

(01-016) - Current trends in project management: an analysis of the evolution and significance of knowledge management

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Knowledge Management (KM) is becoming increasingly important in organisations due to its ability to facilitate informed decision-making, reduce risk, enable continuous improvement, and optimise resources. This provides a competitive advantage in a business environment characterised by uncertainty and post-pandemic technological acceleration. The aim of this study is to investigate the importance of Knowledge Management in modern projects, taking into account global trends and technological advancements. The study focuses on exploring the development of this concept, examining the prevalent tools and methodologies, and assessing the impact of the pandemic on the digital transformation of companies and project management. To achieve this, a mixed qualitative and quantitative methodology was adopted, including a literature review and a survey of professionals in the sector. The results indicate a significant evolution of Knowledge Management, from a theoretical concept to a determining factor in the effective management of projects. This highlights its role in strengthening competitiveness and innovation in organisations. In conclusion, Knowledge Management is considered an essential strategic resource in the business landscape.

Keywords: Knowledge Management; project management; project manager; learning; competitive edge

Tendencias actuales en gestión de proyectos: análisis de la evolución y trascendencia de la gestión de conocimiento

La Gestión del Conocimiento (Knowledge Management en inglés) ha ido ganando fuerza en las organizaciones debido a razones clave como la toma de decisiones informada, la reducción del riesgo, la mejora continua o la optimización de recursos, entre otras, permitiendo obtener ventajas competitivas en un entorno empresarial caracterizado por la incertidumbre y la aceleración tecnológica pospandemia. El propósito de este estudio es analizar la trascendencia de la Gestión del Conocimiento en el marco de las organizaciones considerando tanto las dinámicas globales como los progresos tecnológicos, desentrañar la evolución de este concepto y evaluar el impacto de la pandemia en la transformación digital de las empresas y la gestión de los proyectos. Para ello, se adopta una metodología mixta, cualitativa y cuantitativa, a través de una revisión bibliográfica y una encuesta dirigida a profesionales del sector. Los resultados evidencian una evolución significativa de la Gestión del Conocimiento, evolucionando de un concepto teórico hasta convertirse en un factor determinante en la gestión eficaz de los proyectos, y resaltando su rol en el fortalecimiento de la competitividad e innovación en las organizaciones. En conclusión, se destaca la Gestión del Conocimiento como un recurso estratégico indispensable en el panorama empresarial.

Palabras clave: Gestión del Conocimiento; gestión de proyectos; director de proyectos; aprendizaje; ventaja competitiva

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1. Introduction

The definition of knowledge management has evolved from the traditional literature, establishing differences, as it implies a process of dynamic character and a management of learning processes, emphasizes the role of idiosyncratic knowledge, uses the problem-solving approach and marks sustainable competitive advantage as a goal (Baiget, 2016). Similarly, a more holistic definition can be found in the *Dictionary of Accounting Terms*, which describes knowledge management as the process of connecting people to each other and people to information to create competitive advantage. From this, several perspectives of knowledge management can be broken down, such as its use as a process, as a tool, as a strategy or for the creation of a community (Ritchie and Jorgensen, 2007).

In recent years, the competitive landscape for companies has changed drastically due to aspects such as globalization, deregulation and technological progress. This has caused traditional sources of competitive advantages (such as privileged access to raw materials, access to protected markets, technology and physical assets), to become less important, as a level playing field and opportunities in open markets have been facilitated (Baiget, 2016).

Drucker (1999) points out that, while in the 20th century organizations focused their management on increasing the productivity of manual labor in industry, in the 21st century, the challenge for companies is that their management should contribute to increasing the productivity of knowledge-based labor. Drucker argues that, since the 1990s, we have entered a new era of social transformation in which the key source of resources is knowledge, displacing manual labor, raw materials and capital. In his article "*The Age of Social Transformation*" (1994) he points out that, management, being the distinctive organ of all organizations, is not in essence a set of techniques and procedures but making knowledge productive.

Knowledge management is emerging as a fundamental piece of the strategy of companies (Ajmal et al., 2010), so that the commitment to effective knowledge management is considered a powerful means to establish and maintain a competitive advantage. To achieve this, it will be necessary to encourage and motivate the project team, as well as to provide them with tools and information systems that facilitate the distribution and management of knowledge among all participants. This study establishes six critical factors (Figure 1) for the success of knowledge management initiatives:

Figure 1. Critical success factors of knowledge management. Source: own elaboration, 2024.



In addition, projects can be complex due to factors such as: people's behavior, interdependence between project elements, ambiguity, uncertainty or technological innovation. Complexity can appear and affect the project in any area and at any time during its life cycle (PMI, 2021). This complexity makes it necessary to implement solutions that favor innovation and continuous improvement of the processes carried out during a project. One of the possible tools available to organizations is knowledge management.

Due to the crisis originated by the COVID-19 pandemic, a section dedicated to it has been included in this research. This is due to its importance in the current scenario, the high degree of socioeconomic impact it has produced, the level of affectation it has had on the development of activity in organizations and the prominent role played by knowledge management during the crisis.

