Journal of Infrastructure, Policy and Development 2024, 8(9), 5381.
https://doi.org/10.24294/jipd.v8i9.5381

Article

Organizational culture and knowledge management as strategies to improve the efficiency in the public organizations sector of emerging countries

César Augusto Bernal-Torres[1], Anne Marie Zwerg-Villegas[2], Loyda Lily Gómez-Santos[1,*], Germán Fracica-Naranjo[3], Josefernando Giraldo[4]

[1] International School of Economic and Administrative Sciences, Universidad de La Sabana, Cundinamarca 250008, Colombia; cesar.bernal@unisabana.edu.co
[2] Department of Management and Entrepreneurship, University of Louisville, Louisville, KY 40292, United States; annemarie.zwergvillegas@louisville.edu
[3] Independent Researcher, Bogotá 110110, Colombia; german.fracica@gmail.com
[4] Independent Researcher, Bogotá 110110, Colombia; jfg1922@gmail.com
*** Corresponding author:** Loyda Lily Gómez-Santos, loyda.gomez@unisabana.edu.co, Tel.: +57 3202574614

CITATION

Bernal-Torres CA, Zwerg-Villegas AM, Gómez-Santos LL, et al. (2024). Organizational culture and knowledge management as strategies to improve the efficiency in the public organizations sector of emerging countries. Journal of Infrastructure, Policy and Development. 8(9): 5381. https://doi.org/10.24294/jipd.v8i9.5381

ARTICLE INFO

Received: 21 March 2024
Accepted: 24 April 2024
Available online: 10 September 2024

Abstract: The purpose of this study is to provide empirical evidence about the relationship between Organizational Culture and Knowledge Management in public sector organizations in Colombia. This research is based on information obtained from a survey applied to workers in different positions and areas of four organizations in the Colombian government at the departmental level. A survey of 22 items measured Organizational Culture, and 19 items measured Knowledge Management. The results show that the strongest correlation is between a flexible organizational structure and leadership that foments the development of worker capabilities to register and use knowledge. Furthermore, to achieve efficiency the public organizations should foster adaptability to environment, a well-defined management and value-oriented human behavior and overcome barriers such as bureaucracy, inefficient administration, and make adequate knowledge management.

Keywords: organizational culture; knowledge management; public sector; emerging countries; strategy

1. Introduction

In today's dynamic landscape, marked by constant and intricate changes alongside the persistent demands of service users, organizational efficiency (OE) emerges as pivotal strategy, as acknowledged by numerous studies. To achieve OE, Knowledge Management (KM) and Organization Culture (OC) are key factors to improve organizational activity (Jabeen and Al Dari, 2020; Massaro et al., 2015).

In this regard, there are several studies conducted in private and public enterprise of OE, KM and OC relationship (Adeinat and Abdulfatah, 2019; Shamim et al., 2017). In some studies, the results show a relationship between OE, KM and OC. However, other results are inconclusive, because while the results of some studies show a positive relationship, others do not confirm it (Adeinat and Abdulfatah, 2019). The reason for the disparity in the results of the relationship between EO, KM and CO in general is that the relationship is more complex in public organizations than in private companies.

In this regard, several studies show that the main obstacles to knowledge sharing in public and private organizations are cultural and social beliefs (Adhikari and Shrestha, 2023; Aladwan et al., 2022) and the main challenges related with the adoption of KM, namely availability and use of technology, culture adaptability,

organizational structure, and leadership (Gharieb, 2021; Shaker et al., 2022). In addition, OC is a critical factor in the implementation of KM strategies in public organizations (Adeinat and Abdulfatah, 2019).

On the other hand, the main difficulties for KM in the public sector are identification of knowledge gaps, organizational change, lack of appropriate technologies, use of methods to identify organized sources of knowledge, use of collaborative methods and tools, and availability of systems that support decision making (Gharieb, 2021). In the public organizations the identification of the factors that influence knowledge sharing might help to create an OC that supports the KM (Titi Amayah, 2013).

As shown by the information presented above shows, the results of the relationship between EO, KM and OC differ in private companies compared to those in public organizations. Furthermore, these results correspond to studies conducted in companies and organizations within developed economies. However, there are no known results of this relationship in public organizations in countries with emerging economies, where the relationship between OE, KM and OC is more complex, because more effort is ultimately needed to improve social welfare (Mc Evoy et al., 2019; Vallejo, 2018).

In public organizations in emerging economies, inefficiency in service provision and a lack of a culture of readiness for change are common (Jabeen and Al Dari, 2020; Vallejo, 2018). Thus, there is an urgent need for research on the relationship between EO, KM, and CO within public entities in emerging economies. Such research is essential for gaining a deeper understanding of this correlation and providing empirical evidence to inform decision-making, thereby facilitating efficiency improvements within these organizations (Cajková et al., 2023).

In addition, it is important to note that public organizations in the context of emerging economies are often characterized by high levels of bureaucracy, low levels of governance, high dependence on political ties, scarce resources, high levels of favoritism and weak protection of civil rights (Rukh and Qadeer, 2018). This makes the change towards better organizational efficiency more complex and challenging (Cajková et al., 2023).

2. Literature review

2.1. Organizational culture

Strategic direction is a key factor to determine OC within organizations (Klein, 2011; Nowak, 2020). Likewise, OC impacts the formulation and implementation of the enterprise´s strategic direction (Botelho, 2020; Janićijević, 2012). Thus, the strategic orientation of the organization influences the conception, adoption, and modification of the systems, policies, practices, or procedures in organizations (Ravichandran and Bano, 2016).

OC influences the organization's ability to respond to changes and flexibility in the business environment for the future team direction (Bagga et al., 2023). To achieve this, leadership gives the criteria to achieve commitment and collaboration in the different members of the organization (Mayer et al., 2023; Paais and Pattiruhu, 2020; Thanh et al., 2020). Efficiency leadership creates a culture focused on the working

environment that support flexibility, employee development, teamwork, participation and sustainable competitivity (Azeem et al., 2021). Indeed, good HR practices influence company performance through the mediating linkage of employee behaviors (Naqshbandi et al., 2023a).

Therefore, the systems to measure and evaluate OC are important for any organization as they quantify the behavior of its members to understand their values and expectations (Warrick, 2017). This leads to the organizations to identify the comparative advantage of each worker, establishing working standards, organized methods, formal rules, and policies to control internal operations (Azeem et al., 2021). Studies on OC are made upon the fundamental belief that personnel development and participation of the team members lead to organizational efficiency (Mayer et al., 2023; Mardiana and Tjakratmadja, 2019). In this process, technology is crucial in promoting collaboration and communication (Abubakar et al., 2019).

