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Driving Innovation by Managing Entrepreneurial Orientation, Cooperation and Learning for the Sustainability of Companies in the Energy Sector

Eduardo Sánchez-García *, Bartolomé Marco-Lajara, Pedro Seva-Larrosa and Javier Martínez-Falcó

Department of Business Organization, Faculty of Economic and Business Sciences, University of Alicante, 03690 San Vicente del Raspeig, Spain
* Correspondence: eduardo.sanchez@ua.es; Tel.: +34-965903400 (ext. 3153)

Abstract: Nowadays, the attitude of companies seems to play a relevant role in detecting and exploiting opportunities to create value, especially in terms of knowledge and cooperation. Thereon, the concept of entrepreneurial orientation has become relevant over the last years. Firms are entrepreneurially oriented when their decision-making, techniques, and procedures allow them to identify opportunities, develop a proactive mindset, and use creative ways to achieve their objectives. The purpose of this paper is to empirically analyze the relationship between entrepreneurial orientation and companies' innovation capacity, in addition to the mediating effect of entrepreneurial networks and firms' learning capacity in this relationship. A sample of 197 Spanish companies in the energy sector is analyzed using the variance-based structural equation modeling technique (PLS-SEM), using the software "SmartPLS" in its version 3.9. The results show a direct positive and significant influence of entrepreneurial orientation on companies' innovation capacity, as well as the existence of an indirect effect through the mediation of entrepreneurial networks and the learning capacity of firms. It is concluded that businesses must dedicate time and resources to develop a strong entrepreneurial orientation which, in addition to allowing them to exploit external entrepreneurial networks, boosts their learning and innovation capabilities, favoring the development of new sustainable possibilities for value creation.

Keywords: entrepreneurial orientation; innovation; sustainable development; networks; knowledge

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1. Introduction

In recent decades, the importance of the entrepreneurial orientation concept has steadily grown among academics, and it is now a popular field of study that attracts intense discussion and the regular attention of scholars worldwide [1–4]. It is possible to define the concept of entrepreneurial orientation in terms of methods, processes, and behavioral and decision patterns which drive a company to engage in relatively risky innovative activities and, as a result, to develop outputs that did not previously exist [5–7]. Then, this term relates to the behavioral characteristics of entrepreneurs, the management methods they have adopted, and their strategic business environment decision-making [8]. Company performance is often seen as the primary aim of researchers in the field of management [9,10]. In this regard, several academics have established the need for further analysis of the determinants that harness the potential of entrepreneurial orientation and improve its comprehension, particularly the identification of the principal mechanisms by which entrepreneurial orientation affects firms' competitiveness [4,11–15]. Over the past few years, the perspective based on resources was adopted as the major model to guide research on the causes of entrepreneurship [16]. Indeed, the hypothesis of this approach asserts that a company's competitiveness stems largely from the company's unique assets and competencies [17]. Then, this approach highlights the importance of a company's resources in establishing its degree of competitive advantage in the market. To gain the

resources to distinguish themselves from their rivals, firms must participate in transactions with others functioning in their surroundings [18–21].

Related to the aforementioned, business exchanges are interwoven in the network of personal and social ties, and the company's performance is contingent on its network of contacts [19,22]. In this vein, entrepreneurial networks have been seen as a contextual complement, implying that entrepreneurs belong to a social framework that favors or restricts certain behaviors [23]. Therefore, to analyze these interactions apart from the relationships of the entrepreneurial networks would derive from the distortion of the comprehension of this occurrence. Entrepreneurial networks may assist businesses in enhancing their ability to learn from external information and to utilize it for creative purposes, so enabling them to confront environmental volatility [24,25]. Innovative businesses also tend to be proactive, to try to be disruptive in their sectors, to desire to stand out not just with innovative goods but also by innovating their internal processes and organizational culture, and by creating unique business and working environments [18,26,27]. Innovation can be understood as the organizations' predisposition to pursue new commercial activities that are creative, difficult to imitate, competitively advantageous, and distinct from conventional procedures in order to create novel results [28]. In this vein, non-innovative enterprises depend on conventional business practices, conventional products/services, and conventional distribution methods, among other undesirable habits, which would make it more difficult for them to thrive in a dynamic and proactive market [26].

