# The Effects of Managers' Strategic Vision on Innovation Performance: A Macro-Level Study

**Roberto Cervelló-Royo**
Department of Economic and Social Sciences, Universitat Politècnica de València, Valencia, Spain
**Jose-Luis Galdon-Salvador**
Department of Business Organization, Universitat Politècnica de València, Valencia, Spain
**Juan J. Lull**
Department of Business Organization, Universitat Politècnica de València, Valencia, Spain
jualulno@doe.upv.es

**Citation:**
Cervelló-Royo, R., Galdon-Salvador, J.-L., & Lull, J. J. (2025). The Effects of Managers' Strategic Vision on Innovation Performance: A Macro-Level Study. ***Joinetech (International Journal of Economy and Technology),*** 1 (2), 69–80. UTAMED. https://doi.org/10.65479/joinetech.23

**ARTICLE INFO**

**Keywords:** innovation; knowledge management; business intelligence; strategic vision; innovation performance; manager.

**ABSTRACT**

Knowledge management is of great importance in innovative processes; furthermore, it can be stated that competitive intelligence and knowledge generation systems for top managers affect business innovation. This article establishes a theoretical framework based on the resource-based view (RBV) to analyze the role of top managers' strategic vision in the success of innovation processes and to provide some empirical evidence on the value of business intelligence systems for the innovation performance of organizations. The results reveal a strong relationship between top managers' vision and innovation performance; moreover, the value of business intelligence systems derives from the relevance of top managers' vision, becoming their main tool for learning and knowledge creation.

*Submission: September. 7, 2025, Acceptance: November 25, 2025. Published: December 2025.*

## 1. Introduction

The importance of knowledge management in innovative processes has been widely demonstrated (Chen & Huang, 2009; Donate & Guadamillas, 2011; Donate & de Pablo, 2015; Feng et al., 2022). Most studies have focused on how to manage employees' knowledge effectively to enhance efficiency in companies in general (Serenko, 2021) and in innovation in particular (Peris-Ortiz et al., 2018; Papa et al., 2020; Durst et al., 2023). Empirical results have shown that knowledge management has an indirect effect on innovation (Salehi et al., 2021), or at least that there is strong modulation by other organizational variables (Lara & Salas-Vallina, 2017; Chang et al., 2022). One of the most relevant factors for the success of knowledge management in organizations is the involvement of top managers in the design and implementation of policies, routines, and information systems for learning and knowledge development (Donate & Guadamillas, 2011, Chaithanapat et al., 2022). However, few studies have analyzed the importance of competitive intelligence and knowledge generation systems for top managers and their effect on business innovation.

In addition to organizational and leadership factors, chief executive officers (CEOs) play a crucial role in allocating resources and determining where and how knowledge management is applied (Aral & Weill, 2007). The most innovative companies are those that can identify strategic knowledge gaps within the organization and are then able to take appropriate initiatives to close these gaps (Cabrilo & Dahms, 2018). Top managers are crucial actors in the strategic leadership of innovation initiatives (Ouedraogo & Rinfret, 2019). Despite the importance of strategic innovation management, research adopting this perspective remains limited (Dogan, 2017).

The objective of this study is to establish a sound theoretical framework based on the resource-based view (RBV) to analyze the role of top managers' strategic vision in the success of innovation processes and to provide empirical evidence on the value of business intelligence systems for innovation performance within organizations. Related studies are presented in Table 1, including the methods applied and their empirical findings.

This paper is organized as follows: First, the theoretical framework is presented, and the working hypotheses are established. Next, the empirical study, data analysis, and results are described. Finally, the conclusions and limitations of the study are discussed.

### Background

The resource-based theory describes firms as bundles of resources, some of which provide a competitive advantage. Among these, a smaller subset of resources determines companies' long-term success (Wade & Hulland, 2004). The RBV offers a solid theoretical framework for analyzing a CEO's perception of the business and the influence on the firm's innovativeness. Grant (1996), building on the RBV, along with

many other authors (Nelson & Winter (1982); Collis (1994); Dosi et al., 2000), proposed a hierarchy of capabilities, distinguishing between static capabilities—associated with the company's functional activities—and dynamic capabilities, which enable the modification and adaptation of static capabilities. Teece (2009), based on Teece et al. (1997), argues that the competencies that are most critical for competitiveness in turbulent environments are dynamic capabilities (Yang & Li, 2011). These capabilities are closely linked to innovation (Babaei & Aghdassi, 2022; Danneels, 2002; Robertson et al., 2023).

Recent developments in the resource-based view build on Grant's (1996) knowledge-based perspective by emphasizing how dynamic managerial capabilities shape the mobilization and reconfiguration of resources under changing competitive conditions. Contemporary reviews argue that strategic leaders play an essential role in orchestrating knowledge assets, interpreting environmental signals, and aligning capabilities with market shifts (Wilden et al., 2019; Felin & Powell, 2019). These contributions highlight that managerial cognition, digital sensing, and adaptive decision-making routines increasingly determine how firms renew their resource bases and sustain innovation performance. In this regard, the RBV has evolved toward a capability-oriented view that integrates strategic vision and digital transformation as central mechanisms for sustaining competitive advantage (Teece, 2019).

The development of dynamic capabilities involves the acquisition of new knowledge (Ribeiro-Soriano et al., 2014; Ge, 2022), which in turn leads to the creation of new routines and mental models in business processes (Peris-Ortiz et al., 2018).

To drive the development of dynamic capabilities, an appropriate organizational and strategic framework is needed (Preston & Karahanna, 2009). Aligning the developed dynamic competences with future technological and market conditions depends on the competence and vision of managers. Distinctive managerial capabilities stem from the largely tacit knowledge assets that managers possess. These managerial capabilities encompass both the individual skills and knowledge of those in managerial positions and the competencies derived from their interactions with the rest of the organization (Hossain et al., 2025; Semeijn et al., 2014).

Managerial capabilities are fundamental because they provide the ability to generate unique information that enables effective interpretation of the environment to identify opportunities and threats, supporting the organization's strategic approach and course of action. Management thus functions as a sensor that directs change in response to the environment. This aspect of managerial capabilities is important as it helps to overcome what Gersick and Hackman (1990) consider to be one of the main obstacles to exogenous change: the difficulty of processing information. Additionally, managerial capabilities are critical for coordinating distinctive, dynamic capabilities by creating a mission that guides the formulation and implementation of strategy, from which other organizational capabilities can be developed (Mehta & Ali, 2021).