Thus, technological developments influence OC because they are essential to improve organizational capabilities and discover and exploit opportunities leading to innovation (Hoof and Boell, 2019). According to Naqshbandi et al. (2023b), when employees are offered new opportunities, it builds interpersonal trust, enables collaborative communication, and fosters teamwork with other members.

OC is the set of assumptions and beliefs shared for the employees of an organization (Limaj and Bernroider, 2019 and that shape people, practices, and processes in organizations (Schein, 2004). Thus, CO is a key factor for the efficiency of organizations. In this process, according to Naqshbandi and Tabche (2018), leadership style promotes values and fosters CO with appropriate structures and systems that lead to positive outcomes and promote innovation in organizations. However, studies by Naqshbandi et al. (2015) show that organizations must also ensure that their CO is adequate before initiating innovation processes.

2.2. Knowledge management

The development of mechanisms to capture, systematize, socialize, create, and use the knowledge by the members of an organization contributes to its competitivity (Bollinger and Smith, 2001). Organizations should consider knowledge as a resource to achieve sustainable competitive advantage (Bollinger and Smith, 2001), based principally on the knowledge and experiences of their employees (Paolini et al, 2020).

According to Zhang et al. (2023) the role of knowledge management capability is mediating the relationship between open innovation and sustainable competitive advantage. Thus, leading and managing knowledge become fundamental processes in the organization (Santoro et al., 2019). In this regard, Jabeen and Al Dari (2020) remark that leadership style, intrinsic motivation, and organizational learning are important in the benefits that the KM provides to the organization. Leadership style is positively related with knowledge management (Andrej et al., 2023) and contributes to creating a culture that supports the generation, development, learning, and utilization of new ideas, which can be key to innovation (Naqshbandi et al., 2023a).

KM also presents several difficulties such as articulating individual knowledge, understanding the importance of knowledge in specific situations, and determining the owner, transmitter, and receiver of knowledge (Nonaka et al., 2000). For KM to be

effective it is required a variety of practices and techniques to identify, store, share and exploit knowledge to reach organizational goals (Almudallal et al., 2016). The capacity for KM and organizational learning has an important role in competitive advantage of organizations (Jabeen and Al Dari, 2020; Zhang, 2023). Knowledge sharing is a key driver of firm performance and innovation (Naqshbandi et al., 2023a). Organizations must therefore be proficient in managing their knowledge resources that can serve as crucial strategic resources (Naqshbandi and Jasimuddin, 2018).

KM is a field of study to generate strategies to create, transfer, and utilize the knowledge produced by research and experience (Faccin et al., 2019; Ugwu and Ejikeme, 2022). It has become a key factor for good governance, smart leadership, and a good reputation in developed countries, whereas its implementation has been weak in the emerging ones (Saif and Bin, 2020). In this context, examining organizational learning culture and knowledge sharing contributes to deepening the understanding of their interaction and impact on enhancing organizations' innovation outcomes (Naqshbandi et al., 2023a).

2.3. Organizational culture and knowledge management in the public sector

Based on knowledge of organizational culture, managers can steer their organizations towards innovation (Naqshbandi, 2015). Culture, organizational structure, and information and communication technology ICT contribute to the KM and provide infrastructures that allow organizations to develop the capacity to respond to the external changes and the demands of their stakeholders (Rafi et al., 2021). KM is directly related with improvements in organizational processes such as innovation, collaborative decision-making, and individual, group and organizational learning (King, 2009). Since the objective of KM is to encourage the creation of competitive advantage, it is necessary an OC to foment the implementation of KM (Donate and Guadamillas, 2010; Shamim et al., 2017).

Thus, the OC impacts KM, interaction, and the perceived value of the members of the organization (Chang and Lin, 2015). KM practices have strong association with organizational effectiveness and have positive impact when it is combined with an appropriate OC (Mardiana and Tjakratmadja, 2019; Shamim et al., 2017). Organizational values influence the perception of individuals about the ownership and willingness to share knowledge (Zheng et al., 2017). This may depend on the leadership style (Choudhary et al., 2017), organizational structures and their interior processes that are often less motivating to employees (Bozeman, 2000). The leadership style impacts the organization's innovation capacity (Zheng et al., 2017) as well as the activities related with KM (Matarazzo and Pearlstein, 2016; Paais and Pattiruhu, 2020) and the retention of employees who have developed knowledge over long periods of time (Millar et al., 2016). Those leaders oriented to share their knowledge and experience with their employees, dedicate time to develop employee knowledge, suggest new alternatives, and motivate employees to understand problems from different perspectives (Zia, 2020).

In fact, most of the public employees tend to believe that the exchange of knowledge causes loss of power, which in turn make it difficult to share knowledge

(Chiem, 2001). This indicates that managers of public organizations should promote a culture that foster employees to share their knowledge (Titi Amayah, 2013). In the public sector and especially in emerging markets, OC is complex due to the corruption, bureaucracy, poor governance, political influence, scarce resources, discrimination, and weak protection of civil rights (Rukh and Qadeer, 2018). In some public organizations, the resources that should be invested in productive tasks may get diverted to corrupt practices, inefficient policies, and poor administration (Ionescu et al., 2012). In fact, countries with high corruption indexes have significantly lower human capital (Ionescu et al., 2012).

CO contributes to strengthening internal organizational systems, leading to the development of resources and capabilities that foster innovation (Naqshbandi and Kamel, 2017). In most of the cases, the failure of the systems to transfer knowledge are caused by cultural factors rather than technology, therefore OC perform an important role for the success of KM (Azeem et al., 2021; Pirkkalainen and Pawlowski, 2013). Digital tools seem to be related with the quality of the organizations' knowledge management and contribute to significant improvements in the public sector (Alvarenga et al., 2020). However, the stronger the alignment among resources, key tasks, people, and culture, the more successful the organization; but more difficult the change (Rukh and Qadeer, 2018). It is important to recognize the achievements of private companies in terms of KM to do innovation, however, in the public sector regulations restrict the way KM is done and adopted to do innovation.

Public administration is influenced by the knowledge and abilities necessary to evaluate threats and opportunities; and in this process, the OC allow adopting |strategic, structural, and systematic mechanisms (Nel, 2019). Studies by Naqshbandi and Tabche (2018) show that the adoption of new technologies and the development of a favorable CO help to exploit knowledge, which plays a crucial role in improving a firm's innovative performance. Adopting new technologies and innovating, the culture influences in the general performance of public sector organizations (Jabeen and Isakovic, 2018). In fact, the information and communication technologies not only offer new tools to transmit and manage knowledge, but they also serve in the generation of new knowledge (Mora et al., 2020).

