial performance (FinPerf), perceived performance (PercPerf), product/services performance (ProdServPerf)

As recommended in the context of the use of PLS-SEM techniques (Hair *et al.*, 2017), both Model 1 and Model 2 were evaluated against the measurement model and the structural model.

4. Results

4.1 Measurement and structural model

Measurement (outer) models were evaluated, as recommended (Hair *et al.*, 2017), with respect to (1) internal consistency, using composite reliability (CR) and Cronbach's Alpha coefficient (α) and (2) convergent and discriminant validity, trough indicator loadings, average variance extracted (AVE) and, respectively, Fornell–Larcker criterion. For both Model 1 and Model 2, the results obtained regarding internal consistency and convergent validity are presented in

Supplementary material (Appendix A and Appendix B), and the values obtained for these indicators were above the recommended limit values, respectively (Hair *et al.*, 2017; Henseler *et al.*, 2015): indicator loadings >0.70, $\alpha > 0.70$; CR > 0.70; AVE >0.50. The evaluation of discriminant validity was achieved using the Fornell-Larcker criterion. Thus, the values of the Fornell-Larcker criterion of both models (presented in Supplementary material (Appendix C and Appendix D)) revealed that the square roots of the average variance extracted (AVE) of each latent variable had higher values than the correlations of the latent variables with any other latent variables (Hair. *et al.*, 2017; Henseler *et al.*, 2009; Hulland, 1999), with one exception (in the case of the constructs KMUse and KMSt), which highlights the discriminant validity for the constructs in the models. Consequently, the values obtained for the indicators specific to the measurement model support the validity and fidelity of the measurement models.

Considering structural (inner) model evaluation, first, possible collinearity issues were excluded, since all VIF values were found below 5 (Sarstedt *et al.*, 2017). The predictive value of the structural models was also evaluated in terms of the R^2 coefficients. Considering the individual performance, the R^2 coefficients indicated that KM through its four dimensions, together with the degree of innovation and motivation, can explain 34.90% of the variance of contextual performance ($R^2 = 0.349$), and 31.90% of the variance of task performance ($R^2 = 0.319$). On the other hand, with respect to Model 2, the one specific to the links between KM and organizational performance, the coefficients of determination (R^2) indicate that KM through its dimensions, innovation and motivation can together explain 45.80% of the variance of financial performance ($R^2 = 0.458$), 43.60% of the variance of perceived performance ($R^2 = 0.436$) and 44.50% of the variance of product/service performance ($R^2 = 0.445$).

4.2 Testing research hypotheses

To validate the first two hypotheses and their sub-hypotheses, the direct effects between KM and the two categories of individual performance and the direct effects between KM and the three categories of organizational performance are presented in Table 1.

Regarding the link between KM and individual performance, it can be observed that, from the perspective of direct effects, both contextual performance and task performance are directly, positively, and significantly influenced by KM ($\beta = 0.347$; $p < 0.001$ and $\beta = 0.392$; $p < 0.001$). These results support hypotheses H1(a) and H1(b).

However, with respect to the direct connection between KM and organizational performance, based on the results presented in Table I, it can be found that KM directly, positively, and significantly influences only perceived performance ($\beta = 0.082$; $p < 0.05$). These results provide partial support for hypothesis H2 (sub-hypothesis H2(b) is validated).

Hypothesis	Relationship	β	SE	t	Decision
	Individual direct effects (H1)				
H1(a)	KM → ContPerf	0.347	0.044	7.857***	Supported
H1(b)	KM → TaskPerf	0.392	0.041	9.518***	Supported
	Direct organizational effects (H2)				
H2(a)	KM → FinPerf	0.042	0.042	1.013	Not supported
H2(b)	KM → PercPerf	0.082	0.038	2.123*	Supported
H2(c)	KM → ProdServPerf	0.073	0.040	1.823	Not supported

Note(s): β – Standardized path coefficient; SE – Standard error; t – t-test value; *$p < 0.05$; **$p < 0.01$; ***$p < 0.001$

Source(s): Computation of the authors with SmartPls (v3.3.3) (Ringle *et al.*, 2015), based on the survey results

Table 1. Testing for direct effects

In addition to direct effects, in both models, innovation and motivation were hypothesized to mediate the relationship between KM and individual performance and between KM and organizational performance, respectively. Table 2 shows the direct effects, the partial and indirect effects and their associated bias-corrected confidence intervals obtained through the bootstrapping procedure.