**Table 1.** Presentation of related works.

| Authors | Sample | Methods | Empirical findings |
|---|---|---|---|
| Freixanet & Renart (2017) | 271 manufacturers followed between 2005 and 2014 | Self-developed questionnaire with longitudinal information on the international and economic performance of the firms | The findings enhance the understanding of how the timing aspects of internationalization and critical contingencies influence firm capabilities and performance. |
| Agyapong, Maaledidong & Mensah (2021) | 257 SMEs in Ghana | A three-stage least-squares estimator | The findings suggest that, when organizations demonstrate a strong international mindset, the beneficial impacts of entrepreneurial traits such as innovativeness and risk-taking are amplified. This international orientation acts as a key moderating factor in the relationship between entrepreneurial behavior and firm performance, fostering greater innovation and a willingness to embrace risk among SMEs, which in turn enhances overall performance. |
| Freixanet, Monreal & Sánchez-Marín (2020) | 663 manufacturing companies for the period 2007–2014 | A propensity-score-matched longitudinal analysis | Family-owned businesses tend to transform the knowledge gained through exporting into product innovations more effectively and efficiently than nonfamily companies, thanks to their distinctive innovation strategies and capabilities. |
| Fletcher, Harris & Richey Jr. (2021) | Company interviews (CEO, sales director, R&D director, etc.) and financial statements | A process approach | Companies can strengthen and expand their retrospective learning abilities, allowing them to quickly detect and address challenges that arise during internationalization. At the same time, by applying prospective learning, they can proactively design strategies for building knowledge capabilities in anticipation of future global operations, thereby enhancing both the pace and effectiveness of their international expansion. |

| | | | |
|---|---|---|---|
| Yi, Zhang, Zhan, Yan & Chen (2021). | 975 companies in 115 countries | A Cox proportional hazard model and the survival analysis method | This study deepens comprehension of how internationalization speed influences corporate performance and provides practical insights to guide emerging market multinationals in determining an appropriate pace for their global expansion. |
| Fraccastoro, Gabrielsson, & Chetty | Three firms from Finland, New Zealand, and Sweden respectively | Cross-case analysis | The findings are based on a multiple-case analysis of companies originating from small open economies, specifically Finland, New Zealand, and Sweden. |

Scholars vary in how they define the components of managerial competence. Lado and Wilson (1994), for instance, identify two key dimensions: articulating a strategic vision and creating advantageous connections with the external environment. In contrast, Lado et al. (1992) introduce a third, distinct dimension —leadership—which they regard as separate from the strategic vision aspect.

In Ansoff's (1985) model, managerial competencies are defined by three main components: (1) the position and exercise of managerial power, referring to the influence that managers can exert within the organization and their willingness to use it; (2) managerial qualifications, encompassing the knowledge and ability to solve problems, as well as talent and leadership skills; and (3) managerial mentality, which includes awareness and understanding of the environment, time orientation, risk propensity, values, norms, and objectives. These dimensions have been empirically validated (Konigova & Hron, 2012). As observed, the notion of business vision consistently emerges across the presented models as a central element of managerial competencies (Levenson et al., 2006).

### Management Vision as a Source of Competitive Advantage from RBV

To examine managerial vision from the RBV perspective, it is necessary to analyze the characteristics of the assets that render them sources of competitive advantage. For instance, regarding their value, a manager's vision plays a decisive role in acquiring, developing, and deploying other resources and capabilities, transforming them into valuable outputs, and creating firm value. Barney (1994) underscores the importance of managerial talent—particularly its heterogeneity—in enhancing a firm's competitive position. Similarly, Castanias and Helfat (1991) contend that managerial competencies constitute a resource that is capable of generating sustained competitive advantages, as they are developed through experiential learning. This experiential nature makes such competencies difficult to codify, thereby functioning as an isolation mechanism that prevents imitation by competitors (Levenson et al., 2006; Magnanini et al., 2021).

Regarding managerial mobility, although a manager can be hired by competing companies, their vision is shaped by the specific context, particularly the sector and, above all, the characteristics of the organization in which that vision was developed. A given managerial business vision loses much of its relevance outside the context to which it applies. Consequently, different degrees of mobility can be identified depending on the similarity between the contexts in which the vision was formed and where it is later applied. The same reasoning applies to the relevance and alignment of the vision with the strategic factors in the industry.

The range of factors influencing strategic vision is too broad for effective study, and one of the primary challenges to vision serving as a source of competitive advantage is its durability. A manager's vision is an asset that rapidly depreciates over time. In information-intensive industries (Glazer, 1991), where knowledge stocks frequently turn over, the time sensitivity of vision becomes a crucial consideration in decision-making. Since business vision is constantly evolving and subject to varying degrees of obsolescence, nonsubstitutability is one of its defining features. Business intelligence systems have the capability to generate new strategic knowledge (Eidizadeh et al., 2017; Ishikawa & Nagakawa, 2013; Sharma & Dijaw, 2011). Numerous studies have linked business intelligence usage to strategic development; e.g., Abusweilem and Abualoush (2019) demonstrate its influence on strategy and knowledge management in banking; Dana et al. (2022) illustrate how urban entrepreneurs leverage digital technologies for strategic benefit; and Miah and Yeoh (2018) investigate how business intelligence impacts strategy in the healthcare sector. Business intelligence systems (Alsarayreh et al., 2025) thus play a vital role in mitigating obsolescence within turbulent environments.

The RBV argument gains traction when linked to dynamic managerial capabilities: strategic vision does not act in isolation but operates through repeated cycles of data-driven sense-making and resource reconfiguration. In practice, top managers translate business intelligence outputs into selective variation (where to probe), internal selection (what to scale), and retention (which routines to stabilize), thereby renewing the firm's resource base under conditions of environmental dynamics. This mechanism clarifies why vision and monitoring systems are mutually reinforcing: vision focuses attention on the few information streams that are most critical under uncertainty, while intelligence infrastructures accelerate learning loops that keep vision from becoming obsolete. Framing vision as a capability for continuously reallocating and recombining resources helps explain sustained innovation performance beyond one-shot strategic insights.

### Managers' Vision and Innovation

Pitt and Clarke (1999) define strategic innovation as the purposeful orchestration of organizational knowledge and managerial competencies, insofar as they enable the generation of a distinctive vision through which the environment can be effectively interpreted (Bettiol et al., 2012). This vision,

or mental model (Senge, 1990), of the organization and its environment allows managers to detect opportunities and threats, establishing the strategic focus needed to exploit asymmetries in strategic factors in the market (Lado & Wilson, 1994). Managers thus play a central role in defining the mission that guides strategy formulation and implementation, from which the organization's other competencies are developed (Lado et al., 1992; Battistella et al., 2012).

Managerial competencies derive from both the explicit and tacit knowledge assets possessed by managers. These typically encompass not only the individual skills and knowledge of managers but also the competencies emerging from their interactions and collective actions. Leadership skills enable managers to communicate the mission effectively and secure commitments across the entire organization. These skills foster collective action rather than isolated efforts and are considered to be decisive to organizational success (Lado & Wilson, 1994; Lado et al., 1992, Donate & de Pablo, 2015). Consequently, managerial competencies include a broad range of attributes such as general and specialized knowledge, physical and cognitive skills, personality traits, motivation, and self-image (Kanungo & Misra, 1992). Osbaldeston and Barham (1992) emphasize the connection between a company's competitiveness and the managerial ability to develop and leverage the expertise and talent of all members of the organization, while integrating and motivating a complex team. More recent studies have supported these findings (Muzzi & Albertini, 2015; Freixanet & Renart, 2020).