In this sense, a holistic approach about KM can help emerging countries to improve their efficacy and become knowledge societies (Zapata-Cantú, 2020). And interorganizational collaboration can lead to optimizing organizational learning (Gao et al., 2019). The relation between KM capability and organizational learning can aid in understanding how to improve and promote an OC specific to maximizing the benefits of organizational learning in function of organizational efficacy (Al Dari et al., 2020). KM contributes to organizational efficacy; and, thus, public organizations should promote an OC to support the frequent interchange of experiences and the identification, sharing, creation, and effective use of knowledge (Ononye and Igwe, 2019) and to define structures and organizational practices that permit the organization to effectively act in different contexts (Martinsons et al., 2017).

Administrative efficacy in the public organizations depends on the type of OC that foments an effective KM, in particular, the satisfaction of the needs of the users (Rukh and Qadeer, 2018). In that way, generating knowledge depends on an OC that promotes the capture, shortage, transfer, and application of knowledge within the

organizations (Chang and Lin, 2015). As aforementioned, this study is oriented to the analysis of the relationship between features of the OC and KM in public organizations to untangle how these organizations become more efficient.

The following hypothesis was formulated there is no statistically significant relationship between CO and QA in public organizations.

3. Materials and methods

Two criteria were considered for the data collection: Public organizations with formal KM programmers and workers with more than five years of activity in the respective organization. By meeting these requirements, the involvement of four (4) departmental public organizations situated in two (2) of the country's major cities was secured. The human talent directors of these organizations were briefed on the study's objective and authorized the participation of their employees. Additionally, during short 15-minute visits, the study was presented to the employees, and they were provided with the survey format for completion and subsequent submission.

Thus, out of a total of 500 people invited in the four organizations, 304 employees (from different positions and areas with more than five consecutive years working formally in their respective organization) filled in the questionnaire voluntarily and anonymously. The completion was done after several reminder visits to each of the four organizations. This is because there is very little culture of worker participation in scientific research projects.

The average age of the participants in the research was 47.9 years old, the average time associated with the organizations was 13.2 years. By gender, 59% were men and 41% women, and in terms of academic training 54% were professionals and technicians, 31% specialists and 15% hold a master's degree. According to the responsibility, 9% were managers, 17% consultants, 42% professionals and 32% technicians and assistants.

To get the information, a survey, in Likert scale 1 to 5, elaborated specifically for this study, constituting 22 items to measure OC, particularly those identified in the Kates and Galbraith (2007) model, and 19 items to measure KM based on the activities specific to this process: identify, register, share, create and use the knowledge (Almudallal et al., 2016).

Before applying the survey, it was submitted for revision by three experts (two psychologists and an economist) in KM and OC and a pilot sample of 35 servants of a departmental government organization in the city of Bogotá. With this feedback, some adjustments were made. The reliability of each scale was measured with Cronback's Alpha. For the OC items, the value is 0.926 and for the KM items, the value is 0.94.

The statistical processing of the data occurred in three phases: exploratory Principal Components Analysis (PCA), confirmatory PCA, and correlation between factorial indicators of OC an KM identified as relevant in the first two phases. PCA analyzes which items that conform a variable have the most impact on that variable (Leng and Wang, 2009). The correlation between the two variables was computed with Spearman´s Rho test, and to confirm or contrast these results, the Kendall Tau-C was used since the variables were ordinal and non-normally distributed.

In fact, with the help of the SPSS statistical package, the first factorial analysis was performed. The Kaiser-Meyer-Olkin (KMO) and Bartlett tests verified that the factorial model is an adequate statistical procedure for these variables. Variables that did not significantly contribute to the explanation of the variance were excluded from the data base. Then, then the confirmatory factor analysis was performed to identify the factors that, from an empirical perspective, fit the variables.

4. Results

4.1. Organizational culture

With the objective of identifying the features of OC that foment or impede an adequate KM, an exploratory factor analysis was performed. The results establish that Varimax is the adequate rotation for the nature of these evaluated variables. **Table 1** shows that the KMO and Bartlett tests establish that the factor analysis is an adequate model for the analysis of the sample information in this study.

Table 1. KMO and Bartlett tests of the traits and items that measure OC.

Kaiser-Meyer-Olkin (KOM) measurement of sample adequation		**0.913**
Bartlett test	Approx. Chi-squared	2745.633
	Degrees of Freedom (DF)	153
	Significance	0.000

Tables 2 and **3** show the 4 components that mainly explain the variance of the OC of the institutions that participated in this study, namely: a) the practice of human values and a clear strategic direction (component 1); b) the directive leadership (component 2); c) a flexible organizational structure and the development of personnel capacity (component 3); and d) the intraorganizational collaborative work (component 4). The set of features in OC in the analyzed entities that most explain the variance can be groups into the four principal components (eigen values greater than 1). In particular, the practice of human values and the existence of strategic direction, followed by component 2 (directive leadership).

Table 2. Total explain variance of OC by component.

Comp	**Initial values**			**Sum of square of the extraction**			**Sum of square of the rotation**		
	Total	**% Variance**	**% Cumulative**	**Total**	**% Variance**	**% Cumulative**	**Total**	**% Variance**	**% Cumulative**
1	7.601	42.230	42.230	7.601	42.230	42.230	3.393	18.848	18.848
2	2.056	11.424	53.653	2.056	11.424	53.653	3.102	17.234	36.082
3	1.109	6.163	59.816	1.109	6.163	59.816	2.989	16.607	52.689
4	1.013	5.629	65.445	1.013	5.629	65.445	2.296	12.756	65.445
5	0.774	4.302	69.747	-	-	-	-	-	-

Table 3. Traits that mainly explain the variance of OC by component.

Principal component	Relevant traits (items)	Loading factor
Human values and strategic direction	Importance of the person for the institution (item 3)	0.798
	Respectful treatment toward people (item 1)	0.794
	Existence of principles and human values (item 2)	0.781
	Presence of clear mission and vision (item 4)	0.720
Directive leadership	Coherence of directors (item 15)	0.830
	Appreciation for personal effort (item 16)	0.752
	Leadership with long-term perspective (item 14)	0.725
	Leadership of the directors (item 13)	0.557
Organizational structure and capacity development	Autonomy in decision-making (item 10)	0.762
	Trust to share information (item 9)	0.702
	Fluid communication (item 12)	0.692
	Permanent learning (item 11)	0.565
	Flexible administrative structure (item 21)	0.560
Collaborative work	Commitment of the institution with the worker and vice versa (item 8)	0.784
	Collaborative work (item 7)	0.720
	Coherence between the individual work and the institutional objectives (item 6)	0.700

4.2. Knowledge management

On the other hand, with relation to the KM, that exploratory factor analysis also confirmed Varimax rotation as adequate for the processing of the data in this variable. **Table 4** shows the results of the confirmatory factor analysis and the KMO and Bartlett tests as adequate statistics for the measurement of the variables in this study.