Entrepreneurial orientation and learning capacity have been studied together in the past in order to determine how entrepreneurial orientation influences company performance, and findings suggest that businesses' capacity for learning may influence this relationship [29–31]. In this regard, a number of academics have established a relationship between the entrepreneurial approach and the learning capacity of businesses [13,32–34]. Several studies have linked these non-financial elements to organizations' financial success, such as market efficacy, the attainment of goals, and reputation [30,33–37]. Nonetheless, some research in this field yields contradictory findings [17,25,38–41]. In addition, to the best of our knowledge, there are no studies that analyze these relationships.

Then, the purpose of this paper is to empirically analyze the relationship between entrepreneurial orientation and the innovation capacity of firms, in addition to the mediating effect of entrepreneurial networks and firms' learning capacity on this relationship. In this way, it is intended to establish how the attitude towards entrepreneurship affects the development of innovations and, consequently, the development of businesses through which new products, processes, and organizations are developed that are more efficient and effective and, therefore, more sustainable and with a greater capacity to create value for society as a whole. To carry out this analysis, a questionnaire composed of validated scales was sent to Spanish companies in the electricity supply sector, obtaining a sample of 197 valid responses. To test the hypotheses raised, variance-based structural equation modeling was used, particularly the PLS-SEM technique. The results show the existence of a direct, positive, and significant relationship between entrepreneurial orientation and the innovative capacity of firms, although it has been empirically evidenced that entrepreneurial networks and learning capacity play a crucial role in this relationship. These factors stand out as key elements that mediate the established relationship, especially in the case of entrepreneurial networks.

This paper is structured as follows. The following section reviews the literature related to the variables under study, on the basis of which the hypotheses to be tested are proposed. Then, in the third section, the methodology used is explained, followed by the results of the statistical analysis in the fourth section. Finally, the conclusions, implications, and limitations of the study are presented, establishing possible future lines of research to be developed based on the results presented.

2. Literature Review and Hypotheses Development

2.1. Entrepreneurial Orientation for Innovation Capacity Enhancement

Entrepreneurial orientation implies certain decision-making habits and practices of a business [42–44]. When a business's decision-making, methods, and practices enable the discovery of opportunities, the development of a proactive attitude and innovative means of attaining the company's objectives, the company is entrepreneurially oriented [4,45,46] This concept is an organizational characteristic that denotes a company's entrepreneurial stance, which is represented in the execution of persistent entrepreneurial activities [4,12,47]. Consequently, it may be of significant benefit for organizations of any size to expand and prosper in a competitive and continuously changing market environment [15,48].

Several researchers observed over the years how the development of entrepreneurial orientation theory could benefit from an incisive investigation of the intermediary variables affecting the entrepreneurial orientation and business innovativeness relationship, thus highlighting the need to identify some of the most important mediating variables [12,49–53]. Entrepreneurial attitudes include a desire to test creative ideas, engage in ventures that assume controlled risks, and seek to make market breakthroughs at a faster rate than competitors, which contribute to the effective achievement of business objectives [31,54]. Entrepreneurial orientation, then, is regarded as a base for attaining a competitive edge since it reveals how businesses might redesign their processes for new growth paths [17,44].

The concept of entrepreneurial orientation has expanded over time, and successively new characteristics have been added [54–57]. To attempt to capture as closely as possible the spirit of this concept, it has been assessed using the five known dimensions: proactiveness, risk-taking, innovation, competitive aggressiveness, and autonomy [48,54,58,59]. Innovative behavior is represented by the innovativeness dimension, which is followed by proactivity, which comprises expecting and preparing in advance to deal with anticipated events. Risk-taking reflects the propensity of companies to assume controlled risk, and competitive aggressiveness means confronting the opponent as opposed to following them [44,57]. Finally, autonomy has also been included, which entails granting workers the ability to make choices based on situational considerations but is uncommon in poor nations [40,59]. Current research on entrepreneurial orientation provides evidence of its relationship to various measures of business performance in different industries [60,61]. Nevertheless, several analyses have shown conflicting or contradictory findings [40,62–65] Based on the above, the following hypothesis is proposed:

Hypothesis 1 (+). *There is a positive and significant relationship between companies' entrepreneurial orientation and their innovation capacity.*