As can be observed in Table 2, regarding the mediating effect of innovation and motivation on the relationship between KM and contextual performance and KM and task performance, it can be found that both direct effects, as well as indirect ones were statistically significant, indicating a complementary mediation effect (Zhao *et al.*, 2010; Nitzl *et al.*, 2016). These results support the validation of hypotheses H3(a), H3(b), H5(a), and H5(b).

Regarding the mediating effects of innovation and motivation on the relationship between KM and organizational performance, complementary mediating effects are recorded in the relationship between KM and PercPerf, which means that both direct effects and indirect effects were significant. On the other hand, considering the mediating effect of innovation and motivation on the relationship between KM and financial performance and KM and product/service performance, the indirect effects were statistically significant, while direct effects were not, thus indicating a total mediation effect (Zhao *et al.*, 2010; Nitzl *et al.*, 2016). These results support the hypotheses H4(a)–H4(c), H6(a)–H6(c).

5. Discussion

By investigating the effects of KM on individual employee performance, proxied by task and contextual performance, the study outcomes offer support for testing hypothesis H1. In particular, the findings indicate that KM has a direct and positive effect on both the task and contextual performance of employees. These findings concur with those of other researchers' studies (Gholami *et al.*, 2013; Nana *et al.*, 2017; Akram and Hilman, 2018; Pradana *et al.*, 2021). Furthermore, the results show that KM practices have a more intense effect on task performance. This implies that if organizations can capitalize on the dimensions of KM (knowledge acquisition, knowledge sharing, knowledge storage and knowledge use) more effectively, employees will be more motivated to engage in work and complete the duties necessitated by the job, plan effectively to complete tasks in a timely manner, and exhibit better work performance which will enhance their task performance. Thus, this supports hypothesis H1(b). Conversely, if the KM process dimensions are effectively capitalized by organizations, employee contextual performance is affected, thus motivating them to have greater involvement in work such as by accepting new and difficult tasks, more duties, as well as to enhance their knowledge and abilities. Therefore, this also supports Hypothesis H1(a). The findings support those of other researchers' who contend that KM involves the availability of new knowledge that improves efficiency in performing one's task (Kianto *et al.*, 2016), plays a role in enhancing individuals' learning capacity, which is critical for completing job tasks (Papadopoulosa *et al.*, 2013), and facilitates enhanced employee performance (Mahmudi and Monavvar, 2016).

Moreover, the study findings indicate that innovation (the extent to which the organization is innovative) and motivation can mediate the relation among KM and the two individual performance categories, namely task and contextual performance, thus supporting the validation of hypotheses H3 and H5, as well as their sub-hypotheses. Nevertheless, while both motivation and innovation play a positive role in mediating the relationship between KM and individual performance, it is important to note that the study findings indicate that innovation has a greater mediating influence on the relationship between KM and contextual performance, while motivation has a more intense mediating role in the relationship between KM and task performance. Consequently, it can be observed that in cases where employees only focus on performing the tasks necessitated by their job, the

Table 2. Testing for indirect effects

Hypothesis	Relationship	β	SE	*t*–value	95% BCI 2.5 (%)	95% BCI 97.5 (%)	Type of mediation
	Mediating effects on individual performances – model 1						
	KM → ContPerf[a]	0.347	0.044	7.857***			
H3(a)	KM → INOV → ContPerf[b]	0.177	0.033	3.543***	0.056	0.184	Complementary partial mediation
H5(a)	KM → Motivation → ContPerf[b]	0.098	0.028	3.480**	0.043	0.153	Complementary partial mediation
	KM → ContPerf[c]	0.215	0.032	6.650***	0.153	0.280	
	KM → TaskPerf[a]	0.392	0.041	9.518***			
H3(b)	KM → INOV → TaskPerf[b]	0.063	0.031	2.022*	0.005	0.127	Complementary partial mediation
H5(b)	KM → Motivation → TaskPerf[b]	0.094	0.029	3.232**	0.037	0.149	Complementary partial mediation
	KM → TaskPerf[c]	0.156	0.030	5.174***	0.097	0.215	
	Mediating effects on organizational performance – model 2						
	KM → FinPerf[a]	0.042	0.042	1.013			
H4(a)	KM → INOV → FinPerf[b]	0.259	0.031	8.247***	0.199	0.322	Full mediation
H6(a)	KM → Motivation → FinPerf[b]	0.234	0.026	9.147***	0.185	0.286	Full mediation
	KM → FinPerf[c]	0.494	0.033	14.786***	0.425	0.556	
	KM → PercPerf[a]	0.082	0.038	2.123*			
H4(b)	KM → INOV → PercPerf[b]	0.156	0.030	5.208***	0.099	0.218	Complementary partial mediation
H6(b)	KM → Motivation → PercPerf[b]	0.289	0.027	10.816***	0.235	0.341	Complementary partial mediation
	KM → PercPerf[c]	0.445	0.032	14.132***	0.382	0.506	
	KM → ProdServPerf[a]	0.073	0.040	1.823			
H4(c)	KM → INOV → ProdServPerf[b]	0.227	0.030	7.484***	0.167	0.287	Full mediation
H6(c)	KM → Motivation → ProdServPerf[b]	0.238	0.026	9.255***	0.190	0.289	Full mediation
	KM → ProdServPerf[c]	0.465	0.031	14.800***	0.402	0.527	