Table 4. KMO and Bartlett tests for the traits and items that measure KM.

Kaiser-Meyer-Olkin measurement of sample adequation		**0.913**
Bartlett test	Approx. Chi-squared	3232.547
	Degrees of Freedom (DF)	171
	Significance	0.000

Tables 5 and **6** show that the components that most explain the variance in KM in the participating entities in this study are those that relate with the register (component 1) which explains 48.29%, the identification (component 2) which explains 7.08%, and the acquisition of knowledge (component 3) which explains 5.89%. Components in those that emphasize the utilization of ICTs for registering knowledge, sharing information, fomenting the use of knowledge, teamworking, registering successes and failures, and identifying knowledge relevant to explain the results. The items utilized to evaluate the KM that most explain the changes in this variable are grouped into three components (eigen values greater than 1) which reflect 61.270% of the variation.

Table 5. Total variance of KM by component.

Comp	Initial values			Sum of square of the extraction			Sum of square of the rotation		
	Total	% Variance	% Cumulative	Total	Total	% Variance	% Cumulative	% Variance	Total
1	9.176	48.296	48.296	9.176	48.296	48.296	6.109	32.150	32.150
2	1.345	7.080	55.377	1.345	7.080	55.377	2.950	15.529	47.679
3	1.120	5.894	61.270	1.120	5.894	61.270	2.582	13.591	61.270
4	0.889	4.676	65.947	-	-	-	-	-	-

Table 6. Traits that mainly explain the variance of KM by component.

Principal component	Relevant traits (items)	Loading factor
Register and use of knowledge	Utilization of ICT to register knowledge	0.742
	Sharing of knowledge and experience	0.730
	Existence of stimuli for the use of knowledge	0.728
	Teamwork	0.722
	Register of success and failure	0.701
Identification of knowledge	Knowledge of sources of information	0.783
	Identification of relevant knowledge	0.707
	Knowledge of the needs of users	0.692
Acquisition of knowledge	Realization of trainings	0.832
	Support to attend academic events	0.798

4.3. Relation between organizational culture and knowledge management

The assessment of the relationship between OC and KM was guided by the following hypotheses:

H0: there is no statistically significant relation between OC and KM in the companies.

H1: there is a statistically significant relation between OC and KM in the companies.

The Spearman´s Rho statistical test (Corder and Foreman, 2014) was used. For its calculation, the following Equation (1) was employed:

$$r_s = 1 - \frac{6\sum_{i=1}^{n} D_i^2}{n(n^2 - 1)} \quad (1)$$

where:

r_s: Rho of Spearman;

D_i: Difference between the order statistics;

n: Size of the sample.

Table 7 shows that there is a correlation between the different principal components that conform OC and KM. These are statistically significant with $p < 0.01$, but weak amongst themselves as the coefficients are below 0.6. A higher correlation highlights the relation that is present between the need for a flexible organizational structure that seeks to develop the personnel capacity and the register and use of knowledge to improve work results on the part of the public servants. Another important relation between these two variables is precisely the relation between the

role of directive leadership as a fundamental item in the OC.

Table 7. Correlation between the principal components of OC and KM.

Principal component			Organizational culture			
			Human values and strategic direction	**Directive leadership**	**Organizational structure and capacity development**	**Collaborative work**
Knowledge management	Register and use of knowledge	Correlation coefficient	0.414**	0.682**	0.701**	0.476**
		Sig. (bilateral)	0.000	0.000	0.000	0.000
		N	291	287	290	291
	Identification of knowledge	Correlation coefficient	0.423**	0.609**	0.597**	0.500**
		Sig. (bilateral)	0.000	0.000	0.000	0.000
		N	300	296	299	300
	Acquisition of knowledge	Correlation coefficient	0.363**	0.553**	0.486**	0.478**
		Sig. (bilateral)	0.000	0.000	0.000	0.000
		N	295	291	294	295

**The correlation is significant with $p < 0.01$ (bilateral).

To confirm the results of the hypothesis test, the Kendal Tau-C since the variables were ordinal and non-normally distributed. The following is the formula for the test (Sheskin, 2020):

$$\tilde{\tau} = \frac{n_C - n_D}{\left[\frac{n(n-1)}{2}\right]} \quad (2)$$

where,

n_c = total number of matching pairs.

N_D = total number of non-matching pairs.

The denominator is the total of possible pairs range.

Confidence level $(1 - \alpha)$: 99.0%.

Table 8 presents the results of this test, which confirm those obtained with Spearman´s Rho. It is then evident that there is a weak influence of OC on the behavior of KM in these companies, and other variables should be included to gain a better understanding of this relationship.

Table 8. Correlation between the principal components of OC and KM calculated using Kendall's Tau-C coefficient.

Principal component			Organizational culture			
			Human values and strategic direction	**Directive leadership**	**Organizational structure and capacity development**	**Collaborative work**
Knowledge management	Register and use of knowledge	Kendall's tau-c	0.238	0.497	0.532	0.329
		Significance	0.001	0.000	0.000	0.000
	Identification of knowledge	Kendall's tau-c	0.133	0.488	0.418	0.262
		Significance	0.004	0.000	0.000	0.000
		Kendall's tau-c	0.171	0.35	0.352	0.291
		Significance	0.000	0.000	0.000	0.000

**The correlation is significant with $p < 0.01$ (bilateral).

5. Discussion and conclusions

Keeping in mind the hypothesis: there is no statistically significant relation between OC and KM in the public organizations, the results of this study allow us to identify that the most common features in OC of the entities in this study in their order of relevance are practices of human values, clear strategic direction, directive leadership, flexible organizational structure, development of personnel capacity, and intraorganizational collaborative work.

Based on Ertosun and Adiguzel (2018), Warrick (2017) and Molina (2009), the practice of values or principles in organizations is a key factor for the efficacious performance of all types of organizations, and this shows that people who work in the organizations that participated in this study value this features as positive to the OC. Also, the results coincide with the positions of Janićijević (2012), and Klein (2011) with relation to the importance of having clear institutional mission and vision that allows understanding of the reason for belonging to the organization and its purpose.