2.2. Entrepreneurial Networks as a Source of Valuable Resources

In entrepreneurship research, scholars have taken a network view emphasizing that enterprises are entrenched in the social networks to which they are linked [23,60,66–68]. This method highlights the significance of network-based elements such as structural positions, cohesiveness, trust, and embeddedness in influencing the execution of entrepreneurial stances, the strategic decisions, and the results of entrepreneurs [15,69–71]. From this viewpoint, entrepreneurial orientation may be seen as a strategic stance that encourages firms to proactively participate in environmental scanning and opportunity-seeking activities with external actors with whom they have or desire to establish connections [70,72]. These businesses might be described as having an open-system mentality that aggressively pursues entrepreneurial endeavors within existing and new networks [73]. The resource-based view posits that a firm's capacity to locate, acquire, and deploy precious, uncommon, unique, and non-replaceable resources is the foundation of value generation and competitive advantage [74,75]. Applying this perspective to the network environment, external resources satisfy a portion of this criterion, since they are valued and relatively scarce, and their successful acquisition depends on path-dependent processes and social intricacies [76–79]. In this regard, greater density of the network, which relates to the extent of connectivity

among network participants, promotes confidence, improving information exchange and minimizing the effect of negative external factors [80,81].

Business networks evolve as a result of the efforts made to establish partnerships and collaborative projects over time and to provide firms with information that is not widely accessible [82]. Thus, the availability of fresh and updated information increases the likelihood that firms will detect pertinent business environment difficulties and will acquire the capacity to respond appropriately [21,83]. Entrepreneurial activities rely largely on the development of valuable networks, which is strongly influenced by a company's degree of access to entrepreneurial networks; hence, network competency is essential for obtaining the essential resources a business requires [84,85]. However, this is not entirely supported by research, with minor or negative outcomes depending on the contextual and/or dependent circumstances under which the cooperation agreement is formulated [86–90]. Due to lack of resources, unstructured innovation strategies, and inadequate interdisciplinary competency bases, businesses with these disadvantages may find it difficult to realize the potential benefits of external networks [91–93]. However, the declining returns of their drawbacks may not be applicable in all instances; studies have indicated that a small number of organizations receive better benefits from inbound open innovation, whilst many firms fail to do so [90,94]. Consequently, the following hypothesis is proposed:

Hypothesis 2 (+). *Entrepreneurial networks exert a mediating effect on the relationship between companies' entrepreneurial orientation and their innovation capacity.*

2.3. Learning Capacity as a Consequence of Entrepreneurial Orientation

Entrepreneurial orientation is an organizational characteristic which describes the strategic stance of a company [4,46]. Without the proper organizational procedures, enterprises cannot achieve the revenue potential of this component [13,45]. Learning inside organizational bounds is beneficial in and of itself, but companies frequently depend heavily upon external sources of knowledge to engage in activities of learning which might not otherwise be possible [95,96]. Over time, the exploration and exploitation of knowledge have been portrayed as different tasks of learning based on networks [97,98]. In this respect, learning capacity may be defined as an organization's capacity to absorb new knowledge and apply it effectively in order to improve its performance [99,100]. Consequently, organizational learning can be understood as the organizational and management features or circumstances that promote or allow an organization to learn [101,102]. This competency has remained associated with performance, particularly in terms of creativity [103–105].

Knowledge creation enables the acquisition of knowledge by shifting perceptions of opportunity and resource use possibilities and resource utilization [55]. The notion of enterprises as organizations that produce and exchange knowledge is at the core of the literature on knowledge in the business management field, to a great extent due to the fact that a company's learning capability allows it to maintain its base of knowledge [106–109]. Information scanning refers to the pursuit and development of knowledge to establish novel market offers for uncertain demand, while its exploitation implies the improvement and utilization of existing knowledge to improve the functioning of the company [109,110].

Learning capacity in enterprises is an organizational as well as an administrative feature that takes place throughout the process of learning inside firms, which allows for the overcoming of existing restrictions in the learning cycle and facilitates its development [101,108,111–113]. Enterprises should establish duties and processes to promote and support the development of organizational knowledge [110,114]. These processes include internalization, socialization, and externalization, in addition to any managerial effort that creates a learning-friendly atmosphere [115]. In general, businesses with a great capacity for learning are better at generating new goods [116,117]. For organizations to remain successful, they must build a strong capacity for learning that allows them to innovate [103,118]. Thus, boosting their learning capacity may assist businesses in adapting to changes in their environment via the development and creation of new functions and skills that are responsive to people's alterations [119]. In addition, organizations with a high

capacity for environmental learning have routines built into their jobs, tools, processes, and personnel to assess and absorb external information to satisfy market demands [29,46,111]. Several studies indicate that the capacity of firms to learn from the environment drives the relationship among entrepreneurial orientation and business outcomes in various fields; however, contradictory results have been obtained in this regard [34,35,45,53], necessitating a deeper examination of this variable in the established relationship. Then, the following hypothesis is proposed:

Hypothesis 3 (+). *Learning capacity exerts a mediating effect on the relationship between companies' entrepreneurial orientation and their innovation capacity.*

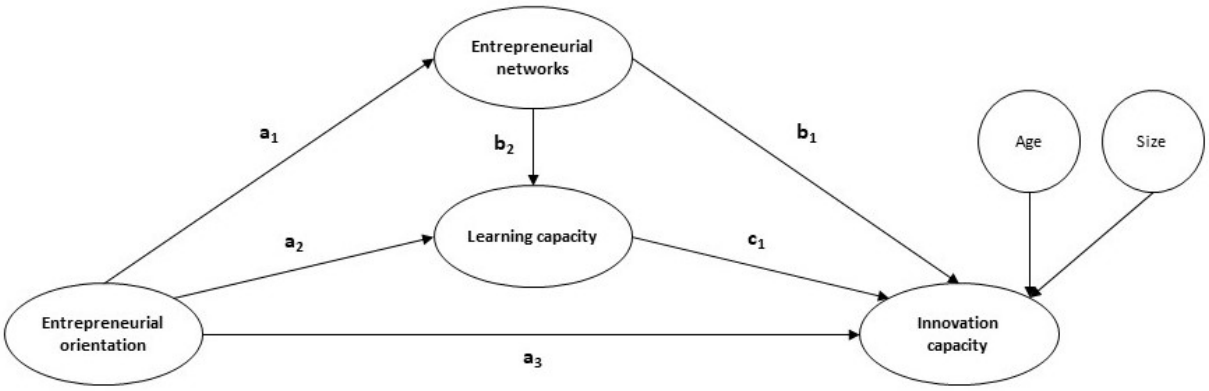
2.4. Joint Role of Entrepreneurial Networks and Firms' Learning Capacity

In the strategic management literature, research on the contribution of organizational learning in inter-organizational structures to innovation has become highly relevant [45,46,120]. Such external innovation networks with dynamic connections across varied firms expose players to management issues when dealing with multifaceted demand from counterparts [85,120]. In addition, organizations with tight ties to innovation-relevant stakeholders are in a better position to receive and integrate new information [121,122]. External networking for facilitating internal processes of innovation in organizations provides a feasible response to entrepreneurial challenges [123–126]. In addition, information streams obtained from networks enable businesses to increase their base of knowledge [127–129]. Some authors analyzed the possible performance implications of enterprises cooperating to access external sources of resources and capabilities [130–134]. Thus, the business's link to important entrepreneurial networks enables it to leverage the knowledge possessed by networked stakeholders and make it accessible to the firm [135].

Based on the above, organizations may increase their learning capacity via the experience effect, as the company continuously interacts with and learns from its stakeholders; in such instances, the firm is better positioned to integrate information stored across the organization in an iterative cycle [45,53,108]. Learning processes derived from interaction with external agents encourage the open exchange of knowledge assets across the boundaries of the organization under certain conditions and, consequently, leverage on the firm's stakeholders' resources and expertise [110,133,135]. High levels of stakeholder involvement enable workers to undertake search behaviors in order to execute their duties with expertise and to enhance organizational learning [32,84]. According to Yström et al. [122], the strategic goal of network members shifts from minimizing transaction costs to extending their internal knowledge bases when learning networks are built for knowledge acquisition and creation. Learning capacity may have a favorable influence on companies' adaptability to the context's dynamism, making it simpler for businesses to enhance their knowledge base and apply it to the creation of innovations [126,136]. The idea of organizational learning capacity in interorganizational environments encompasses organizations' efficient use of environmental information [137,138]. In this context, entrepreneurial orientation helps organizations to emphasize the significance of fresh information, so motivating the whole company to exert greater effort on capitalizing on all available knowledge [34].

It is feasible to overcome the barriers connected with innovation activities via the study of new ideas and the search for new methods [139]. Then, learning capacity may enable businesses to capitalize on their entrepreneurial mindset to improve the performance of their entrepreneurial endeavors [45,104,113]. Due to a propensity for risk-taking and a desire to be the first to act, entrepreneurially minded businesses are eager to engage in new ventures for their value-creation potential [117]. Thus, entrepreneurial orientation immerses a business in uncertain conditions, making it more likely to depend on external expertise [34]. Under these circumstances, organizations with a more entrepreneurial orientation will be more proactive in combining underused knowledge and deploying newly acquired knowledge to overcome challenges and enhance their performance in many sectors [36,139]. Then, it is hypothesized that there is a double mediation of entrepreneurial

networks and learning capacity in the relationship between entrepreneurial orientation and innovation capacity. The nomogram of the model is showed in Figure 1.