The World Bank (2021), through a survey of 60 countries, estimates that, at the onset of the pandemic, a quarter of companies reduced their sales by 50%, 65% of organizations had to reduce salaries, working hours and leave, only a minority adopted digital solutions and the allocation of public resources was inefficient.

Despite the clear overall negative nature of the COVID-19 crisis, specifically with respect to the business world there have been mainly negative, but also positive consequences. According to the Kantar (2021) study "*Global Business Compass*", although 84% of Spanish companies expected a negative impact of the pandemic, 25% also believed that there would be a positive impact in terms of organizational changes for improved adaptation and greater attention to new technologies and e-commerce.

It can be assumed that knowledge management is also one of the main strategic tools to fight the effects of the pandemic and to adapt to the post-pandemic "new normal".

In view of the above, the main objective of this research is to analyze the importance of knowledge management in projects developed in the current context of globalization,

technological development, uncertainty and change of post-pandemic values, as a means to obtain a competitive advantage.

2. State of the art

To achieve this objective, the first step is an analysis of the existing literature on three critical points: seminal articles, "new" contributions and those related to the COVID-19 pandemic.

2.1 Seminal articles

The term "knowledge" can be broken down into three fundamental attributes according to Baiget (2016). First, knowledge is inherent to the person, emerging as a result of his or her experience and context. Second, it is not exhausted with its use; on the contrary, it can be reapplied, allowing the person to process and reevaluate perceptions in order to assimilate them as new knowledge. Third, knowledge guides individual actions, thus facilitating decision making.

This analysis reveals that knowledge management offers a crucial opportunity for organizations interested in strengthening their competitiveness and creating added value. This perspective has captured the interest of practitioners and academics in Spain since the 1990s (Barrasa et al., 2002). In this line, Muñoz-Seca and Riverola (1997) have contributed by publishing a work that defines knowledge as the ability to solve problems effectively, where the 'problem' is conceived as the unsatisfactory perception of an environment by those affected, whether individuals or business groups.

Additionally, the notion of tacit and explicit knowledge, introduced by Michael Polanyi in the 1960s and deepened in "The Tacit Dimension" (1966), underlines that we know more than we can verbalize. This indicates that communication is never completely effective in transmitting knowledge, suggesting the importance of learning methods based on imitation and direct experience within a social context.

This interplay between quality management and knowledge management underscores how organizations can use structured strategies to not only meet quality standards but also to advance innovation and maintain a competitive advantage in volatile and technologically advanced markets.

The authors from Poland to Baiget who have contributed significantly to the field of knowledge, addressing from basic features to specific methods for its management and application in organizations, are presented in table format below (Table 1).

Table 1: Seminal articles ordered by year of publication. Source: own elaboration, 2024.

Author	Year	Subject	Main contribution
Polany	1966	Knowledge	Definition of tacit knowledge
Deming	1986	Organizational knowledge	PDCA (Plan, Do, Check, Act) cycle as a learning and knowledge generator
Nonaka	1994	Organizational knowledge	Four conversion models for the creation of new knowledge
Nonaka and Takeuchi	1995	Organizational knowledge	Knowledge creation for competitive advantage
Muñoz-Seca and Riverola	1997	Knowledge	Knowledge in business context
Bueno	1999	Knowledge management	Knowledge management as knowledge flow management

Alavi and Leidner	2001	Knowledge management	Four knowledge management processes
Barrasa et al.	2002	Knowledge management	Start of interest in knowledge management
Grant	2007	Knowledge management	Tacit knowledge as a basis for subsequent knowledge management
Cabarcos and Gottling	2010	Knowledge management	Importance, but little interest in knowledge management
Donate and Sánchez	2015	Knowledge management	Process conditions of knowledge management
Baiget	2016	Knowledge	Basic features of knowledge

2.2 “New” contributions to the field

Sadeghi and Mostafavi (2018) highlight how effective management of modern organizations has transformed into an art centered on knowledge management, emphasizing that a leader in this context not only manages people, but also manages and fosters knowledge creation. This approach underlines that effective leadership in knowledge management is crucial for success and performance improvement at all levels of the organization. In this framework, knowledge-based leadership becomes a fundamental pillar for integrating and leveraging the potential of knowledge in continuous improvement.

Idobro et al. (2018) elaborate on the concept by applying it specifically to project-based management, highlighting that effective knowledge management can significantly improve project execution. They highlight the importance of not viewing projects as isolated and temporary activities, but as continuous opportunities to learn and avoid repeating mistakes. Therefore, the integration of knowledge management into project processes becomes indispensable, not only to add value but also to maintain the organization's relevance and competitiveness.

In relation to the evolution of business practices towards Industry 4.0, the importance of knowledge management in strategic decision making and organizational innovation is emphasized. Authors such as Abubakar et al. (2019) and Tortorella et al. (2020) suggest that the adoption of advanced technologies and a systematic approach towards learning and knowledge transfer can significantly improve operational performance and provide lasting competitive advantages. Thus, a strategic approach to knowledge management not only strengthens the adaptive capacity and growth of organizations, but also facilitates a culture of innovation and continuous change.