On the other hand, with the positions of Naqshbandi and Tabche (2018), on recognizing the leadership of the directors as a fundamental feature of the OC of the organization for the effect that this has on the institutional direction and, in particular, on the motivation and development of the employees as an indispensable factor in the improvement of institutional performance (Paais and Pattiruhu, 2020). But, of these results, it stands out that creation of knowledge is not a factor often found in these companies, which contrast with the positions of experts in the field. Reiterating the affirmations of Nonaka et al. (2000); Faccin et al. (2019) and Zia (2020), the creation of knowledge as one of the principal activities of an effective KM contribute strategically to the efficacy of the organization because of its impact on the processes of adaptation, change, and innovation. Knowledge can serve as crucial strategic resource (Naqshbandi and Jasimuddin, 2018).

It is highlighted that the presence of values and ethical principals in these entities is not readily recognized as a characteristic or principal component of the OC and its relationship with KM because in KM the values are the foundation to sharing, creating, and using the knowledge as Tamsah (2020) and Chang and Lin (2015) affirm. This form of relationship may be due to the weak relevance that these organizations give to the ideas that contribute to the improvement and innovation. Also, due to their unattractive labor conditions to develop human potential, as Rukh and Qadeer (2018) state, these frequently are influences by characteristics such as bureaucracy, poor governance, political influences, scarce resources, discrimination, favoritism, and in many cases weak protection of civil rights. The coherence in decision-making that involves people is considered important in the efficacy of the organization. But it is highlighted that, in regard to strategic direction, in these organizations there is not importance given to the diffusion of institutional objectives amongst their workers.

In terms of KM, based on the results of the work of Faccin et al. (2019) and Paolini et al. (2020), register knowledge acquires high importance because it is the result of the experience of having success or failure as a result of decisions made. Teamwork continues being a fundamental aspect which, relating this with collaborative work, demonstrates that creating a culture that foments the flow of knowledge to the interior of the organization can, retaking the position of Santoro et

al. (2019), contribute to reaching organizational objectives.

Also, the results highlight the weak relevance that these organizations give to the contribution to ideas from employees that contribute to the improvement and innovation, to the labor conditions that these offers, to the little flexibility to respond to changes in the environment. Results such as there seem to confirm the positions of Rukh and Qadeer (2018), referring to the complexity of OC in public sector organizations because these frequently are influenced by characteristics such as bureaucracy, poor governance, political influences, scarce resources, discrimination, favoritism, and weak protection of civil rights.

In the relationship between OC and KM, in these organizations there is a weak correlation between these two variables, and when there is a correlation, it is mainly between the need for flexible organizational structure and a directive leadership. The OC is an important ally or an obstacle to efficacious KM and in the administration itself. The KM contributes to the organizational efficacy through improvements in organizational processes such as innovation (Naqshbandi et al., 2023a), collaborative decision-making (Naqshbandi et al., 2023b), and individual and collective learning (King, 2009; Muhammed and Zaim, 2020). The generation of a culture of learning, obtaining, socializing, creating, and using knowledge should be a strategic priority for organizations in the public sector that have the function of promoting the well-being of people (Vallejo, 2018). Internal resources, such as organizational culture is known to determine the success or failure of innovation initiatives (Naqshbandi and Kamel, 2017). That means that the capacity of the directors to achieve KM oriented to the identification of benefits from collective knowledge helps organizations be more efficacious.

According to Chang and Lin (2015), organizations take knowledge as a resource to achieve sustainable competitive advantages. The weak correlation between the acquisition of knowledge and strategic direction confirms the need to change the OC that contributes to the benefit of KM to improve organizational efficacy; and, thus, public organizations should promote an OC that stimulates, in holistic form, the practices of identification, acquisition, sharing, creation, and use of knowledge as a strategy to contribute to the improved organizational performance.

6. Theoretical implications

From the academic perspective, the aforementioned results contribute to the reflection on the role of OC in KM in organizations of the public sector in the context of emerging economies, in which the topic has been shortly studied (Lartey et al., 2021) and brings evidence of the necessity of new studies in this field, because the outcomes still inconclusive (Adhikari and Shrestha, 2023; Shamim et al., 2017) mainly due to its complexity, because of its own and particular characteristics of the public sector organizations and much more for the countries with a high level of bureaucracy.

The study seeks to contribute to the repeated call from academics regarding the need to create their own knowledge that addresses the needs and characteristics of organizations in emerging economies, without disregarding the knowledge generated in developed economies.

7. Practical implications

From a practical point of view, the outcomes of the study bring empirical evidence, and reliable information that serve as an input for the decision-makers in public sector organisations, in relation to promoting an OC that encourages effective management. That contributes to improving the governance of these types of organisations, which require it for their users and for society, which is often faced with continuous and complex problems of different kinds (Saif and Bin, 2020).

It also provides suggestions on how knowledge management and organizational culture can be harnessed to improve the administrative efficiency of public organizations in emerging economies.

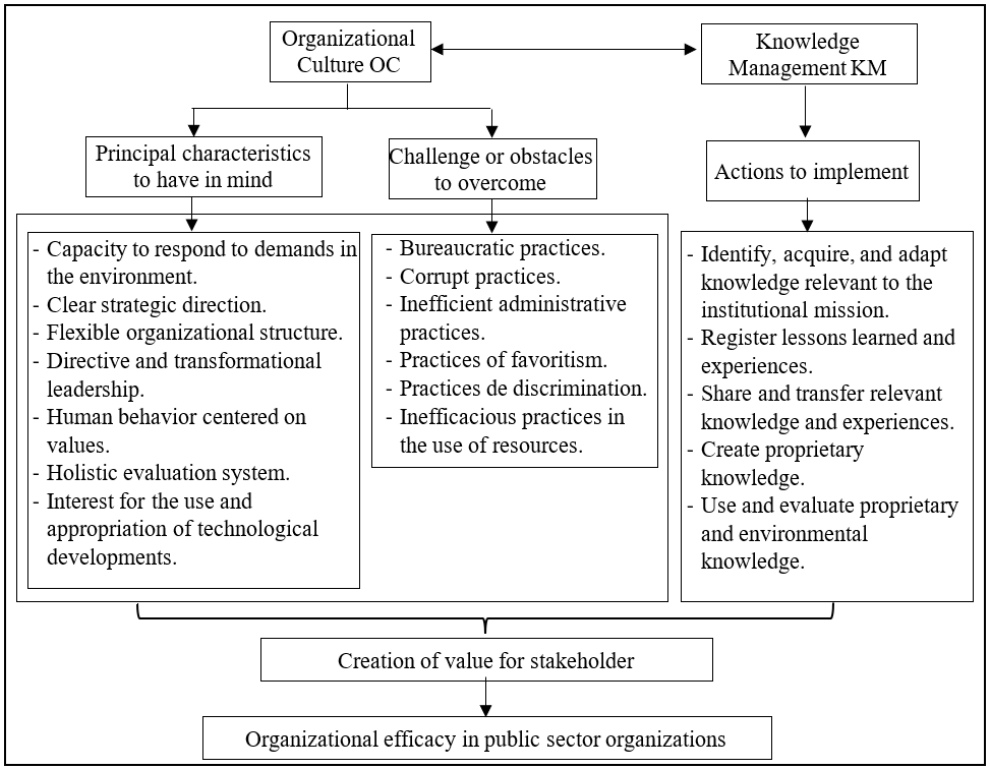

Figure 1. Relation between the characteristics of OC, KM, and organizational efficacy in the public sector.