H1 = a3: Entrepreneurial orientation → Innovation capacity.
H2 = a1 × b1: Entrepreneurial orientation → Entrepreneurial networks → Innovation capacity.
H3 = a2 × c1: Entrepreneurial orientation → Learning capacity → Innovation capacity.
H4 = a1 × b2 × c1: Entrepreneurial orientation → Entrepreneurial networks → Learning capacity → Innovation capacity.

Figure 1. Nomogram of the proposed model.

Hypothesis 4 (+). *There is a double mediation of the entrepreneurial networks and learning capacity in the relationship between companies' entrepreneurial orientation and their innovation capacity.*

3. Methodology

3.1. Population and Representative Sample

The population under consideration comprises Spanish firms functioning in the electricity supply sector. According to the SABI database, there were 13,339 companies operating in Spain in 2019. The sample consists of 197 active Spanish firms. In 2019, although employing just 2% of the total workforce in Spain, this industry provided 13.8% of the gross added value and 9.4% of the industrial production, making it the second largest sector. Furthermore, this industry had the greatest employee productivity (466,500 euros on average).

3.2. Data Collecting, Variable Measurement, and Analysis Technique

Data were collected through the elaboration of a questionnaire composed of validated scales, and its subsequent distribution to the chief executive officer of all the companies in the population. After assessing the statistical validity of the completed surveys and eliminating those judged invalid (due to a significant quantity of lost data, patterns of response, or single-value answers), a total of 197 valid responses were collected from companies throughout the national territory. This sample represents a similar distribution to that of the population. Non-response bias has been assessed by comparing the responses of the first and last waves. Hair et al. [140] demonstrate via their "minimum R^2" method that a model with a minimum R^2 value of 0.5 and a maximum of three predictors, as is the case of the model of this paper, needs a minimum sample size of 38 occurrences. Therefore, the minimum sample size required is far exceeded. Hereunder, the variables involved in this study are explained.

Entrepreneurial orientation (independent variable): This variable is measured using a 7-point Likert scale and 18 items based on the following 5 dimensions: proactiveness, risk-taking, innovation, autonomy, and competitive aggressiveness [48,54,58,59].

Entrepreneurial networks (mediating variable): Using a 7-point Likert scale, this variable was built based on the study of Parra-Requena et al. [141] and has 18 components.

Learning capacity (mediating variable): Based on the work of Flatten et al. [142], 14 questions have been constructed to measure this variable. Like the other criteria, a 7-point Likert scale was used.

Innovation capacity (dependent variable): This was measured using a 13-item and 7-point Likert scale, based on the research of Prajogo and Ahmed [143] and Škerlavaj et al. [144].

Age (control variable): This variable was assessed based on the passage of time between the dates of the firms' founding and 2019.

Size (control variable): This variable was based on the number of workers employed by the selected companies during the 2019 fiscal year.

To examine the hypotheses, the multivariate second-generation partial least squares methodology, PLS-SEM, was used. Numerous academics in the area of strategic company management have centered their attention on this method [145]. In this case, SmartPLS version 3.9 was used. Due to the latent nature of the variables evaluated in the social sciences, Hair et al. [146] assert that this technique is suitable for predictive analytics, especially in the social sciences.

4. Results

The model under investigation comprises multiple components. These are composed of several interconnected elements that may be evaluated as a single theoretical concept [147]. A preliminary analysis should be performed to get the scores of the first-order latent variables, which will be used to model the second-order constructs in subsequent research [148,149]. Standard in social science research, the two-stage technique permits the second-order construct to be endogenously produced inside the structural model [146,150,151]. Standardized Root Mean Square Residual score of 0.065 > 0.08 for the global model indicates a reasonable match [152].

The construct reliability and validity were measured using Dijkstra-rho Henseler's (ρA), which is a trusted method for reliability and validity measurements [146,153]. According to these authors, it is used to test internal consistency, whilst external loads (λ) and Average Variance Extracted are used to establish convergent validity. Results are considerably larger than the stated minimal criterion of 0.7, 0.708, and 0.5, respectively, for these criteria [146,154,155], as showed in Tables 1–3.

Table 1. Internal consistency.