An updated and chronologically ordered overview of the most significant contributions in the field of knowledge and its management from 2017 to 2023 is presented. It includes studies such as lessons learned, knowledge management, leadership in learning organizations contexts, and the importance of soft skills in project management, especially in the context of Industry 4.0 (Table 2).

Table 2: “New” contributions to the field ordered by year of publication. Source: own elaboration, 2024.

Author	Year	Subject	Main contribution
Comino	2017	Lessons learned	Lessons learned are critical for continuous improvement

Darfeuille	2017	Lessons learned	Fundamental nature of lessons learned, shortcomings in their management
Comino	2018	Lessons learned	Knowledge is not properly recorded and shared
Sadeghi and Mostafavi	2018	Leadership	Knowledge management leadership
Idobro et al.	2018	Project management	Knowledge management as an enhancement of project management
Flórez	2018	Knowledge flow	Main tools
Morán y Radames	2018	Knowledge management implementation	Main elements
Naqshbandi and Tabche	2018	Learning	Leader promotes learning
Para et al.	2018	Leadership	Transformational leadership helps the development of new knowledge and competencies
Abubakar et al.	2019	Industry 4.0	Knowledge creation as performance enhancement
Saks	2019	Learning	Learning as worker motivation
Alvarenga et al.	2019	Project manager skills	Increasing importance of soft skills
Englund and Bucero	2019	Project manager skills	The perfect Project Manager
Tortorella et al.	2020	Industry 4.0	Learning and knowledge transfer as performance improvement
Iriarte and Bayona	2020	Project manager skills	Soft skills as a critical factor
Tian	2020	Project manager skills	Key soft skills
Lutas et al.	2020	Project manager skills	Importance of technical skills in recruitment
Gómez et al.	2020	Organizational learning	Positive correlation between learning and business performance
Colina and Albites	2020	Organizational learning	Learning-based organizational culture
González et al.	2021	Knowledge management	Competitive advantages depend on the use of knowledge
Ribeiro et al.	2021	Industry 4.0	The need to combine hard and soft skills
Pájaro-Rocha	2022	Knowledge management	Knowledge management as a tool of change
Idrees et al.	2023	Knowledge management	Benefits of knowledge management in SMEs

2.3 COVID-19 Pandemic

The COVID-19 pandemic has catalyzed profound and urgent transformations in society and organizations, highlighting the crucial importance of knowledge management as an essential strategic resource for dealing with crises of such magnitude. Ammirato et al. (2021) highlight that, despite little previous research in pandemic contexts, knowledge emerges as a vital tool for crisis management, underscoring the need to develop robust knowledge management methods during events as disruptive as COVID-19.

Nyoni and Kaushal (2022) elaborate on this idea, arguing that effective knowledge management can significantly mitigate the impacts of the pandemic. They identify that the quality of leadership, a corporate culture focused on valuing knowledge as a core asset, and a robust technology infrastructure are determinants of sustainable knowledge management that not only helps to manage the current crisis but also to prepare the organization for future challenges. This vision is supported by the relevance assigned to information and communication technology, which becomes a pillar for knowledge management in times of crisis.

On the other hand, Muñoz-Villalba (2021) and other studies indicate that project management methodologies can be valuable tools in managing crises such as pandemics, treating pandemic management as a project in itself and learning from mistakes made to improve in the future. This approach not only addresses the immediate crisis, but also provides a structure for continuous learning and improvement, highlighting the importance of adapting and applying lessons learned in managing future crises. This integrated approach between knowledge management and project management underscores the need for a holistic and proactive strategy to address significant global challenges.

Therefore, a summary of recent studies (Table 3) that have investigated how effective knowledge management can act as a strategic resource for dealing with pandemic crises is presented.

Table 3: COVID-19 Pandemic ordered by year of publication. Source: own elaboration, 2024.

Author	Year	Subject	Main contribution
Vázquez and Romero	2020	COVID-19 Pandemic	Knowledge management as an enabler of digital transformation
Ammirato et al.	2021	COVID-19 Pandemic	Knowledge as a strategic resource against pandemics
Muñoz-Villalba	2021	COVID-19 Pandemic	Importance of lessons learned to avoid making the same mistakes as during the pandemic.
Ogonnusi et al.	2021	COVID-19 Pandemic	Positive and negative effects of the pandemic on businesses
Nyoni and Kaushal	2022	COVID-19 Pandemic	Effectiveness of knowledge management mitigates pandemic effects
Lopes	2022	COVID-19 Pandemic	Relationship between knowledge management and organizational performance

3. Method

The research work focuses on a comprehensive literature review complemented by an empirical investigation on how knowledge management influences as a competitive advantage in project management. This study encompasses an analysis of current and relevant scientific literature that examines the strategic role of knowledge management in organizations,

especially in challenging contexts marked by the COVID-19 pandemic. Depth is added to the study by means of a questionnaire addressed to professionals in the sector, which allows for a collection of primary data that enriches the findings and conclusions of the documentary analysis.