Finally, and as part of the results of this study, **Figure 1** has been designed to synthesize the positive relationship that that organizational culture must have with KM for the effective administration of public sector organizations in emerging economies.

Author contributions: Conceptualization, CABT, AMZV and JG; methodology, CABT and LLGS; software, GFN; validation, CABT and LLGS; formal analysis, CABT and GFN; investigation, CABT and LLGS; resources, CABT and LLGS; data curation, GFN; writing—original draft preparation, LLGS; writing—review and editing, LLGS; visualization, GFN and JG; supervision, LLGS; project administration, CABT, AMZV and LLGS; funding acquisition, CABT and LLGS. All authors have read and agreed to the published version of the manuscript.

Funding: The authors received financial support from the Universidad de La Sabana

for the research, authorship, and publication of this article through the EICEA-155-2023.

Acknowledgments: We express our gratitude to the research assistant Simón Vásquez-Gutiérrez for his great support in the fieldwork of this study.

Conflict of interest: The authors declare no conflict of interest.

References

Abubakar, A. M., Elrehail, H., Alatailat, M. A., et al. (2019). Knowledge management, decision-making style and organizational performance. Journal of Innovation & Knowledge, 4(2), 104–114. https://doi.org/10.1016/j.jik.2017.07.003

Adhikari, D. R., & Shrestha, P. (2023). Knowledge management initiatives for achieving sustainable development goal 4.7: higher education institutions' stakeholder perspectives. Journal of Knowledge Management, 27(4), 1109–1139. https://doi.org/10.1108/jkm-03-2022-0172

Alvarenga, A., Matos, F., Godina, R., et al. (2020). Digital Transformation and Knowledge Management in the Public Sector. Sustainability, 12(14), 5824. https://doi.org/10.3390/su12145824

Andrej, N., Breznik, K., & Natek, S. (2023). Managing Knowledge to Improve Performance: the Impact of Leadership Style and Knowledge Management on Organizational Performance with Moderation Effects via PLS-SEM. Journal of the Knowledge Economy, 14(2), 1672–1701. https://doi.org/10.1007/s13132-022-00957-4

Adeinat, I. M., & Abdulfatah, F. H. (2019). Organizational culture and knowledge management processes: case study in a public university. VINE Journal of Information and Knowledge Management Systems, 49(1), 35–53. https://doi.org/10.1108/vjikms-05-2018-0041

Aladwan, S. A., AL-Yakoub, T. A., & Adaileh, A. M. (2022). Challenges of knowledge management in the public sector: evidence from the King Abdullah Award for Excellence in Jordan. The TQM Journal, 34(6), 1896–1913. https://doi.org/10.1108/tqm-09-2021-0253

Al Dari, T., Jabeen, F., Hussain, M., et al. (2020). How types of organizational culture and technological capabilities contribute to organizational learning. Management Research Review, 44(3), 437–459. https://doi.org/10.1108/mrr-02-2020-0090

Almudallal, A. W., Bakri, N., Muktar, S. N., et al. (2016). Implementing knowledge management in the Palestinian public sector institutions: Empirical study on the presidency of the Palestinian government. International Review of Management and Marketing, 6(4), 101-107.

Azeem, M., Ahmed, M., Haider, S., et al. (2021). Expanding competitive advantage through organizational culture, knowledge sharing and organizational innovation. Technology in Society, 66, 101635. https://doi.org/10.1016/j.techsoc.2021.101635

Bollinger, A. S., & Smith, R. D. (2001). Managing organizational knowledge as a strategic asset. Journal of Knowledge Management, 5(1), 8–18. https://doi.org/10.1108/13673270110384365

Botelho, C. (2020). The influence of organizational culture and HRM on building innovative capability. International Journal of Productivity and Performance Management, 69(7), 1373–1393. https://doi.org/10.1108/ijppm-05-2019-0228

Boyne, G. A. (2002). Public and Private Management: What's the Difference? Journal of Management Studies, 39(1), 97–122. https://doi.org/10.1111/1467-6486.00284

Bozeman, B. (2000). Bureaucracy and red Tape. In: Upper Saddle River. Prentice Hall.

Cajková, A., Jankelová, N., & Masár, D. (2023). Knowledge management as a tool for increasing the efficiency of municipality management in Slovakia. Knowledge Management Research & Practice, 21(2), 292–302. https://doi.org/10.1080/14778238.2021.1895686

Chang, C. L., & Lin, T.-C. (2015). The role of organizational culture in the knowledge management process. Journal of Knowledge Management, 19(3), 433–455. https://doi.org/10.1108/jkm-08-2014-0353

Chiem, P. X. (2001). In the public interest: government employees also need incentives to share what they know. Knowledge Management Magazine, 8.

Choudhary, N., Naqshbandi, M. M., Philip, P. J., et al. (2017). Employee job performance. Journal of Management Development, 36(8), 1087–1098. https://doi.org/10.1108/jmd-10-2016-0195

Corder, G., Foreman, D. (2014). Nonparametric statistics: A step-by-step approach. John Wiley and Sons.

Doan, T. T. T., Nguyen, L. C. T., Nguyen, T. D. N. (2020). Emotional intelligence and project success. The roles of

transformational leadership and organizational commitment. Journal of Asian Finance Economics and Business, 3(7), 223–233.

Donate, M. J., & Guadamillas, F. (2010). The effect of organizational culture on knowledge management practices and innovation. Knowledge and Process Management, 17(2), 82–94. https://doi.org/10.1002/kpm.344

Ertosun, O. G., Adiguzel, Z. (2018). Leadership, personal values, and organizational culture in Dincer. In: Hacioglu, H., Yüksel, S. (editors). Strategic Design and Innovative Thinking in Business Operations. Springer International Publishing.