Note(s): [a]Direct effect; [b]Partial indirect effect; [c]Total indirect effect; β – Standardized path coefficient; SE – Standard error; t – t-test value; BCI – bias corrected confidence intervals; *$p < 0.05$; **$p < 0.01$; ***$p < 0.001$

Source(s): Computation of the authors with SmartPls (v3.3.3) (Ringle *et al.*, 2015), based on the survey results

relationship between KM and task performance is mediated to a greater extent by motivation, whereas an organization's innovation capacity has reduced significance in the context of capitalizing KM and enhancing employee task performance. Conversely, the extent of innovation within an organization and the motivation of employees are more influential in terms of strengthening the KM-contextual performance relationship, thus suggesting that increased innovation within an organization and greater employee motivation allow greater capitalization of the KM process which directly enhances the contextual performance, namely supplemental employee work involvement. These findings reinforce those of other researchers that there is a close relationship between motivation and individual employee performance (Pradana *et al.*, 2021).

Existing studies (Gold *et al.*, 2001; Mills and Smith, 2011; Reisi *et al.*, 2013; Chiu and Chen, 2016; Ngah *et al.*, 2016; Kurniawati *et al.*, 2019) have proven that the connection between KM and organizational performance has been investigated for several decades. In terms of the effects of KM processes on organizational performance, the results of the current study revealed that KM has a direct and positive effect on the three organizational performance categories investigated in this research, although only perceived performance was found to be influenced to a statistically significant level, thus only providing support for sub-hypothesis H2(b). In particular, KM within organizations only directly and positively affects perceived performance, proxied by the increase in the number of employees, enhanced employee satisfaction and commitment, as well as increased employee training quality. Moreover, an organization's innovation capacity and the extent of employee motivation positively mediate the relationship between KM and perceived performance, where employee motivation is more influential on the said relationship. These aspects provide support for the validation of the sub-hypotheses H4(b) and H6(b).

The findings indicate that for financial performance, as well as product/service performance to be achieved from an organizational perspective, the simple possession of a KM process by the organization does not suffice. Nonetheless, while according to the findings reported by other researchers (Zack *et al.*, 2009), KM does not have a direct influence on financial performance, the indirect effects illustrated by this study prove that the KM-financial performance relationship is positively mediated by both motivation and innovation, where the innovation effect is more influential. Specifically, an organization's ability to leverage the KM process will be increased when its innovation capacity is higher and its employees have greater motivation, which will subsequently have a positive influence on the financial performance at the organizational level. These findings suggest that sub-hypotheses H4(a) and H6(a) can be validated and also concur with those of other researchers (Vaccaro *et al.*, 2010; Wang *et al.*, 2016) who emphasized that innovation acts as a mediator in the relationship between KM and financial performance. Similarly, although KM does not directly exert significant influence on the performance of products and services, through the degree of innovation in the organization and motivation, significant positive influences are found in the relationship between the two variables. This suggests that both motivation and innovation are capable of mediating the relationship between KM and product/service performance, thus suggesting that sub-hypotheses H4(c) and H6(c) can be validated. Among these, in comparison with innovation, the level of motivation is more influential on the aforementioned relationship. The findings reported in this study are in line with those of other researchers, indicating that organizational performance is indirectly influenced by KM processes through innovation (Lee and Sukoco, 2007; López-Nicolás and Meroño-Cerdán, 2011; Alrubaiee *et al.*, 2015; Al-Hakim and Hassan, 2016; Iqbal *et al.*, 2019). According to these outcomes, it can also be concluded that motivation plays a significant mediating role in the KM-organizational performance relationship.