	Cronbach's Alpha	rho_A	C.R.	AVE
E.N.	0.868	0.871	0.919	0.791
E.O.	0.853	0.854	0.895	0.63
I.C.	0.849	0.852	0.898	0.689
L.C.	0.819	0.833	0.88	0.648

Source: Our own elaboration. Note: E.N.: Entrepreneurial networks; E.O.: Entrepreneurial orientation; I.C.: Innovation capacity; L.C.: Learning capacity; C.R.: Composite reliability.

After confirming construct reliability and validity, it is important to determine whether the requirements are met through the process of discriminant validity, which demonstrates that the items of a variable measure it more than any other variable. They have been assessed following the criteria established by Henseler et al. [153]. According to Kline [156], the HTMT ratio must be smaller than 0.85.

Table 2. Convergent validity.

External Loads	E.N.	E.O.	I.C.	L.C.
Autonomy		0.777		
Innovation efforts		0.764		
Proactivity		0.832		
Competitive aggressiveness		0.761		
Risk taking		0.832		
AC acquisition			0.745	
AC assimilation			0.725	
AC transformation			0.759	
AC exploitation			0.787	
Structural E.N.	0.884			
Relational E.N.	0.871			
Cognitive E.N.	0.914			
IC management			0.816	
IC marketing			0.786	
IC process			0.860	
IC product			0.856	
VIF	I.C.	L.C.		
E.N.	2.472	1.863		
E.O.	2.080	1.863		
I.C.				
L.C.	2.139			
Age		1.021		
Size		1.050		

Source: Our own elaboration. Note: E.N.: Entrepreneurial networks; E.O.: Entrepreneurial orientation; I.C.: Innovation capacity; L.C.: Learning capacity.

Table 3. Discriminant validity.

Fornell-Larcker	E.N.	E.O.	I.C.	L.C.
E.N.	0.890			
E.O.	0.681	0.794		
I.C.	0.672	0.592	0.830	
L.C.	0.693	0.629	0.640	0.805
HTMT	**E.N.**	**E.O.**	**I.C.**	**L.C.**
E.N.				
E.O.	0.785			
I.C.	0.781	0.690		
L.C.	0.809	0.748	0.758	

Source: Our own elaboration. Note: E.N.: Entrepreneurial networks; E.O.: Entrepreneurial orientation; I.C.: Innovation capacity; L.C.: Learning capacity.

Having verified that the requirements for the global and measurement models have been met, the structural model is assessed. This enables us to identify the model's predictive potential and the nature of the model's various latent variables' interrelationships, so evaluating the hypotheses presented inside the theoretical framework. The assessment of the structural model is conducted in accordance with Hair et al. [146,157]. In the first stage, the degree of collinearity between the predicted constructs is evaluated, confirming that the VIF values are significantly below 3 [158].

In Table 4, it can be observed that entrepreneurial orientation has a statistically significant and positive influence on the innovation capacity of firms [0.150. $p = 0.029$]. Moreover, as showed in Table 5, entrepreneurial networks and learning capacity have a mediation effect on this relationship [0.217, $p = 0.000$; 0.092, $p = 0.007$], respectively. In addition, they exert a double mediation effect [0.105. $p = 0.000$], such that the capability of firms to successfully connect with valuable entrepreneurial networks, learn from them, and

effectively apply this knowledge are recognized to be crucial elements for enhancing the innovation capacity of the firms.

Table 4. Summary of direct effects.

Structural Path	Coef. (β)	Standard Deviation	*p*-Values	95% CI	Results
E.N. -> I.C.	0.319 **	0.079	0.000	[0.166–0.477] **	
E.N. -> L.C.	0.493 **	0.069	0.000	[0.359–0.626] **	
E.O. -> E.N.	0.681 **	0.046	0.000	[0.581–0.762] **	
E.O. -> I.C.	0.150 *	0.068	0.029	[0.017–0.287] *	H1 supported
E.O. -> L.C.	0.293 *	0.075	0.000	[0.136–0.438] **	
L.C. -> I.C.	0.313 **	0.083	0.000	[0.142–0.461] **	

Source: Our own elaboration. Note: Coef.: Coefficient; S.D.: Standard deviation; C.I.: Confidence interval; E.N.: Entrepreneurial networks; I.C.: Innovation capacity; E.O.: Entrepreneurial orientation; L.C.: Learning capacity; ** Statistically significant at 1%; * Statistically significant at 5%.

Table 5. Summary of indirect effects.