These distinctive competencies drive successful innovation processes by playing a crucial role in acquiring, developing, and utilizing other resources and capabilities, ultimately transforming them into valuable products and creating value. Accordingly, Lado et al. (1992), along with Castanias and Helfat (1991), argue that managerial competencies are essential for organizational success, especially in dynamic environments characterized by adaptability and continuous innovation (Penagos & García, 2024). Knowledge management and learning policies—key elements in a company's innovation processes—are guided by managers' vision, which provides meaning and direction to learning and defines the knowledge areas to be prioritized. These areas are subsequently translated into innovations.

The knowledge possessed by managers and their vision of the business are essential elements that lend a strategic character to the development and application of knowledge within the organization's innovation processes. Business knowledge serves as the foundation from which top managers interpret the environment (Bettiol et al., 2012). The CEO's vision enables the identification of opportunities and the shaping of strategies to exploit them (Yang & Li, 2011), primarily through innovation (Cavalcante et al., 2011).

This leads us to the following hypothesis:

**Hypothesis 1: The top manager's vision plays a fundamental role in innovation performance.**

## Information and Knowledge in Managerial Decision-Making

Numerous studies have examined the relationship between business intelligence systems and organizational innovation (de las Heras-Rosas & Herrera, 2021; Faltan et al., 2024). Davenport and Prusak (1998) argue that knowledge originates from information. They define knowledge as a combination of experience, values, information, and practical skills that provides a framework for incorporating new experiences and information, making it valuable for action (Moussas et al., 2024).

Similarly, Malhotra (1997) states that knowledge arises from the synergies among data, information, information systems, and the creative and innovative capacity of human beings. Information and its management, therefore, form an essential part of a manager's vision. The role of information is explicitly reflected in Nonaka's (1994) model of knowledge creation, which encompasses both the epistemological dimension (explicit, tacit) and the ontological dimension (person, group, organization, interorganization) (Nonaka & Takeuchi, 1995).

In addition to highlighting the importance of information in their knowledge creation model, Nonaka and Takeuchi (1995) identify five conditions that foster knowledge creation, two of which are directly related to information: redundancy or duplicity of information, and access to a wide variety of information. This underscores the decisive role of information in learning and knowledge management processes. When shaping managers' knowledge and vision, information systems—such as competitive intelligence systems and environment monitoring and control systems—are therefore essential.

Recent research shows that classical knowledge creation mechanisms (Nonaka, 1994; Nonaka & Takeuchi, 1995) operate today within digitally augmented environments where data analytics, artificial intelligence (AI) systems, and collaborative platforms accelerate the conversion of information into actionable knowledge. Contemporary reviews emphasize that digital transformation reshapes socialization, externalization, combination, and internalization (SECI) processes by expanding the scope and speed of knowledge flows across organizational levels (Durst & Edvardsson, 2023). These studies show that knowledge creation is increasingly dependent on hybrid human–machine routines and the integration of real-time information streams, complementing the original epistemological and ontological principles of the knowledge-based view.

A key managerial task is to transform available information into action through collaborative decision-making. Effective decision-making involves choosing a course of action that is both timely and cost-efficient (Eisenhardt, 1989). This process is most cost-effective and accurate when it aligns with the company's organizational structure.

While Davenport and Prusak's (1998) concept of knowledge as "information in action" remains influential, recent research shows that business intelligence and analytics systems have transformed how firms convert information into strategic decisions and innovation outcomes. Data-driven insights enhance managerial sensing capabilities, improve opportunity recognition, and strengthen the alignment between resource allocation and environmental conditions (Ghasemaghaei & Calic, 2019). These studies demonstrate that business information system (BIS) infrastructures now play a central role in reducing uncertainty, accelerating learning cycles, and supporting managers' strategic vision, especially in dynamic and high-velocity contexts. As a result, information systems have evolved from passive repositories to active enablers of innovation-oriented decision-making.

Information is valuable in decision-making because it helps reduce uncertainty, allowing for more rational choices (Eidizadeh et al., 2017; Ledi, 2024). Reducing uncertainty is a fundamental aspect of innovation processes. Information, combined with managerial knowledge, becomes a critical factor in decision quality and directly impacts the company's strategic direction, especially in high-risk decisions linked to radical innovations. Therefore, it is essential to gather information on key strategic factors within the competitive environment—such as technological developments, government policies, and market trends—both in the present and for future projections. This need for understanding of the environment demands a competitive intelligence system that is capable of delivering both quantitative and qualitative data (Siegel & Renko, 2012).

Managerial information directly influences overall performance—whether by shaping organizational vision or guiding decision-making processes—and has a specific impact on innovation (Ghasemaghaei & Calic, 2019; Eidizadeh et al., 2017). This leads us to state the following hypothesis.

**Hypothesis 2: Innovation performance depends on business intelligence and monitoring systems.**

### The Importance of Middle and Line Managers' Competencies in the Innovation Process

Human-resource-based capabilities typically include the training, experience, relationships, and vision of employees (Barney, 1991; Grant, 1996). The knowledge and competence of middle and line managers, therefore, comprise a combination of formal training, experience gained in managing their department, and leadership.

The knowledge and skills of middle and line managers are particularly relevant in innovation processes, as the challenge they face is twofold. On the one hand, they must keep abreast of the technologies used in their departments, new management techniques, and the evolution of production processes or products (Berraies, 2020; Xie et al., 2021). This is due to the rapid and constant pace of innovation across all industries and levels, which requires not only continuous updating but also familiarity with and mastery of new technologies. On the other hand, the development of skills such as teamwork and leadership is fundamental to the creation of innovations.

For example, Ross et al. (1996) identify three components of human assets in the development of information-technology-based innovations: technical skill, business understanding, and problem-solving orientation. Technical skill refers to knowledge of the technology and its potential, highlighting the importance of qualified technical staff who can recognize opportunities to apply new technologies as they emerge. Business understanding arises from frequent interaction with customers, whether internal or external to the company. This practice is seen as critical for middle managers to develop business understanding and problem-solving capabilities through close relationships with other business units and accumulated experience. Moreover, maintaining a close relationship with customers and focusing on the results of their efforts fosters high motivation. Problem-solving orientation enables shared responsibility and active participation in the development of innovations. This approach contrasts with traditional methods that clearly define individual tasks within innovation processes. Work is instead organized through highly autonomous teams, which fosters more creative solutions (Rohlfer et al. 2022). Managers must define the organization's goals and constraints to establish boundaries for team decision-making.

While the classical view highlights the role of middle managers in providing technical skills, business understanding, and problem-solving capabilities for innovation (Ross et al., 1996), recent research shows that their contribution has evolved significantly in digitally intensive environments. Contemporary studies emphasize that middle managers now enable innovation by integrating digital tools into workflows, coordinating cross-functional collaboration, and facilitating ambidextrous learning routines that support both exploration and exploitation (Xie et al., 2022; Crupi & Mortara, 2025). These contributions highlight that middle managers' effectiveness increasingly depends on their ability to leverage analytics, digital platforms, and agile coordination mechanisms, complementing their traditional expertise and enhancing their capacity to translate strategic objectives into operational innovation outcomes.