Interesting findings also emerge from the analysis of the total effects of KM, innovation, and motivation on both individual and organizational performance. Therefore, by analyzing

only the direct effects of KM in organizations on individual and organizational performance, it can be found that KM influences individual performance with greater intensity. This could result from the fact that employees are critical factors in organizational knowledge creation (Lee *et al.*, 2008) and are directly involved in the creation, storage, sharing and use of information and knowledge in organizations; these KM dimensions have a significant influence on the individual performance of employees. However, considering the overall effects, the findings highlight that along with indirect effects via motivation and innovation, the influence of KM on organizational performance is greater than the one on individual performance. These findings concur with other researchers, (Braganza *et al.*, 1999; Gloet and Terziovski, 2004; Vaccaro *et al.*, 2010; Yang, 2010; López-Nicolás and Meroño-Cerdán, 2011) who identified that an increased organizational innovation capability and employee motivation enhance the KM-organizational performance relationship.

6. Conclusions

This study presented a discussion on the relationship between the KM process and individual employee performance (task and contextual performance) and organizational performance (financial, perceived, and product/service performance), as well as both the direct and indirect effects between them via motivation and innovation. The main results highlight the fact that KM directly influences individual performance to a greater extent than organizational performance. At the same time, the results reflect that indirectly, through innovation and motivation, KM positively and significantly influences both individual and organizational performance, exerting greater influence on organizational performance.

The results can benefit both researchers and organizational decision makers, and can be categorized into theoretical, practical, managerial, and methodological contributions.

From a theoretical perspective, the study findings can be used by researchers for the purpose of research expansion in areas associated with KM, individual and organizational performance, their relationships, and the factors influencing such notions and their relationships. Specifically, theoretically speaking, the current study contributes to the literature on KM as it: (1) simultaneously demonstrates how KM directly influences organizational performance, as well and the indirect effects between these variables, taking into account the mediating role of motivation and innovation in the relationship between KM and individual and organizational performance; (2) allows comparison of these effects at individual and organizational levels; (3) contributes to the stream of KM literature, highlighting the mediator role of innovation and motivation in the linkage between KM and both individual and organizational performance, and (4) advances the existing literature through analysis of the relationships between the concepts approached in the context of organizations operating in the public and private sectors of Romania.

From managerial and practical perspectives, the study provides empirical findings to decision-makers in organizations increasing their awareness of the significant contribution that the KM process makes within organizations and its effects on individual employee performance, as well as on organizational performance. Moreover, by emphasizing the indirect effects of KM on performance through innovation and motivation, organizational decision makers can identify the specific factors which require action according to the area of performance they intend to enhance. At the same time, the work can make a significant contribution within organizations by more effectively capitalizing on KM dimensions (knowledge acquisition, knowledge exchange, knowledge storage and knowledge use), employees will be more motivated to engage in work and perform their necessary tasks job, to plan effectively to fulfill them. Tasks in a timely manner and show better work performance, which will improve their task performance.

From a methodological perspective, the use of a quantitative analysis method, namely, structural equation modeling (PLS-SEM), allows all relationships between variables to be specified and tested simultaneously. This constitutes an important contribution which supports the advancement of literature.

Despite the findings and contributions of this paper, it is also necessary to acknowledge the existence of potential limitations of this study. The fact that the research adopted a cross-sectional design could represent a potential limitation. This aspect could be a constraint both in observing multiple long-term effects of each variable and in presenting causal relationships between variables. To overcome this issue, a longitudinal research design could be considered in future research. Another potential limitation could lie in the fact that only two mediating factors were considered in the examination the KM-performance relationship. A further shortcoming could be associated with the respondents' potential limitations and restrictions on offering unbiased responses. These limitations create opportunities in terms of new research directions. Thus, a possible future research direction could aim to analyze the individual effects of the four dimensions of KM (knowledge acquisition, knowledge sharing, knowledge storage, and knowledge use/utilization) on each performance category. Furthermore, future studies could investigate the mediating effect of other factors on the relationship between KM and performance, but also the link between individual performance and organizational performance.

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Appendix

The supplementary material for this article can be found online.