Total Effect of E.O. on I.C.		Direct Effect of E.O. on I.C.		Indirect Effect of E.O. on I.C.			Conclusion
Coef. (β)	T Value	Coef. (β)	T Value	Point Estimated		C.I.. 95%.	
0.564 **	9.924	0.150 *	2.190	Total	0.414		
				H2 = $a_1 \times b_1$	0.217 **	[0.115–0.330]	H2 supported
				H3 = $a_2 \times c_1$	0.092 **	[0.031–0.164]	H3 supported
				H4 = $a_1 \times b_2 \times c_1$	0.105 **	[0.048–0.163]	H4 supported

Source: Our own elaboration. Note: Coef.: Coefficient; C.I.: Confidence interval; E.O.: Entrepreneurial orientation; I.C.: Innovation capacity; ** Statistically significant at 1%; * Statistically significant at 5%.

In Figure 2, the path coefficients integrated in the nomogram of the model are shown. The suggested model explains 46.3%, 52.6%, and 55.7% of the variation of the entrepreneurial networks, and learning and innovation capacity variables, respectively.

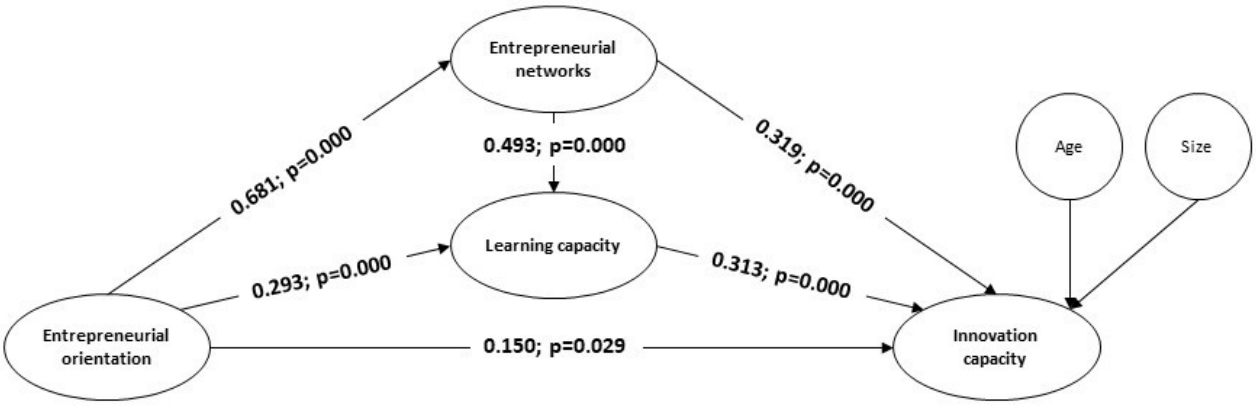


Figure 2. Path coefficients.

Furthermore, the Q^2 values for the variable's entrepreneurial networks, learning capacity, and innovation capacity are 0.392, 0.351, and 0.303, respectively, indicating that the model has a moderate predictive relevance on these variables [157]. Thus, the four hypotheses proposed are accepted.

5. Discussion and Conclusions

The results of this research show that entrepreneurial orientation has a direct positive and significant influence on firms' innovation capacity (Hypothesis 1), as well as the existence of an indirect effect through the mediation of entrepreneurial networks (Hypothesis 2) and the learning capacity of firms (Hypothesis 3). In this regard, it is shown that the mediating effect of entrepreneurial networks is substantially higher than that of learning capacity.

Then, entrepreneurial attitude seems to be a major component in enhancing the innovation capacity of organizations, but entrepreneurial networks and a strong capacity for learning are required to successfully harness all the valuable resources within the firm's reach for this purpose, as a double mediation effect of these variables in the established relationship has been revealed (Hypothesis 4). Considering the most recent data, the results indicate that the research is applicable to both managers and academics.