Any radical innovation requires a deep knowledge of business operations. The role of middle and line managers as agents of change in innovation processes is also emphasized; therefore, they must possess the ability to motivate and lead this change, in addition to business analysis skills and technical competence (Crupi & Mortara, 2025; Mustafa et al., 2016). Companies with middle and line managers who have a deep understanding of their areas of expertise can innovate business processes, conceive and develop reliable and cost-effective innovations that support the organization's business needs more rapidly than competitors, and communicate and collaborate with business units more efficiently. From a management perspective, middle and line managers also play a crucial role in managing knowledge and regulating knowledge inflows (Xiong, 2021).

This leads to the following statement:

**Hypothesis 3: Middle and line managers' competencies play an important role in innovation performance.**

## METHODS

The data were extracted from a secondary data source, namely the EIB Investment Survey (EIBIS) from the European Investment Bank (EIB). The EIB passes this investment survey to thousands of companies every year. The data are freely accessible to researchers and the general public (EIB Investment Survey, n.d.).

The repository contains the survey responses of approximately 12,000 companies in the 27 EU member countries, 600 companies in the UK, and 800 companies in the USA (Ipsos MORI, 2020). It covers questions about corporate investments and investment financing. The survey data provide firm-level information on investment decisions and investment financing options. Firms were selected from Nomenclature of Economic Activities (NACE) categories C–J with at least five employees. Respondents were senior managers, and could be the owner, the CEO, the chief financial officer (CFO) or a finance manager. The data are represented as an aggregation of companies in each country. The lack of comprehensive statistics precludes analysis of data by company and of the differences between individual businesses. Thus, in this work, the current state of innovation in the European Union member countries is studied through a macro-level analysis (by country).

The quality of the data used for the EIBIS survey was recently validated (Brutscher et al., 2020). The surveyed companies were chosen from the Orbis database of the Bureau van Dijk. In the validation by Brutscher (2020), it was found that the sample reflects the business population of interest. No selection bias was found either. This suggests that the EIBIS is a reliable data source. The sample was found to sufficiently cover the casuistry of the real population, and when making a comparative evaluation of randomly chosen samples, it was seen that there is no systematic sampling bias. Finally, the sample was compared with those of other databases, viz. Eurostat Structural Business Statistics and CompNet, and it was found that the survey adequately reflects the differences between countries and key variables.

### Measures

The survey consisted of more than 40 questions. Although the data focus mainly on the investment activities, financing needs, and financial difficulties of firms, it also provides information on other areas, such as digital transformation in these firms. The specific questions of interest to test our hypotheses are as follows: The most important variable was whether the company had developed or introduced new products, processes, or services. The EIBIS includes the question "Were the products, processes or services new to the company, new to the country, new to the global market?", which asked for a multiple-choice answer: "no innovation," "new to the firm," "new to the country," and "new to the global market." The ratio of companies that introduced innovation, independently of the scope of implementation, was used as the dependent variable "Innovation in the firm."

To measure the top manager's vision, the following question was used: "Does the CEO/company head of your firm have more than 10 years of experience?" with a binary yes/no response. This variable was used as a proxy to reflect the knowledge of the company's top management. The manager's vision permeates decision-making on all business activities. Therefore, it is a vital strategic asset. However, its assessment is challenging. Firstly, vision has a wide spectrum of possibilities with respect to any business characteristic being analyzed. Secondly, it can only be evaluated ex post considering the company's outcome after a strategic implementation in line with the vision. Moreover, the business outcome is mediated and moderated by many other factors. It is thus necessary to resort to a proxy variable that is quantifiable. In this case, the years of experience of a manager in the sector guarantees the aspects mentioned above.

To measure the business intelligence and monitoring system variable, the question selected was: "Does your company use a formal strategic business monitoring system? The response could be yes or no.

The variable describing middle and line managers' competencies has been measured in several ways by researchers (Mbokasi et al., 2004). In our model, the variable to be measured is the skills of middle and line managers to develop the vision of top managers. For this purpose, we chose the EIBIS question on competencies in higher-level occupation: "Thinking about the broad categories of employees, for each, I'd like to know how many you think are fully proficient in their job. A proficient employee is someone who is able to do the job to the required level." The question is repeated per category of workers: Higher, medium, and lower-level occupations. The percentage adequacy of workers in higher-level occupations with the required competencies was the question selected to measure the middle and line managers' competencies.

We controlled for firm size because size is a key factor in determining the structure and capabilities of organizations, and thereby their innovation performance (Kimberly, 1976). When companies were interviewed, their size was taken into account as micro (5–9 employees), small (10–49 employees), medium (50–249 employees), or large (more than 250 employees). The EIBIS provides the average of the individual company values for each question, grouped by country and size.

## Analyses and results

The values of the mean, standard deviation (SD), and correlations between the study variables are presented in Table 2.

**Table 2.** Descriptive statistics and correlations between variables.

| | Mean | SD | 1 | 2 | 3 | 4 |
|---|---|---|---|---|---|---|
| 1. Innovation performance | 0.32 | 0.12 | | | | |
| 2. Top manager's vision | 0.88 | 0.17 | 0.40** | | | |
| 3. Business intelligence and monitoring system | 0.50 | 0.24 | 0.72** | 0.31** | | |
| 4. Middle and line managers' competencies | 22.89 | 52.94 | 0.39** | −0.01 | 45** | |
| 5. Firm size | 1.5 | 1.12 | 0.355** | −0.31** | 0.58** | 0.48** |

$*p < 0.05$. $**p < 0.01$; $N = 116$
*Source: Own elaboration.*

To test the hypotheses, we conducted a multiple regression analysis by regressing innovation on the control variable of firm size (model 1) and successively adding business intelligence and monitoring system (model 2), top manager's vision (model 3), and middle and line managers' competencies (model 4). The results of these four models are presented in Table 3.

**Table 3.** Stepwise regression with innovation performance as the dependent variable.

| Independent variables | Model 1 | Model 2 | Model 3 | Model 4 |
|---|---|---|---|---|
| Firm size | 0.36** | −0.09 | 0.10 | 0.10 |
| Business intelligence and monitoring systems | | 0.77** | 0.58** | 0.58** |
| Top manager's vision | | | 0.25** | 0.25** |
| Middle and line managers' competencies | | | | 0.01 |
| | | | | |
| *F* change | 16.43** | 92.26** | 8.60** | 0.00 |
| Adjusted $R^2$ | 0.12 | 0.51 | 0.54 | 0.54 |
| Change in $R^2$ | 0.13 | 0.39 | 0.03 | 0.00 |

Table entries are standardized regression coefficients
$*p < 0.05$. $**p < 0.01$; $N = 116$
*Source: Own elaboration.*

As can be seen in Table 3, the business intelligence and monitoring system (model 2) has a very strong impact on innovation performance ($\beta = 0.77$; $p < 0.001$), with a very high explanatory power of the variance of innovation (adjusted $R^2 = 0.51$). Model 1, with only the control variable (firm size) as the independent variable, has an adjusted $R^2$ value of 0.12. When the business intelligence and monitoring system variable is introduced into the model (model 2), the change in $R^2$ is considerable (0.39). This result confirms hypothesis 2. Model 3 tests the combined effect of business intelligence and monitoring systems and the top manager's vision. In this model, the significance of business intelligence and monito-

ring systems remains very high ($p < 0.001$), while the effect of the top manager's vision on innovation performance is significant, too ($\beta = 0.25$; $p = 0.004$). The adjusted $R^2$ of model 3 is 0.54, with a significant $F$ change (8.60; $p < 0.004$) with respect to model 2. This result validates hypothesis 1 and confirms hypothesis 2 (already tested by model 2). Finally, model 4 tests the three hypotheses together, with the introduction of middle and line managers' competencies with respect to model 3. In model 4, the significance of the monitoring system and top manager's vision remains very high, but the middle and line managers' competencies variable is not relevant, and the $F$ change of model 4 with respect to model 3 is not significant. This result challenges hypothesis 3.