Adopting a mixed methodological approach, the study combines quantitative and qualitative techniques to obtain a more complete and validated understanding of the topics investigated. According to [Ugalde and Balbastre \(2013\)](#), this mixed methodology facilitates greater verification of theories and a deeper understanding of the phenomena studied, helping to overcome the limitations that each approach might have on its own. [Lee and Lings \(2008\)](#) suggest different ways to implement this mixed methodology, including the use of qualitative studies followed by quantitative ones to confirm findings, or vice versa, to clarify unexpected results or perform triangulations to ensure the accuracy of the information collected.

The qualitative part of the study is based on a literature review covering from the historical evolution of knowledge management to its recent impact during the pandemic, following the methodology proposed by [Codina \(2020\)](#) and [Martinez \(2016\)](#) to ensure rigor and relevance. The reviewed articles are divided into seminal and recent studies, providing a theoretical and practical framework that reflects the contemporary relevance of knowledge management in project management. In parallel, the quantitative methodology comprises a standardized questionnaire distributed through digital platforms to a representative sample of professionals, whose results are expected to provide practical and current perspectives on the application of knowledge management in real-life projects.

4. Results

4.1 Questionnaire

This questionnaire focused on collecting data on knowledge management, using 16 questions that covered the objectives of the study. Respondents had the option to answer dichotomously or by selecting from multiple options.

Regarding the importance of knowledge management, all participants affirmed its relevance in projects. In addition, 71.4% considered that it contributes to competitive advantages in their companies.

Regarding the recording of knowledge, 65.7% indicated that their companies keep updated records that store key information of the knowledge generated, which is done in two thirds of the companies represented. Of these, 69.2% actively participate in updating these records.

More than 70% of respondents use knowledge management tools in their daily work, with databases and document repositories being the most common. However, 29.4% do not use these tools, due to lack of need or availability.

In terms of project manager skills, leadership was rated as the most important skill, followed by the ability to work in a team and effective communication. Negotiation was considered less critical.

Participants also agreed that soft skills and technical skills are equally important in project management, with 85.7% agreeing on this point.

The most influential factors in knowledge transfer were found to be effective communication and a collaborative environment, rather than direct leadership or continuous motivation.

In addition, 97.1% of respondents recognized that environmental factors such as corporate culture and market conditions significantly influence knowledge management in organizations.

The COVID-19 pandemic was included in the study, revealing divided opinions: 47.1% saw a positive influence on project management, while 52.9% did not notice such an impact.

As for lessons learned, 94.3% of respondents believed that these significantly increase the probability of project success, highlighting their importance in knowledge management.

Finally, on learning, all participants agreed that it varies according to individual characteristics. However, opinions were divided on whether hierarchical position, academic background or motivation/reward influence how people learn, showing a diversity of perspectives on these factors.

4.2 Literature review

The literature review of the study focuses on evaluating the significant contributions in the literature on knowledge management, comparing perspectives and prominent trends. This analysis serves to understand the various interpretations and applications of knowledge within the business context, especially in project management and its impact on competitive advantage.

4.2.1 Seminal Articles

The concept of tacit knowledge, introduced by Polanyi in 1966 and further developed by other theorists such as Grant in 2007, emphasizes that certain aspects of knowledge are intrinsically personal and difficult to communicate through conventional language. This type of knowledge is acquired primarily through direct experience, observation and imitation within a particular context. This understanding leads to the notion that knowledge is not only stored or transferred, but also created and constantly evolving through social and professional interactions.

Nonaka extended this framework in 1994 by differentiating between tacit and explicit knowledge, arguing that conversion between these two types through processes of socialization, combination, internalization and externalization can generate new knowledge. This theory underlines how knowledge becomes a dynamic resource within organizations, contributing to effective decision making and problem solving. Since the 1990s, knowledge management began to be recognized as a crucial tool for improving business competitiveness and innovation, driving continuous improvement and quality strategies.

Despite its potential to offer competitive advantages, the adoption of knowledge management in organizations has been mixed, with some business leaders still reluctant to fully integrate it into their operations. Knowledge management processes, which include the creation, storage, retrieval and application of knowledge, are highly dependent on the type of leadership and organizational culture. These processes have become critical for companies to remain relevant and able to innovate in an increasingly complex and changing business environment.

4.2.2 New contributions

Once the analysis of the works and authors referenced as seminal in the subject matter of this research has been carried out, we proceed with the results obtained from the bibliographic review of recent articles that have been chosen for their relevance to the subject matter in question.

In an increasingly complex and competitive world and with a globalized market where uncertainty and continuous changes have become protagonists, organizations have been forced to evolve in order to adapt and achieve success or survival.

In this evolution, the idea has been established that the empowerment of knowledge management increases efficiency in project execution, process effectiveness and innovation in organizations (Idobro et al., 2018; Idrees et al., 2023). Based on this, knowledge

management is a critical means for achieving competitive advantage (González et al., 2021; Pájaro-Rocha, 2022).