Regarding the theoretical implications, this research offers new insights into the conception of entrepreneurial orientation as an important organizational resource for innovation, competitiveness, and the sustainable creation of value for society as a whole. Improving sustainability outcomes involves profound changes in organizations, and these changes are only possible through learning and innovation, as well as through collaborative processes carried out with stakeholders of great value to the company [18,20,159]. Learning capacity is the driving force behind internally directed attempts to make complementary organizational decisions that encourage an entrepreneurial behavior pattern. Importantly, our theory lets academics interpret the link between entrepreneurial attitude and innovation capability via the resource- and knowledge-based theoretical lenses. In this manner, businesses may use their entrepreneurial orientation to boost their innovation potential by utilizing their entrepreneurial networks and learning capacity to leverage the environmental knowledge. The conclusion is that it is not just the firm's aptitude, evaluated in terms of its resources and skills, but also its attitude toward its stakeholders that determines its success. It has been experimentally shown that the entrepreneurial orientation of a company influences its network development, that is, with external sources of valuable resources, as well as its own learning ability to capitalize on the external information obtained via these networks. Then, entrepreneurial orientation is necessary for the formation of entrepreneurial networks of great value, from which firms may access resources, particularly expertise, to boost their innovation capacity. In addition, the data revealed that entrepreneurial networks constitute the most important link between the entrepreneurial approach and the innovative capacity of businesses. In the current context, one of the priorities of innovation is to improve sustainability, seeking to maximize the creation of value for society and to minimize the environmental impact of the solutions developed [160–162]. Thus, this research provides a better understanding of the synergistic relationship between entrepreneurial orientation, the development of networks composed of valuable stakeholders for firms, and internal learning capabilities for the achievement of better innovation outcomes, which result in new, more sustainable products, processes, and organizations with higher value-creating capabilities.

In connection with the managerial implications, business owners and executives must consider that high levels of learning capacity enable firms to better use their entrepreneurial orientation in order to boost their innovation capacity. Companies that operate entrepreneurially but fail to create important stakeholder networks probably would see a drop in performance, at least in relative terms. Entrepreneurial attitude jeopardizes the durability of a company's network linkages via its inherent dynamic and change [4]. Therefore, stakeholder involvement has been highlighted to examine the application of insights from stakeholder theory to the issue at hand. Entrepreneurial orientation allows firms to pursue new business opportunities actively and persistently, with entrepreneurial networks and learning capacity serving as the conduits through which the benefits of entrepreneurial orientation manifest as superior innovation capacity. In addition, it was determined that enterprises' learning capacity is enhanced when entrepreneurial networks are well developed and fully exploited. The knowledge gained by entrepreneurs via their social networks aids businesses in acquiring crucial resources for enhancing their innovative potential.

Therefore, rather than engaging in heated rivalry, which might eventually result in the collapse of certain businesses, companies should focus on building their networks and cooperating to form win-win cooperation agreements. In this regard, businesses should share information with their stakeholders in order to uncover new possibilities, leverage the

existing possibilities, or create new ones. According to Wales et al. [92], the ability to learn has been recognized as a key factor in the development of competitive advantages; therefore, our findings show how firms can strengthen the returns from their entrepreneurial orientation and networks to increase their innovation capacity. Thus, managers must recognize that a company's attitude toward difficulties and the environment has a direct bearing on the growth of its network of connections and internal capabilities, particularly in terms of learning and innovation. Therefore, they should engage time and resources in fostering an entrepreneurial mindset that not only enables them to exploit possibilities in the environment, but also generates new prospects to produce value. Recent demands for rigorous mediation studies to increase understanding in the field of entrepreneurial orientation have been heard, with efforts concentrated on the entrepreneurial networks and learning capacity variables [12]. A deeper comprehension of the performance implications of entrepreneurial orientation requires continued focus on mediating mechanisms, as well as future research in this area [1,31]. It is plausible that the association between entrepreneurial orientation and innovation capacity is mediated by both learning-related and non-learning-related elements [92,163,164]. Then, to engage in knowledge transfer with stakeholders, companies would require a high external learning capacity in addition to other relevant competencies.

The findings add to the controversy surrounding the relationship between entrepreneurial orientation and innovation capacity. Contextual variables such as industry circumstances and country culture may potentially impact the relationships analyzed in our study approach. It is possible, for instance, that the interorganizational relationships between firms and their stakeholders are influenced by economic, socio-cultural, institutional, or industrial factors in ways that were beyond the scope of the preceding research. Notably, Martens et al. [2] have recently identified contexts as a vital area of research for the advancement of entrepreneurial research. In this aspect, this research has several limitations. Although the entrepreneurial network of firms has been considered, there could be other factors of the context in which firms are located that may have an impact on the entrepreneurial orientation of firms, as such as the existence of specialized institutions or the degree of agglomeration of the sector in the region, among others, which have not been analyzed.

Regarding possible directions for future research, it is then proposed to investigate the effect of the regional context on the entrepreneurial orientation of firms. In addition, it would be of interest to determine the impact of effective cooperation agreements, as opposed to focusing solely on business networks or informal interorganizational relationships. It is also suggested that both the internal and external characteristics of a company must be evaluated concurrently in order to determine the primary sources of innovation for organizations.

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