Finally, a regression model was run on innovation performance with only the control variable and middle and line managers' competencies as independent variables. In this case, middle and line managers' competencies were not significant. Thus, hypothesis 3 is not confirmed, despite its high correlation with innovation performance ($p < 0.01$; Table 3).

Figure 1 shows a representation of a regression model with business intelligence and monitoring systems and top manager's vision as independent variables, and innovation performance as the dependent variable, along each axis. It visually represents how much the samples (blue dots) follow the regression function in a three-dimensional (3D) plane. As can be observed, the countries align with the 3D plane.

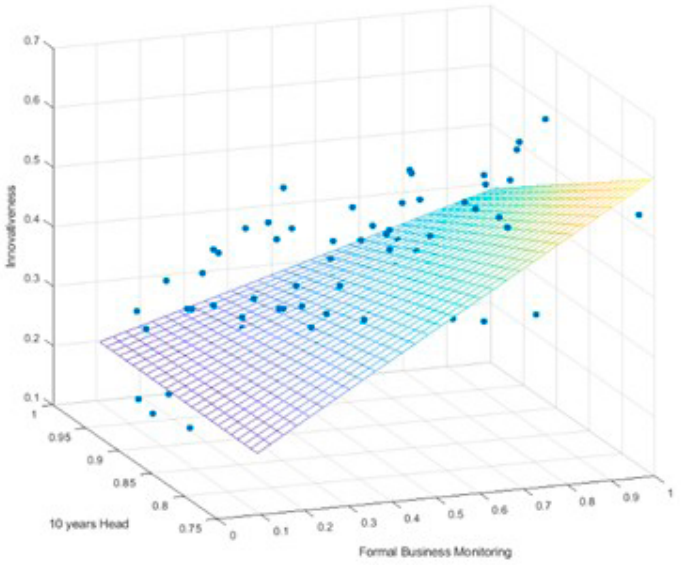


**Fig. 1.** Representation of the regression of innovation performance with business intelligence and monitoring systems and top manager's vision as independent variables.
***Source: Own elaboration.***

## CONCLUSIONS

This study first analyzes theoretically, from the RBV, the importance of the vision of top managers for the innovation performance of the firm. The RBV, and specifically the knowledge management approach, considers knowledge to be a key resource that explains competitive advantage. Competencies are considered as a set of forms of knowledge with different degrees of complexity and specificity (Kogut & Zander, 1992). In this sense, the main knowledge that directs and conditions all the activities of a company is the business vision of the top manager about future market trends and the possibilities of adjusting their organization's capacities in the long run. This vision has always been considered an essential asset for companies (Bellis et al., 2025; Moghaddasi & Sheikhtaheri, 2010; Devece, 2012). Although the top manager's vision has been analyzed from a theoretical point of view, empirical studies addressing this important knowledge are very scarce. One reason for this lack of studies is the paradoxical purpose of generalizing the unique and unmeasurable concept of vision. The important cause of the scarcity of empirical research on such an important factor for innovation performance is the difficulty of operationalizing the business vision construct. Thus, the main result of this research is the confirmation of the essential role played by top managers in leading organizational innovation in two different ways, through the experience of managers and through the availability of tools for top managers to help them create new understanding of the business.

The top managers' vision guides innovation initiatives and is an antecedent factor of innovation performance. From a theoretical point of view, vision is the main driver of innovation processes and defines all other organizational actions. This relationship is clearly shown in the correlation between top managers' vision and innovation performance (Table 2). The value of business intelligence systems only derives from the relevance of the top managers' vision, to become their main tool for learning and knowledge creation. These two factors combined explain more than 50% of the variation in innovation success.

From an empirical point of view, the use of the proxy variable "years of experience" to measure top managers' vision is an interesting alternative to capture such an elusive and abstract concept. The main reason for this choice is that a long tenure at the top of a firm is a guarantee of an accurate and deep knowledge of the market and the firm's capabilities. Moreover, the use of aggregate data on individual firms, grouped by size and country, avoids statistical problems related to individual cases that do not confirm the proposed causal relationship, since innovation performance depends on multiple other factors that are not considered in the theoretical model.

Another important finding of this study is the empirical demonstration of the relevance of business intelligence and monitoring systems in general, and in relation to the vision of managers in particular, in innovation processes. The results of the study are indisputable: business intelligence systems have a strong, significant positive effect on the innovation performance of the firms. This is because business intelligence systems make it possible to better assess the risk inherent in all decisions related to the allocation of resources in innovation processes regarding specific lines of products or technologies. However, business intelligence systems also perform a silent task, helping to create the vision of top managers. The high correlation (Table 2) between the top manager's vision and the monitoring system shows this relationship.

It must be said that, as in the case of the top manager's vision construct, the use of aggregated data helps to overcome the diminished importance of the relationship due to other essential factors that are not considered in the assessment of innovation performance.

Regarding the third hypothesis, viz. the importance of middle and line managers in innovation processes, the study was inconclusive. Despite the strong correlation with innovation, the positive influence of middle and line managers on innovation is masked when the control variable of firm size is introduced into the regression model. Although the literature has always highlighted the importance of middle and line managers in innovation processes and some empirical studies support the hypothesis (Cheng et al., 2017; Berraies, 2020; Rohlfer et al., 2022; Ellis et al., 2025), in our study, this effect is relevant but not as independent from firm size as the literature predicts. The close relationship between firm size and the ability to have skilled and experienced middle and line managers with a high level of knowledge and experience limits the verification of the third hypothesis when including size as a control variable in the model.

From a managerial point of view, an interesting result is the nonsignificance of firm size on innovation performance when the use of business intelligence systems is introduced into the model. This is an important result for practitioners and managers, as the reduction of information technology costs and standardized and off-the-shelf business intelligence applications allow the introduction of such affordable systems even for small companies. Managers in small and medium-sized enterprises (SMEs) must be aware of the relevance of these systems to help create knowledge on how the market will evolve in the future and what are the most appropriate actions to maintain business competitiveness (Devece et al., 2017).

While our results highlight the pivotal role of managerial vision and business intelligence infrastructures, they also point to a broader implication: innovation performance depends increasingly on the interaction between human cognition and data-driven sensing systems. This complementarity suggests that future research should move beyond static proxies, such as tenure, to investigate how managers develop, update, and sometimes replace their strategic mental models as digital technologies reshape competitive environments. Understanding how vision evolves over time, how it interacts with organizational learning routines, and how it can be augmented (or distorted) by analytics will be essential to explaining heterogeneity in innovation outcomes across firms and countries.