Faccin, K., Balestrin, A., Volkmer, B., Bitencourt, C. (2019). Knowledge-based dynamic capabilities: A joint RandD project in the French semiconductor industry. Journal of Knowledge Management, 23(3), 439–465.

Gao, S., Yin, F., Chen, J., et al. (2019). The mechanism of inter-organizational collaboration network on innovation performance: Evidences from east coastal enterprises in China. Journal of Coastal Research, 94(1), 945–949. doi:10.2112/SI94-186.1

Gharieb, D. M. (2021). Critical Appraisal Study of Knowledge Management and its Importance Among Public Sector. International. Journal of Computer Science and Network Security, 21(7), 273–283.

Hoof, F., & Boell, S. K. (2019). Culture, technology, and process in 'media theories': Toward a shift in the understanding of media in organizational research. Organization, 26(5), 636–654. https://doi.org/10.1177/1350508419855702

Ionescu, L., Lăzăroiu, G., Iosif, G. (2012). Corruption and bureaucracy in public services. Amfiteatru Economic Journal, 14(6), 665–679.

Jabeen, F., Al Dari, T. (2020). A framework for integrating knowledge management benefits in the UAE organizations. Knowledge Management Research and Practice, 21(2).

Jabeen, F., & Isakovic, A. A. (2018). Examining the impact of organizational culture on trust and career satisfaction in the UAE public sector. Employee Relations, 40(6), 1036–1053. https://doi.org/10.1108/er-02-2017-0038

Jain, A. K., & Jeppe Jeppesen, H. (2013). Knowledge management practices in a public sector organisation: the role of leaders' cognitive styles. Journal of Knowledge Management, 17(3), 347–362. https://doi.org/10.1108/jkm-11-2012-0358

Janićijević, N. (2012). Organizational culture and strategy. Ekonomika preduzeća, 60(3-4), 127–139.

Kates, A., Galbraith, J. (2007). Designing Your Organization: Using the STAR Model to Solve 5 Critical Design Challenges. Jossey-Bass.

Kaur Bagga, S., Gera, S., & Haque, S. N. (2023). The mediating role of organizational culture: Transformational leadership and change management in virtual teams. Asia Pacific Management Review, 28(2), 120–131. https://doi.org/10.1016/j.apmrv.2022.07.003

King, W. R. (2009). Knowledge management and organizational learning. In: King, R. (editor). Knowledge Management and Organizational Learning. Springer.

King, W. R., & Marks, P. V. (2008). Motivating knowledge sharing through a knowledge management system. Omega, 36(1), 131–146. https://doi.org/10.1016/j.omega.2005.10.006

Klein, A. (2011). Corporate culture: its value as a resource for competitive advantage. Journal of Business Strategy, 32(2), 21–28. https://doi.org/10.1108/02756661111109743

Lartey, P. Y., Kong, Y., Afriyie, S. O., et al. (2021). Knowledge Management Issues in India: A Public Sector Perspective. International Journal of Public Administration, 44(3), 215–230. https://doi.org/10.1080/01900692.2019.1676778

Leng, C., & Wang, H. (2009). On General Adaptive Sparse Principal Component Analysis. Journal of Computational and Graphical Statistics, 18(1), 201–215. https://doi.org/10.1198/jcgs.2009.0012

Limaj, E., Bernroider, E. W. N. (2019). The roles of absorptive capacity and cultural balance for exploratory and exploitative innovation in SMEs. Journal of Business Research, 94, 137-153.

Mardiana, S., Tjakratmadja, J. H. (2019). Exploring the Linkage between Knowledge Management and Organizational Culture: A Study of Literature. Journal of Advanced Research in Dynamical and Control Systems, 11(3), 1003–1012.

Martinsons, M. G., Davison, R. M., & Huang, Q. (2017). Strategic knowledge management failures in small professional service firms in China. International Journal of Information Management, 37(4), 327–338. https://doi.org/10.1016/j.ijinfomgt.2017.04.003

Massaro, M., Dumay, J., & Garlatti, A. (2015). Public sector knowledge management: a structured literature review. Journal of Knowledge Management, 19(3), 530–558. https://doi.org/10.1108/jkm-11-2014-0466

Matarazzo, J. M., & Pearlstein, T. (2016). Leadership in disruptive times. IFLA Journal, 42(3), 162–178. https://doi.org/10.1177/0340035216658911

Mayer, C., Sivatheerthan, T., Mütze-Niewöhner, S., et al. (2023). Sharing leadership behaviors in virtual teams: effects of shared

leadership behaviors on team member satisfaction and productivity. Team Performance Management: An International Journal, 29(1/2), 90–112. https://doi.org/10.1108/tpm-07-2022-0054

Mc Evoy, P. J., Ragab, M. A. F., & Arisha, A. (2019). The effectiveness of knowledge management in the public sector. Knowledge Management Research & Practice, 17(1), 39–51. https://doi.org/10.1080/14778238.2018.1538670

Millar, C. C. J. M., Lockett, M., & Mahon, J. F. (2016). Guest editorial. Journal of Knowledge Management, 20(5), 845–857. https://doi.org/10.1108/jkm-07-2016-0296

Molina, A. D. (2009). Values in public administration: the role of organizational culture. International Journal of Organization Theory & Behavior, 12(2), 266–279. https://doi.org/10.1108/ijotb-12-02-2009-b007

Mora, H., Signes-Pont, M. T., Fuster-Guilló, A., et al. (2020). A collaborative working model for enhancing the learning process of science & engineering students. Computers in Human Behavior, 103, 140–150. https://doi.org/10.1016/j.chb.2019.09.008

Muhammed, S., & Zaim, H. (2020). Peer knowledge sharing and organizational performance: the role of leadership support and knowledge management success. Journal of Knowledge Management, 24(10), 2455–2489. https://doi.org/10.1108/jkm-03-2020-0227

Naqshbandi, M. M., & Jasimuddin, S. M. (2018). Knowledge-oriented leadership and open innovation: Role of knowledge management capability in France-based multinationals. International Business Review, 27(3), 701–713. https://doi.org/10.1016/j.ibusrev.2017.12.001

Naqshbandi, M. M., & Kamel, Y. (2017). Intervening role of realized absorptive capacity in organizational culture-open innovation relationship. Journal of General Management, 42(3), 5–20. https://doi.org/10.1177/0306307016687984

Naqshbandi, M. M., Kaur, S., & Ma, P. (2015). What organizational culture types enable and retard open innovation? Quality & Quantity, 49(5), 2123–2144. https://doi.org/10.1007/s11135-014-0097-5