In any case, knowledge management must be properly executed and must have an enabling environment for its development within the organization through a knowledge-oriented leader (Sadeghi and Mostafavi, 2018), integration with other project processes (Idobro et al., 2018) and an organizational culture, strategy and structure that promotes the use of knowledge and change (Idobro et al., 2018; González et al., 2021, Pájaro-Rocha, 2022).

Despite the advantages of proper knowledge management, organizations do not end up implementing and applying it optimally (Idobro et al., 2018; González et al. 2021: Morán and Radames, 2018).

The advance of technology has led to the emergence of new tools that simplify and facilitate knowledge management, such as ICTs. Tools such as databases, corporate guides and document repositories have been joined by the Internet, intranets, social networks, e-learning platforms, cyber-applications, specialized programs and collaborative work platforms (Flórez, 2018; Morán and Radames, 2018).

One of the key concepts of technological development applied to organizations is Industry 4.0. The company applying these technologies, having them at the core of their processes, must be aware of the importance of learning and knowledge transfer to improve their organizational performance (Abubakar et al., 2019; Tortorella et al., 2020).

Regarding learning, organizations that encourage and foster it obtain better performance (Tortorella et al., 2020; Gómez et al., 2020), a strengthening of employee engagement (Saks, 2019), a motivating leadership of workers (Naqshbandi and Tabche, 2018) and a different perception of human talent to face the changes of today's world (Colina and Albites, 2020).

One of the main roles in organizations is that of the leader. In the case of projects this role belongs to the project manager. A leadership that can help develop skills to achieve competitive advantages (Para et al. 2018), integrate internal and external efforts to successfully execute projects by managing not only employees, but also knowledge and procuring the ideal conditions for exchange and creativity (Sadeghi and Mostafavi, 2018; Naqshbandi and Tabche, 2018).

The project manager has had to develop his or her capabilities and skills to adapt to today's complex market. Technical or hard skills have usually been considered as the fundamental ones, as evidenced by the fact that they are the most valued at the time of hiring the professional (Lutas et al., 2020). However, in recent years, there has been a growing trend of valuing soft or interpersonal skills, putting them on the same level as hard skills (Alvarenga et al., 2020; Iriarte and Bayona, 2020; Tian, 2020; Ribeiro et al., 2021; Englund and Bucero, 2019).

Among the most prominent soft skills, according to each author, are:

- Leadership, communication and commitment (Alvarenga et al., 2020).
- Commitment, communication and team support (Iriarte and Bayona, 2020).
- Leadership, communication and creativity (Tian, 2020).
- Communication, leadership, teamwork, rapid decision making and negotiation (Ribeiro et al., 2021).

Leadership, negotiation, people skills, conflict resolution, humor and adapting to change, effective communication with all members of the organization and the environment (Englund and Bucero, 2019).

The last topic addressed in the literature review is lessons learned. Both Dafeuille (2017) and Comino (2018) consider them as a fundamental factor for knowledge management and

organizations. Despite this, they emphasize that they are a process that is not properly standardized or regulated, so that organizations often do not take advantage of the opportunities or advantages that they could provide if they were given greater importance to their management.

4.2.3 COVID-19 Pandemic

The last block of the literature review dealt with the impact of the COVID-19 pandemic on organizations. The aim was to analyze the degree to which they were affected, the positive and negative consequences and how, in the context of a global pandemic, knowledge management may have become an effective tool to mitigate the harmful effects of a crisis that erupted abruptly and suddenly.

During the COVID-19 pandemic, knowledge has been a strategic resource, a means to find solutions, limit the impact and seek a return to normalcy (Ammirato et al., 2021; Nyoni and Kaushal, 2022).

Effective knowledge management was configured as a key element for organizations in managing the crisis and responding to the challenges presented by the pandemic (Ammirato et al., 2021; Nyoni and Kaushal, 2022; Muñoz-Villalba, 2021; Lopes, 2022; Vázquez and Romero, 2020).

It is worth highlighting the critical role that an optimal application of project management methodologies can play in the management of this type of crisis (Muñoz-Villalba, 2021). Thus, decisive leadership and effective communication can become a fundamental resource (Muñoz-Villalba, 2021; Nyoni and Kaushal, 2022). Similarly, the importance of learning and recording lessons learned (e.g., in terms of logistics management, risk management or the relevance of technology and human resources) is highlighted in order to be prepared for the unexpected occurrence of possible situations of similar severity in the future (Muñoz-Villalba, 2021; Ogunnusi et al., 2021).