## lIMITATIONS

One of the most difficult problems in the social sciences is to measure the value of abstract concepts. In the case of the vision of the top manager, this problem is aggravated. No one can estimate this concept but the managers themselves, and the answer would always be extremely biased and completely wrong in the case of a mistaken vision. Although years in charge is a limited proxy variable, it is the only objective measure of vision, since a long tenure (ten years) is a guarantee of a good strategic vision.

Another limitation of this study is the use of aggregated data. In some respects, this aggregation avoids the problems related to the simplicity of the model and the numerous cases that would not fit the model owing to other relevant factors affecting innovation that are not taken into account. But the aggregation of the data does not allow the moderating and mediating effects between variables to be assessed, as in the strong relationship between the use of business intelligence systems and the creation of the business vision.

A further limitation is that the relationship between managerial vision and the use of business-intelligence systems may influence each other at the same time. In practice, managers with a clearer or stronger strategic vision are also more likely to invest in monitoring and intelligence tools, so it is difficult to know exactly which factor comes first. Because our study uses aggregated country-level data, we cannot apply methods that help separate these effects or analyze how they change over time. Future research using firm-level longitudinal datasets could better track how changes in managers, strategic tools, and innovation results evolve together, allowing a more precise identification of how these factors interact.

### Conflict of Interest

The authors of this publication declare that there is no conflict of interest.

## REFERENCES

Abusweilem, M & Abualoush, S. (2019). The impact of knowledge management process and business intelligence on organizational performance. ***Management Science Letters***, 9(12), 2143–2156.

Agyapong, A., Maaledidong, P. D., & Mensah, H. K. (2021). Performance outcome of entrepreneurial behavior of SMEs in a developing economy: the role of international mindset. ***Journal of Strategy and Management***.

Alsarayreh, R., Al-Omari, H., & Al-Tarawneh, H. (2025). The impact of business intelligence on strategic ambidexterity: The mediating role of knowledge sharing. ***Electronic Journal of Business Research Methods, 23***(1), 22–39. https://doi.org/10.34190/EJBRM.23.1.02

Ansoff, H.I. (1985). ***¿Qué es la estrategia de la empresa?*** [What is business strategy]. ***Enciclopedia de Dirección y Administración de la Empresa. Volumen V: Dirección general y política de empresa***. Ediciones Orbis, Barcelona, 21–40.

Aral, S., & Weill, P. (2007). IT assets, organizational capabilities, and firm performance: How resource allocations and organizational differences explain performance variation. ***Organization Science***, 18(5), 763–780.

Babaei, M., & Aghdassi, M. (2022). Measuring the dimensions of quality in service innovation: A dynamic capability and organisational competency perspective. ***Total Quality Management & Business Excellence***, 33(3-4), 434–466.

Barney, J. B. (1991). Firm resources and sustained competitive advantage. ***Journal of Management***, 33(1), 99–120.

Barney, J. B. (1994). Bringing managers back in: a Resource-Based Analysis of the role of managers in creating and sustaining competitive advantages for firms. In Barney, J. B. (Ed.): ***Does Management Matter?*** (pp. 3–36). Chartwell-Bratt Ltd.

Battistella, C., Biotto, G., & De Toni, A. (2012). From design driven innovation to meaning strategy. ***Management Decision***, 50(4), 718–743.

Bellis, P., Verganti, R., & Zasa, F. P. (2025). Who drives the creation of a novel vision? The role of individual insights and the ability of "letting go". ***Journal of Business Research***, ***186***, 114977.

Berraies, S. (2020). Effect of middle managers' cultural intelligence on firms' innovation performance. Knowledge sharing as mediator and collaborative climate as moderator. ***Personnel Review***, 49 (4), 1015–1038.

Bettiol, M., Di Maria, E., & Finotto, V. (2012). Marketing in SMEs: The role of entrepreneurial sense-making. ***International Entrepreneurship and Management Journal***, 8(2), 223–248.

Brutscher, P. B., Coali, A., Delanote, J., & Harasztosi, P. (2020). EIB Group Survey on Investment and Investment Finance: A technical note on data quality. Retrieved from https://www.eib.org/en/publications/economics-working-paper-2020-08

Cabrilo, S., & Dahms, S. (2018). How strategic knowledge management drives intellectual capital to superior innovation and market performance. ***Journal of Knowledge Management***, 22(3), 621–648.

Castanias, R.P., & Helfat, C.E. (1991). Managerial resources and rents. ***Journal of Management***, vol. 17, 155–171.

Cavalcante, S., Kesting, P., & Ulhoi, J. (2011). Business model dynamics and innovation: (Re)establishing the missing linkages. ***Management Decision***, 49(8), 1327–1342.

Chaithanapat, P., Punnakitikashem, P., Khin Khin Oo, N. C., & Rakthin, S. (2022). Relationships among knowledge-oriented leadership, customer knowledge management, innovation quality and firm performance in SMEs. ***Journal of Innovation and Knowledge***, 7(1), 100162.

Chang, CY; Chang, YY; Tsao, Y.C., & Kraus, S. (2022). The power of knowledge management: how top management team bricolage boosts ambidexterity and performance. ***Journal of Knowledge Management***, 26(11), 188–213.

Chen, C.J., & Huang, J.W. (2009). Strategic human resource practices and innovation performance. The mediating role of knowledge management capacity. ***Journal of Business Research***, 62(1), 104–114.

Cheng, H., Song, F., & Li. D. (2017). How middle managers' participation in decision-making influences firm innovation performance: Evidence from China Employer–Employee Survey data. ***Chinese Management Studies***, 11(1), 72–89.

Collis, D.J. (1994). Research Note: How valuable are organizational capabilities? ***Strategic Management Journal***, 15, 143–152.

Crupi, A., Mortara, L. Building middle managers' managerial dynamic capabilities through collaborations: exploring the microfoundations in a university–industry consortium. ***Journal of Technology Transfer*** (2025). https://doi.org/10.1007/s10961-025-10242-6

Danneels, E. (2002). The dynamics of product innovation and firm competences. ***Strategic Management Journal***, 23(12), 1095–1121.

Dosi, G.; Nelson, R., & Winter, S. (2000). ***The Nature and Dynamics of Organizational Capabilities.*** Oxford University Press.

Dana, L.-P., Salamzadeh, A., Hadizadeh, M., Heydari, G., & Shamsoddin, S. (2022). Urban entrepreneurship and sustainable businesses in smart cities: Exploring the role of digital technologies. ***Sustainable Technology and Entrepreneurship***, ***1***(2), 100016.

Davenport, T., & Prusak, L. (1998). ***Working Knowledge. How Organizations Manage What They Know.*** Boston. Harvard Business School Press.

Devece, C. (2012). The value of business managers' 'information technology' competence, ***The Service Industries Journal***, 33(7–8), 720–733.