About the authors

Simona Cătălina Ştefan has had a Ph.D. in Management since 2017 (Summa Cum Laude) and is Professor and Ph.D. supervisor at the Faculty of Management, Bucharest University of Economic Studies. Her research activity has mainly focused on healthcare management, strategic management and SME management. Among her numerous publications, stand out: 10 books, articles published in Web of Science-indexed journals and papers presented at international conferences indexed in ISI Proceedings. In recognition of her research activity, she was awarded several national and international awards, among which the following stand out: the Romanian Academic Society of Management (RASM) Award for the best management book, the Georgescu Roengen Diploma for scientific research excellence, the RASM Award for the best doctoral thesis in the field of management, the Prize and Diploma of Excellence for Scientific Research Activity, awarded at the Excellence Gala in BUES, the "Best Book in the Economic Field" distinction awarded by the Romanian Economic Faculties Association and the best paper award at the 26th IBIMA Conference. She has also been a reviewer and Program Committee member for numerous WoS-indexed journals and ISI Proceedings conferences. In her eight years of research activity, she was involved in eight research projects on management topics, one of which was a

project leader. Simona Cătălina Ştefan is the corresponding author and can be contacted at: simona.stefan@man.ase.ro

Ion Popa, has had a Ph.D. in management since 2002 and is currently being Full Professor, Ph.D. supervisor and Dean of the management faculty within the Bucharest University of Economic Studies. In his prodigious teaching and research activity, carried out over more than 20 years, he approached and deepened a wide range of topics in the field of management, among which stand out strategic management, health services management, higher education management and SME management. As recognition of his research activity, he was awarded several national and international awards, among which the following stand out: the Georgescu Roengen Diploma for excellent scientific research, the "Best Book in the Economic Field" distinction awarded by the Association of Economics Faculties in Romania and The "Anghel Rugină" award granted by the Romanian Academy of Scientists. He participated in numerous research projects, including more than ten as project leader.

Ana Alexandra Olariu is Assistant Professor at the Faculty of Management, within the Bucharest University of Economic Studies, Romania. She holds a Ph.D. in management awarded in 2021, with Summa Cum Laude distinction. Her research topics include decisions and decision-making processes in organizations, individual and organizational performances, research methodology in management, quality management in higher education institutions and health services. She published a book entitled "Research methodology in management"; 2 book chapters in collective volumes; 11 articles in specialized journals, out of which 3 are in ISI-indexed journals, and 8 papers in volumes of international conferences, 6 of which are indexed ISI Proceedings. In recognition of her research activity, she was awarded several national prizes, among which the following stand out: (1) The Romanian Academic Society of Management Award for the Best Book in Management published in 2021 and (2) the UEFISCDI Award for research results–section articles. She is also a reviewer and member of the Program Committee for various ISI-indexed journals and ISI Proceedings conferences. Nevertheless, she was a member of some research projects that focused on the comparative analysis of organizational culture management in the public sector and on the comparative analysis of employee performance and its measurement systems in the public and private sectors and in different EU-funded projects that focused on specific areas, such as internships for students and the development of entrepreneurial skills.

Ştefan Cătălin Popa has had a Ph.D. in management since 2020, and he is Assistant Professor at the Faculty of Management, Bucharest University of Economic Studies. His research activity crystallized through the creation of a book, by publishing over 10 articles in scientific journals, of which 6 articles indexed ISI Web of Science and by publishing 9 articles in the volumes of scientific events that indexed ISI Web of Science. The research activity materialized through the development of three institutional research projects (as a member of the project team and as a project manager), but also through the participation in three research internships abroad won on the basis of competition (UEFISCDI – Executive Unit for the Financing of Higher Education, Research, Development and Innovation).

Cătălina-Florentina Popa has had a Ph.D. in Management domain since 2020 and is Assistant Professor at the Bucharest University of Economic Studies (Faculty of Management). His research activity has not only been focused on management in general but also on the effectiveness of managers' work and how it influences organizational performance. The results obtained through the research activity were disseminated through the publication of 20 articles, of which 5 in ISI Web of Science-indexed journals, 7 published in international databases (BDI) and 8 in the volumes of ISI indexed conferences, at the national and international levels. The recognition of the research activity included several awards and distinctions, among which the following stand out: (1) the UEFISCDI Award – award of research results (articles) and (2) the Excellence Award for scientific research activity. She was also a reviewer in some international conferences indexed by ISI and member of some projects that focused on specific areas, such as prevention of school dropout, internships for students and the development of the knowledge-based economy. His research activity also materialized by participating in three research internships abroad through UEFISCDI.