In terms of consequences, the pandemic has had negative effects on companies such as loss of sales, reduction of salaries and schedules, cutbacks in expenses, cancellation of planned investments and mandatory organizational changes (Kantar, 2021; The World Bank, 2021), loss of jobs, decrease in profits and delay in deliverables (Ogunnusi et al., 2021). But also positive effects such as increased investment in technology, accelerated digital transformation (Vazquez and Romero, 2020), promotion of adaptation to change (Kantar, 2021), reduction in costs, teleworking, sustainable target setting (Ogunnusi et al., 2021) and an increased awareness of the importance of knowledge management and lessons learned in projects and companies as a strategic element, improvement and as a source of competitive advantage (Ammirato et al., 2020; Nyoni and Kaushal, 2022; Muñoz-Villalba, 2021; Lopes, 2022; Vázquez and Romero, 2020, Ogunnusi et al., 2021).

5. Conclusions

The main objective of the research was to analyze how, in a convulsive, globalized, extremely competitive business market, characterized by uncertainty and marked by an exponentially evolving technology and by a COVID-19 pandemic that paralyzed the world, knowledge management has been growing in importance in the projects developed by organizations, becoming a means to achieve a lasting competitive advantage over time.

Nowadays, organizations are in a continuous struggle to survive among their competitors and to achieve business success. They need to continuously adapt to the constant changes and to do so, they seek to obtain the maximum performance from their tangible and intangible resources to optimize their processes and maximize their profits. For this reason, they are constantly searching for ways to achieve competitive advantages.

By means of the qualitative methodology, materialized with a bibliographic review, it has been found that knowledge management in organizations is consolidated as a means to obtain competitive advantages between the end of the last century and the beginning of the current one.

In the analysis of the literature of recent years, many authors have highlighted the growing importance and the fundamental role of effective knowledge management in companies, in these complex times in which we live, where projects are determined by uncertainty. Knowledge management, which through the commitment of the organization in its execution and efficient leadership, is a tool for continuous process improvement, performance increase, innovation and, therefore, a source of competitive advantages.

With the dizzying development of technology and, above all, with the outbreak of the COVID-19 pandemic, the relevance of knowledge management has become even more evident, as the articles in the literature review point out. Its role as a solution and response to a crisis of such magnitude shows that it is a key element for business success.

Through the quantitative methodology, carried out with a survey, the importance of knowledge management for projects has also been demonstrated. The totality of the respondents who sent their answers affirmed this consideration. Likewise, a very high percentage (71.4%) stated that their companies consider knowledge management as a main means to achieve competitive advantages.

As a result of the main objective of the research, it can be concluded that knowledge management is a fundamental element in organizations in general and in projects in particular, to obtain competitive advantages that make success possible.

It should be noted that, both in the literature review and in the survey, there is a lack of implementation or adequate application of knowledge management in companies, despite knowing the benefits it offers. This shows that it is a process that still has great room for improvement and that companies should continue to consider increasing their efforts for proper knowledge management.

6. References

- Abubakar, A.M.; Elrehail, H.; Alatailat, M.A.; Elçi, A. (2019). Knowledge management, decision-making style and organizational performance. *Journal of Innovation and Knowledge*, 4(2), pp. 104–114. <https://doi.org/10.1016/j.jik.2017.07.003>
- Ajmal, M.; Helo, P.; Kekale, T. (2010). Critical factors for knowledge management in project business. *Journal of Knowledge Management* 14(1): 156-168. <https://doi.org/10.1108/13673271011015633>
- Alavi, M.; Leidner, D. E. (2001). Review: Knowledge Management and Knowledge Management Systems: Conceptual Foundations and Research Issues. *MIS Quarterly*, 25(1), 107–136. <https://doi.org/10.2307/3250961>
- Alvarenga, J.C., Branco, R.R., Guedes, A.L.A., Soares, C.A.P. and Silva, W.d.S.e. (2020), "The project manager core competencies to project success", *International Journal of Managing Projects in Business*, Vol. 13 No. 2, pp. 277-292. <https://doi.org/10.1108/IJMPB-12-2018-0274>
- Ammirato S, Linzalone R, Felicetti AM. (2021) Knowledge management in pandemics. A critical literature review. *Knowledge Management Research & Practice* 19(4): 415–426. <https://doi.org/10.1080/14778238.2020.1801364>
- Baiget, J. (2016). *Gestión del conocimiento y competitividad*. EUNSA. <https://elibro.net/es/lc/bibliotecaui1/titulos/47285>

Barrasa, A.; Gil, F.; De la Osa, J.C.; Alcover, C.M. (2002). La gestión del conocimiento: tendencias y desarrollos en España. *Revista de Psicología del Trabajo y de las Organizaciones*, 18(2-3), 319-342. <https://www.redalyc.org/pdf/2313/231318274010.pdf>

Bueno, E. (1999) La gestión del conocimiento: Nuevos perfiles profesionales. Sociedad Española de Documentación e Información Científica – SEDIC. https://www.academia.edu/8013246/LA_GESTI%C3%93N_DEL_CONOCIMIENTO_NUEVOS_PERFILES_PROFESIONALES

Codina, L.I. (2020). Cómo hacer revisiones bibliográficas tradicionales o sistemática utilizando bases de datos académicas. *Revista ORL*, 11(2), 139–153. <https://doi.org/10.14201/orl.22977>

Colina, F.; Albites, J. (2020). Aprendizaje e innovación: retos en las organizaciones del siglo XXI. *Desde el Sur*, 12(1), pp. 167-176. <https://doi.org/10.21142/DES-1201-2020-0011>

Darfeuille, C. (2017). How to systematically learn lessons from projects: The paradigm of project ReviewsVira Liubchenko. *Proceedings of the 12th International Scientific and Technical Conference on Computer Sciences and Information Technologies, CSIT 2017* Volume 2, Pages 132 – 139. <https://ieeexplore.ieee.org/document/8099438>

Deming, E. (1986) *Out of the crisis*. The MIT Press.