Devece, C., Palacios, D., & Martinez-Simarro, D. (2017). Effect of information management capability on organizational performance. ***Service Business***, 11, 563–580.

Donate, M.J., de Pablo, J.D.S. (2015). The role of knowledge-oriented leadership in knowledge management practices and innovation. ***Journal of Business Research***, 68(2), 360–370.

Donate, M.J., Guadamillas, F. (2011). Organizational factors to support knowledge management and innovation. ***Journal of Knowledge Management***, 15(6), 890–914.

Durst, S., Edvardsson, I. R., & Foli, S. (2023). Knowledge management in SMEs: A follow-up literature review. ***Journal of Knowledge Management, 27***(11), 25–58. https://doi.org/10.1108/JKM-04-2022-0325

EIB Investment Survey. (n.d.). Retrieved April 29, 2022, from https://data.eib.org/eibis/

Ellis, S. J., Khanagha, S., Aalbers, R., & Tuertscher, P. (2025). Middle managers at the crossroads: Navigating legitimacy tensions in pursuit of radical innovation in nascent ecosystems. ***Research Policy***, ***54***(8), 105287.

Eidizadeh, R., Salehzadeh, R., & Esfahani, A. C. (2017). Analysing the role of business intelligence, knowledge sharing and organisational innovation on gaining competitive advantage. ***Journal of Workplace Learning***, 29(4), 250–267.

Eisenhardt, K. M. (1989). Making fast strategic decisions in high-velocity environments. ***Academy of Management Journal***, 12(3), 543–576.

Fatan, B., Keramati, M. A., & Mousavi, S. A. A. (2024). Evaluating the impact of business intelligence on enhancing innovation in the insurance industry considering the role of network learning. ***Business, Marketing, and Finance Open***, ***1***(4), 115–122.

Felin, T., & Powell, T. C. (2019). Designing organizations for dynamic capabilities. ***Academy of Management Perspectives***, 33(4), 383–404.

Feng, L., Zhao, Z., Wang, J., & Zhang, K. (2022). The impact of knowledge management capabilities on innovation performance from dynamic capabilities perspective: moderating the role of environmental dynamism. ***Sustainability***, 14 (8), 4577.

Fletcher, M., Harris, S., & Richey Jr, R. G. (2021). Retrospective and prospective learning: Accelerating the internationalization process. ***Journal of World Business***, 56(3), 101191.

Fraccastoro, S., Gabrielsson, M., & Chetty, S. (2021). Social media firm specific advantages as enablers of network embeddedness of international entrepreneurial ventures. ***Journal of World Business***, 56(3), 101164.

Freixanet, J., Monreal, J., & Sánchez-Marín, G. (2020). Family firms' selective learning-by-exporting: product vs process innovation and the role of technological capabilities. ***Multinational Business Review***.

Freixanet, J., & Renart, G. (2017). The impact of internationalization age and performance on firm survival. In ***GSOM Emerging Markets Conference*** 2017 (pp. 92–95).

Freixanet, J., & Renart, G. (2020). A capabilities perspective on the joint effects of internationalization time, speed, geographic scope and managers' competencies on SME survival. ***Journal of World Business***, 55(6), 101110.

Ge, Y. Q. (in press). The impact of dynamic knowledge management capability on enterprise innovation performance. ***Operations Management Research***.

Gersick, C. J., Hackman, J. R. (1990). Habitual routines in task-performing groups. ***Organizational Behavior and Human Decision Processes***, 47(1), 65–97.

Ghasemaghaei, M., & Calic, G. (2019). Does big data enhance firm innovation competency? The mediating role of data-driven insights. ***Journal of Business Research***, 104, 69–84.

Glazer, R. (1991). Marketing in information-intensive environments: strategic implications of knowledge as an asset. ***Journal of Marketing***, 55(4), 1–19.

Grant, R. M. (1996). Toward a knowledge-based theory of the firm. ***Strategic Management Journal***, 17, 109–122.

de las Heras-Rosas, C., & Herrera, J. (2021). Innovation and competitive intelligence in business. A bibliometric analysis. ***International Journal of Financial Studies***, 9(2), 31.

Hossain, S., Fernando, M., & Akter, S. (2025). Digital leadership: towards a dynamic managerial capability perspective of artificial intelligence-driven leader capabilities. ***Journal of Leadership & Organizational Studies***, ***32***(2), 189–208. https://doi.org/10.1177/15480518251319624

Ishikawa, A., & Nakagawa, J. (Eds.). (2013). ***Introduction To Knowledge Information Strategy, An: From Business Intelligence To Knowledge Sciences***. World Scientific Publishing Company.

Kanungo, R. N., Misra, S. (1992). Managerial resourcefulness: A reconceptualization of management skills. ***Human Relations***, 45(12), 1311–1332.

Kimberly, J. R. (1976). Organizational size and the structuralist perspective: A review, critique, and proposal. ***Administrative Science Quarterly***, 21, 571–597.

Konigova, M., & Hron, J. (2012). Methodology for the identification of managerial competencies in knowledge-based organizations. ***Agricultural Economics-Zemedelska Ekonomika***, 58 (8), 347–353.

Lado, A. A., Boyd, N. G., & Wright, P. (1992). A competency-based model of sustainable competitive advantage: toward a conceptual integration. ***Journal of Management***, 18(1), 77–91.

Lado, A. A., & Wilson, M. C. (1994). Human resource systems and sustained competitive advantage: A competency-based perspective. ***Academy of Management*** Review, 19(4), 699–727.

Lara, F. J., & Salas-Vallina, A. (2017). Managerial competencies, innovation and engagement in SMEs: The mediating role of organisational learning. ***Journal of Business Research***, 79, 152–160.

Ledi, K. K. (2024). Surviving black swan: competitive intelligence and frugal innovation as panaceas to SME value creation during crisis. ***Cogent Business and Management***, ***11***(1). https://doi.org/10.1080/23311975.2024.2405056

Levenson, A. R.,Van der Stede, W. A., & Cohen, S. G. (2006). Measuring the relationship between managerial competencies and performance. ***Journal of Management***, 32(3), 360–380.

Magnanini, S., Trabucchi, D., & Verganti, R. (2021). Convergence in innovation: the perception of synthesis in articulating a new strategic vision. ***Innovation***, 1–23 https://doi.org/10.1080/14479338.2021.2012478

Malhotra, Y. (1997). Knowledge Management in Inquiring Organizations. In ***Proceedings of 3rd Americas Conference on Information Systems***, AMCIS 1997 Proceedings, 181.

Martinez-Conesa, I., Soto-Acosta, P., & Carayannis, E. G. (2017). On the path towards open innovation: Assessing the role of knowledge management capability and environmental dynamism in SMEs. ***Journal of Knowledge Management***, 21, 3.

Mbokasi, B., Visser, D., Fourie, L. (2004). Management perceptions of competencies essential for middle managers. ***Journal of Industrial Psychology***, 30(1), 1–9.

Mehta, A.M., Ali, S.A. (2021). Dynamic managerial capabilities and sustainable market competencies: role of organisational climate. ***International Journal of Ethics and Systems***, 37(2), 245–262.