Naqshbandi, M. M., Meeran, S., & Wilkinson, A. (2023a). On the soft side of open innovation: the role of human resource practices, organizational learning culture and knowledge sharing. R&D Management, 53(2), 279–297. https://doi.org/10.1111/radm.12566

Naqshbandi, M. M., Meeran, S., Kim, M., et al. (2023b). The role of AMO HR practices and knowledge sharing in developing a learning organizational culture: evidence from the United Kingdom. Journal of Knowledge Management, 28(4), 920–946. https://doi.org/10.1108/jkm-01-2023-0032

Naqshbandi, M. M., & Tabche, I. (2018). The interplay of leadership, absorptive capacity, and organizational learning culture in open innovation: Testing a moderated mediation model. Technological Forecasting and Social Change, 133, 156–167. https://doi.org/10.1016/j.techfore.2018.03.017

Nel, D. (2019). Risk management in the South African local government and its impact on service delivery. International Journal of Management Practice, 12(1), 60. https://doi.org/10.1504/ijmp.2019.096683

Nowak, R. (2020). Does employee understanding of strategic objectives matter? Effects on culture and performance. Journal of Strategy and Management, 13(4), 477–493. https://doi.org/10.1108/jsma-02-2020-0027

Nonaka, I., Toyama, R., Konno, N. (2000). SECI, BA and leadership: A unified model of dynamic knowledge creation. Long Range Planning, 33, 4-34. https://doi.org/10.1016/S0024-6301(99)00115-6

Ononye, U. H., Igwe, A. (2019). Knowledge Sharing Process and Innovation Success: Evidence from Public Organisations in Southern Nigeria. Interdisciplinary Journal of Information, Knowledge, and Management, 14, 183–198. https://doi.org/10.28945/4358

Paais, M., Pattiruhu, J. (2020). Effect of Motivation, Leadership, and Organizational Culture on Satisfaction and Employee Performance. The Journal of Asian Finance, Economics and Business, 7(8), 577–588. https://doi.org/10.13106/jafeb.2020.vol7.no8.577

Paoloni, M., Coluccia, D., Fontana, S., et al. (2020). Knowledge management, intellectual capital and entrepreneurship: a structured literature review. Journal of Knowledge Management, 24(8), 1797–1818. https://doi.org/10.1108/jkm-01-2020-0052

Pirkkalainen, H., Pawlowski, J. (2013). Global social knowledge management: from barriers to the selection of social tools. Electronic Journal of Knowledge Management, 11(1), 3–17.

Rafi, N., Ahmed, A., Shafique, I., et al. (2021). Knowledge management capabilities and organizational agility as liaisons of business performance. South Asian Journal of Business Studies, 11(4), 397–417. https://doi.org/10.1108/sajbs-05-2020-0145

Ravichandran, N., Bano, R. (2016). A review of antecedents, correlates and consequences of HR practices: a conceptual model of organizational development. Journal of Organizational Behavior, 15(4), 76-127

Rukh, H., Qadeer, F. (2018). Diagnosing culture of public organization utilizing competing values framework: A mixed methods approach. Pakistan Journal of Commerce and Social Sciences, 1(12), 398–418.

Saif, M. R., & Yeop, N. K. B. (2020). The Effect of Organizational Culture on Knowledge Management and Managerial Performance of Government Department in Dubai. European Journal of Multidisciplinary Studies, 5(1), 47. https://doi.org/10.26417/915bag69u

Santoro, G., Thrassou, A., Bresciani, S., et al. (2021). Do Knowledge Management and Dynamic Capabilities Affect Ambidextrous Entrepreneurial Intensity and Firms' Performance? IEEE Transactions on Engineering Management, 68(2), 378–386. https://doi.org/10.1109/tem.2019.2907874

Schein, E. H. (2004). Sense and Nonsense about Culture and Climate. Massachusetts Institute of Technology.

Schein, E. H. (2004), Organizational Culture and Leadership, 3rd ed. John Wiley and Sons.

Shamim, S., Cang, S., & Yu, H. (2017). Impact of knowledge oriented leadership on knowledge management behaviour through employee work attitudes. The International Journal of Human Resource Management, 30(16), 2387–2417. https://doi.org/10.1080/09585192.2017.1323772

Sheskin, D. J. (2020). Spearman's Rank-Order Correlation Coefficient (Nonparametric Measure of Association/Correlation Employed with Ordinal Data). In: Handbook of Parametric and Nonparametric Statistical Procedures. Chapman and Hall/CRC. https://doi.org/10.1201/9780429186196-39

Tamsah, H., S.E, A., Ilyas, G., et al. (2020). Training, Knowledge Sharing, and Quality of Work-Life on Civil Servants Performance in Indonesia. Journal of Ethnic and Cultural Studies, 163–176. https://doi.org/10.29333/ejecs/514

Titi Amayah, A. (2013). Determinants of knowledge sharing in a public sector organization. Journal of Knowledge Management, 17(3), 454–471. https://doi.org/10.1108/jkm-11-2012-0369

Ugwu, C. I., & Ejikeme, A. (2022). Knowledge management, organizational culture and job performance in Nigerian university libraries. IFLA Journal, 49(1), 99–116. https://doi.org/10.1177/03400352221103896

Vallejo, C. (2018). Organizational learning and knowledge management (Spanish). Departamento Administrativo de la Función Pública.

Warrick, D. D. (2017). What leaders need to know about organizational culture. Business Horizons, 60(3), 395–404. https://doi.org/10.1016/j.bushor.2017.01.011

Zapata-Cantu, L. (2020). Boosting innovation in emerging markets: the moderating role of human capital. International Journal of Emerging Markets, 16(3), 604–624. https://doi.org/10.1108/ijoem-01-2019-0015

Zhang, X., Chu, Z., Ren, L., et al. (2023). Open innovation and sustainable competitive advantage: The role of organizational learning. Technological Forecasting and Social Change, 186, 122114. https://doi.org/10.1016/j.techfore.2022.122114

Zheng, J., Wu, G., & Xie, H. (2017). Impacts of Leadership on Project-Based Organizational Innovation Performance: The Mediator of Knowledge Sharing and Moderator of Social Capital. Sustainability, 9(10), 1893. https://doi.org/10.3390/su9101893

Zia, N. U. (2020). Knowledge-oriented leadership, knowledge management behaviour and innovation performance in project-based SMEs. The moderating role of goal orientations. Journal of Knowledge Management, 24(8), 1819–1839. https://doi.org/10.1108/jkm-02-2020-0127