Donate, M.; Sánchez, J. (2015). The role of knowledge-oriented leadership in knowledge management practices and innovation. *Journal of Business Research*. Volume 68, Issue 2, February 2015, Pages 360-370. <https://doi.org/10.1016/j.jbusres.2014.06.022>

Drucker, P. (1994). The age of social transformation. *The Atlantic Monthly*. http://www.providersedge.com/docs/leadership_articles/Age_of_Social_Transformation.pdf

Drucker, P. (1999). Knowledge worker productivity: the biggest challenge. *California Management Review*. Vol 41 nº 2. Berkeley University. https://www.iriscrm.com/app/uploads/2021/05/knowledge_workers_the_biggest_challenge.pdf

Englund, R.; Bucero, A. (2019) *The Complete Project Manager*. Integrating people, organizational and technical skills. BK Publishers Inc.

Flórez, L. (2018) Identificación de prácticas organizativas para la acumulación de conocimiento y de herramientas de gestión de información. *Gestión y gerencia DCEE-UCLA*. ISSN: 1856-8572 Vol. 12, nº 2. <https://dialnet.unirioja.es/servlet/articulo?codigo=7762327>

Gómez, M.; Proaño, T.; López, A. (2020). La relación entre el desempeño y el aprendizaje en las organizaciones. *Panorama Económico*, 28(3), 182-196. <https://doi.org/10.32997/pe-2020-2700>

González, D.; Medina, A.; Medina, Y.; El Assafiri, Y.; Nogueira, D. (2021). La identificación del conocimiento como herramienta de gestión y mejora de procesos. *Ingeniería Industrial*. ISSN- e 1815-5936, Vol. 42, Nº. 2. <https://dialnet.unirioja.es/servlet/articulo?codigo=8517858>

Grant, K.A. (2007). Tacit Knowledge Revisited – We Can Still Learn from Polanyi. *Electronic Journal of Knowledge Management*. Volume 5 Issue 2 2007 (173 -180). https://www.researchgate.net/publication/215439276_Tacit_Knowledge_Revisited_-_We_Can_Still_Learn_from_Polanyi

Idobro, P.; Acosta, B.; Cueva, F.; Rueda, I. (2018). Una revisión a la gestión del conocimiento en el entorno de los proyectos. *Las tendencias en contabilidad y gestión empresarial*. Visión de Ibero-América. Centro de Publicaciones PUCE. <https://edipuce.edu.ec/wp-content/uploads/2019/12/LAS-TENDENCIAS-EN-CONTABILIDAD-Y-GESTION-EMPRESARIAL.pdf>