Miah, S. J., & Yeoh, W. (Eds.). (2018). ***Applying Business Intelligence Initiatives in Healthcare and Organizational Settings***. IGI Global.

Moghaddasi, H., & Sheikhtaheri, A. (2010). CEO as a vision of the future role and position of CIO in healthcare organizations. ***Journal of Medical Systems***, 34(6), 1121–1128.

Moussas, K., Hafiane, J., & Achaba, A. (2024). Business intelligence and its pivotal role in organizational performance: An exhaustive literature review. ***Journal of Autonomous Intelligence, 7***(4), 1286. https://doi.org/10.32629/jai.v7i4.1286

Mustafa, M., Lundmark, E., & Ramos, H. M. (2016). Untangling the relationship between human resource management and corporate entrepreneurship: the mediating effect of middle managers' knowledge sharing. ***Entrepreneurship Research Journal***, 6(3), 273–295.

Muzzi, C., & Albertini, S. (2015). Communities and managerial competencies supporting SMEs innovation networking: a longitudinal case study. ***R & D Management***, 45(2), 196–211.

Nelson, R. R., & Winter, S. G. (1982). ***An Evolutionary Theory of Economic Change***. Harvard University Press.

Nonaka, I. (1994). A dynamic theory of organizational knowledge creation. ***Organization Science***, 5(1), 14–37.

Nonaka, I., & Takeuchi, H. (1995). The Knowledge-Creating Company. How Japanese Companies Create the Dynamics of Innovation. ***Oxford University Press***.

Osbaldeston, M., & Barham, K. (1992). Using management development for competitive advantage. ***Long Range Planning***, 25(6), 18–24.

Osorio-Londono, A. A., Bermon-Angarita, L., Rosado-Salgado, L. A., Osorio-Toro, C. A. (2021). The influence of knowledge management on dynamic capabilities. ***Journal of Information and Knowledge Management***, 20(04), 2150045.

Ouedraogo, M., Rinfret, N. (2019). The sharing and management of managers' knowledge: A structured literature review, ***Knowledge and Process Management***, 26(3), 244–261.

Papa, A., Dezi, L., Gregori, G. L., Mueller, J. & Miglietta, N. (2020). Improving innovation performance through knowledge acquisition: the moderating role of employee retention and human resource management practices. ***Journal of Knowledge Management***, 24(3), 589–605,

Pashchenko, D. (2020). Digitalization in software engineering and IT business. ***International Journal of Software Science and Computational Intelligence***, ***12***(2), 1–14.

Penagos Guzmán, F., & García Solarte, M. (2024). The mediation of the dynamic capacity for innovation between managerial skills and organizational performance in MSMEs located in the department of Caquetá, Colombia. ***PLoS ONE, 19***(10), e0312172. https://doi.org/10.1371/journal.pone.0312172

Peris-Ortiz, M., Devece-Carañana, C. A., & Navarro-Garcia, A. (2018). Organizational learning capability and open innovation. ***Management Decision***, 56(6), 1217–1231.

Pitt, M., & Clarke, K. (1999). Competing on competence: A knowledge perspective on the management of strategic innovation. ***Technology Analysis and Strategic Management***, 11(3), 301–316.

Preston, D. S., & Karahanna, E. (2009). How to develop a shared vision, the key of strategic alignment. ***MIS Quarterly Executive***, 8(1), 1–8.

Ribeiro Soriano, D., Palacios-Marqués, D., Devece-Carañana, C. & Peris-Ortíz, M. (2014). How to create international business competences and their impact on firm performance. ***European Journal of International Management***, 8(3), 279–292.

Robertson, J., Caruana, A., & Ferreira, C. (2023). Innovation performance: The effect of knowledge-based dynamic capabilities in cross-country innovation ecosystems. ***International Business Review, 32***(2), article 101866. https://doi.org/10.1016/j.ibusrev.2021.101866

Rohlfer, S., Hassi, A., & Jebsen, S. (2022). Management innovation and middle managers: the role of empowering leadership, voice, and collectivist orientation. ***Management and Organization Review***, 18(1), 108–130.

Ross, J. W., Beath, C. M., & Goodhue, D. L. (1996). Develop long-term competitiveness through IT assets. ***Sloan Management Review***, 38(1), 31–42.

Salehi, M., Fahimi, M. A., Zimon, G., & Homayoun, S. (2021). The effect of knowledge management on intellectual capital, social capital, and firm innovation. ***Journal of Facilities Management***. https://doi.org/10.1108/JFM-06-2021-0064

Semeijn, J.H.; Van Der Heijden, B. I. J. M., & Van Der Lee, A. (2014). Multisource ratings of managerial competencies and their predictive value for managerial and organizational effectiveness. ***Human Resource Management***, 53(5), 773–794.

Senge, P. M. (1990). ***The Fifth Discipline: The Age and Practice of the Learning Organization.*** Century Business.

Serenko, A. (2021). A structured literature review of scientometric research of the knowledge management discipline: a 2021 update. ***Journal of Knowledge Management***, 25(8), 1889–1925.

Sharma, R. S., & Djiaw, V. (2011). Realising the strategic impact of business intelligence tools. ***VINE Journal of Information and Knowledge Management Systems***.

Siegel, D. S., & Renko, M. (2012). The role of market and technological knowledge in recognizing entrepreneurial opportunities. ***Management Decision***, 50(5), 797–816.

Teece, D. J. (2009). ***Dynamic Capabilities and Strategic Management: Organizing for Innovation and Growth***. Oxford University Press on Demand.

Teece, D. J. (2019). A capability theory of the firm: an economics and (strategic) management perspective. ***New Zealand Economic Papers***, ***53***(1), 1–43.

Teece, D. J., Pisano, G., & Shuen, A. (1997). Dynamic capabilities and strategic management. ***Strategic Management Journal***, 18(7), 509–533.

Wade, M., & Hulland, J. (2004). Review: The resource-based view and information systems research: Review, extension, and suggestions for future research. ***MIS Quarterly: Management Information Systems***, ***28***(1), 107–142.

Wilden, R., Devinney, T. M., & Dowling, G. R. (2019). The architecture of dynamic capabilities: a review and research agenda. ***Academy of Management Annals***, 13(1), 1–26

Xie, X., Wu, Y., Devece, C. (2022). Is collaborative innovation a double-edged sword for firms? The contingent role of ambidextrous learning and TMT shared vision. ***Technological Forecasting and Social Change***, 175, 121340.

Xiong, J., Yan, J., Su, P., Bonanni, C., & Li, Q. (2021). Knowledge management practices by middle managers to attain organizational ambidexterity. ***Technology Analysis and Strategic management***. https://doi.org/10.1080/09537325.2021.2012565

Yang, T. T., & Li, C. R. (2011). Competence exploration and exploitation in new product development: The moderating effects of environmental dynamism and competitiveness. ***Management Decision***, 49(9), 1444–1470.

Yi, C., Zhang, J., Zhan, Y., Yan, X., & Chen, C. (2021). Internationalization speed and subsidiary survival of EMNCs: The moderating roles of CEO international experience and state ownership. Journal of Asian Economics, 77, 101340.