- Idrees, H.; Xu, J.; Arslan, S.; Tehseen, S. (2023) A systematic review of knowledge management and new product development projects: Trends, issues, and challenges. *Journal of Innovation & Knowledge*. Volume 8, Issue 2. <https://doi.org/10.1016/j.jik.2023.100350>
- Iriarte, C.; Bayona, S. (2020). IT projects success factors: a literature review. *International Journal of Information Systems and Project Management*, 8(2), 49–78. <https://doi.org/10.12821/ijispm080203>
- Kantar (2021) ¿Qué piensan los líderes empresariales sobre la recuperación tras la crisis? *Global Business Compass*. <https://www.kantar.com/es/inspiracion/servicios-investigacion/global-business-compass>
- Lee, N. & Lings I. (2008). *Doing business research: A guide to theory and Practice*. SAGE Publications Ltd. Londres. <https://international.scholarvox.com/book/88869861>
- Lopes, G. (2022) La gestión del conocimiento y la inteligencia organizacional como herramientas para combatir el Covid-19. Tesis Doctoral. Universidad Politécnica de Cartagena. <https://doi.org/10.31428/10317/11570>
- Lutas, M.; Nistor, R.; Radu, M.; Beleiu, I. (2020). Perceptions regarding the profile of an ideal Project Manager. *Amfiteatru Economic*. 22(54), pp. 608-622. <https://doi.org/10.24818/EA/2020/54/608>
- Martínez, L. (2016). *Cómo buscar y usar información científica. Guía para estudiantes universitarios 2016. Competencias Informáticas e Informacionales*. <http://eprints.rclis.org/29934/>
- Morán, B.; Radames, L. (2018). Gestión del conocimiento como herramienta para las empresas. *RECIMUNDO: Revista Científica de la Investigación y el Conocimiento*, ISSN-e 2588-073X, Vol. 2, Nº. Extra 1, 2018, págs. 225-243. <https://doi.org/10.26820/recimundo/2esp.2018.225-243>
- Muñoz-Seca, B. y Riverola, J. (1997). *Gestión del conocimiento*. Biblioteca IESE de Gestión de Empresas. Barcelona, España: Universidad de Navarra, Folio.
- Muñoz-Villalba, J.F. (2021) The COVID-19 crisis management as the management of a project. lessons learned in Spain. *European Project Management Journal*. Volume 11, Issue 2, Pages 13 – 23. <https://doi.org/10.18485/epmj.2021.11.2.2>
- 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 & Social Change*. <https://doi.org/10.1016/j.techfore.2018.03.017>
- Nonaka, I. (1994). A Dynamic Theory of Organizational Knowledge Creation. *Organization Science*, 5(1), 14–37. <http://www.jstor.org/stable/2635068>
- Nonaka, I.; Takeuchi, H. (1995). *The Knowledge- Creating Company*. Oxford University Press. New York.
- Nyoni, A. M., & Kaushal, S. (2022). Sustainable knowledge management during crisis: Focus on Covid-19 pandemic. *Business Information Review*, 39(4), 136–146. <https://doi.org/10.1177/02663821221109928>
- Ogunnusi, M.; Omotayo, T.; Hamma-Adama, M.; Awuzie, B.O.; Egbelakin, T. (2021). Lessons learned from the impact of COVID-19 on the global construction industry. *Journal of Engineering, Design and Technology*, Vol. 20 No. 1, pp. 299-320. <https://doi.org/10.1108/JEDT-05-2021-0286>
- Pájaro-Rocha, J. (2022). La Gestión del Conocimiento una Herramienta para el Cambio Cultural de las Organizaciones. *Revista Científica Anfíbios*, 5(2), 11-17. <https://doi.org/10.37979/afb.2022v5n2.109>

Para, L.; Jiménez, D.; Martínez, A.R. (2018) Exploring the mediating effects between transformational leadership and organizational performance. *Employee Relations*, Vol. 40 No. 2, pp. 412-432. <https://doi.org/10.1108/ER-10-2016-0190>

PMI (2021) *PMBok: A guide to the Project Management Body of Knowledge*. Seventh Edition. Project Management Institute.

Polanyi, M. (1966) *The tacit dimension*. Double Day Company Inc. New York.

Ribeiro, A.; Amaral, A.; Barros, T. (2021) Project Manager Competencies in the context of the Industry 4.0. *Procedia Computer Science*. Volume 181, 2021, Pages 803-810. <https://doi.org/10.1016/j.procs.2021.01.233>

Ritchie, P.; Jorgensen, K. (2007). Project management knowledge management: moving from standards to leadership. Paper presented at PMI® Global Congress 2007—EMEA, Budapest, Hungary. Newtown Square, PA: Project Management Institute. <https://www.pmi.org/learning/library/knowledge-management-standards-leadership-7399>

Sadeghi, A.; Mostafavi, F. (2018). The role of knowledge-oriented leadership in knowledge management and innovation. *Management Science Letters* 8(3):151-160. <https://www.researchgate.net/publication/323012956> [The role of knowledge-oriented leadership in knowledge management and innovation](https://www.researchgate.net/publication/323012956)

Saks, A. (2019) Antecedents and consequences of employee engagement revisited. *Journal of Organizational Effectiveness*. Volume 6, Issue 1, Pages 19 – 38. <https://doi.org/10.1108/JOEPP-06-2018-0034>

The World Bank (2021) *Cómo la COVID-19 (coronavirus) afecta a las empresas en todo el mundo*. Noticias Banco Mundial. <https://www.bancomundial.org/es/news/infographic/2021/02/17/how-covid-19is-affecting-companies-around-the-world>

Tian, J. (2020). What does a Project Manager Need to Know about Soft Skills? *Modern Economics & Management Forum*. Recuperado de: <https://doi.org/10.32629/memf.v1i1.121>

Tortorella, G.; Mac Cawley, A.; Garza, J.A.; Sawhney, R. (2020) Organizational learning paths based upon industry 4.0 adoption: An empirical study with Brazilian manufacturers. *International Journal of Production Economics*. Volume 219, Pages 284-294. <https://doi.org/10.1016/j.ijpe.2019.06.023>

Ugalde, N.; Balbastre, F. (2013). Investigación cuantitativa e investigación cualitativa: buscando las ventajas de las diferentes metodologías de investigación. <https://revistas.ucr.ac.cr/index.php/economicas/article/view/12730/11978>

Vázquez, E.R.; Romero, J. A. (2020). La gestión del conocimiento en el proceso de transformación digital en tiempos de COVID-19 en una oficina de servicios de una institución de educación superior. *Derecom*, 29, 213-224. <https://dialnet.unirioja.es/servlet/articulo?codigo=7596879>

**Comunicación alineada con los
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