


Article

Combined Influence of Absorptive Capacity and Corporate Entrepreneurship on Performance

M.^a Magdalena Jiménez-Barrionuevo ^{*}, Luis M. Molina  and Víctor J. García-Morales

Department of Management, University of Granada, 18071 Granada, Spain; lmolina@ugr.es (L.M.M.); victorj@ugr.es (V.J.G.-M.)

^{*} Correspondence: marilena@ugr.es

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Abstract: Drawing on a dynamic capabilities perspective and a resource-based view, this article analyzes the relationship between absorptive capacity and corporate entrepreneurship, and their combined effect on organizations' performance. It contributes to the literature by dissociating the dimensions of absorptive capacity (potential and realized) and corporate entrepreneurship (innovativeness, proactiveness, new business venturing, and self-renewal). A quantitative study was performed with data gathered by personal interviews, using a structured questionnaire. The theoretical model was estimated through a structural equation model, using a sample of 168 Spanish firms. The results show that proactiveness positively influences innovativeness and that both proactiveness and innovativeness have a positive influence on potential and realized absorptive capacity. A significant positive relationship also exists between potential and realized absorptive capacity. Furthermore, realized absorptive capacity positively influences new business venturing and self-renewal. Finally, proactiveness and new business venturing directly and positively influence organizational performance, but not innovativeness and self-renewal. The study demonstrates that entrepreneurs must be able to enhance potential and realize absorptive capacities at the same time in order to improve the end performance of their corporate entrepreneurial projects. Both absorptive capacities are strongly related to corporate entrepreneurial activities and have a strong influence on firms' performance.

Keywords: Resource-based view; Dynamic capabilities; Absorptive capacity; Corporate entrepreneurship; Performance

1. Introduction

Knowledge is one of the most valuable resources that firms can possess [1,2], although Grant [1] argues that the critical source of competitive advantage is the integration of knowledge, rather than knowledge in itself. Dynamic capabilities theories, an extension of the resource-based view, indicate that resources and capabilities must be acquired and built over time, with the goal of responding to changes that occur in the environment (e.g., [3]), developing new solutions, and modifying the firm's current organizational capabilities or routines [4]. Within this framework, absorptive capacity is a central capability, as it permits the firm to use knowledge in its environment to improve its performance [5]. Various studies have analyzed the influence of absorptive capacity on organizational variables, including knowledge creation [6] and ambidexterity [7]. As Liu et al. ([8], p. 1788) note, however, "important questions on the mechanisms through which absorptive capacity contributes to business performance remain unanswered". Our study aims to respond to this important research gap.

Corporate entrepreneurship (CE) can also be analyzed through the lens of resources and capabilities [9]. From this perspective, corporate entrepreneurship is defined as a capability of the firm,

composed of a subset of interconnected capabilities or dimensions—proactiveness, innovativeness, self-renewal, and new business venturing—that enable the firm to improve its performance [10,11].

Moreover, both capabilities share a common theoretical origin in research on Schumpeterian economic theory, which examines the role of innovation in economic performance. Both capabilities began to be studied during the same period [12,13], with closely connected subsequent studies [14,15].

Studies within the Research & Development framework have stressed the need to consider the influence of various capabilities on performance together, since it is their complementarity that will enable organizations to develop their business model [16,17]. Although it seems clear that a strong relationship can be established in this respect, we still know very little about this interesting phenomenon and about the way in which potential absorptive capacity and realized absorptive capacity, as well as the four dimensions of corporate entrepreneurship, combine to encourage organizations' performance. The goal of this study is to establish a model that integrates this set of relationships. Thus, it seeks to deepen understanding of both capabilities, but in combination—that is, of the dimensions that compose them and their relationship with organizational performance—in an attempt to capture the nature and functioning of dynamic capabilities [3,18]. This study thus pursues various goals in attempting to respond to the research questions, which, despite their importance, have not received sufficient study. It aims, on the one hand, to advance knowledge of the mechanisms by which absorptive capacity affects firm performance. On the other hand, the study has implications for the literature on corporate entrepreneurship, as it analyzes the mediating role of potential and real absorptive capacity in their relationship to each other on firm performance. Finally, the study provides evidence of the complementarity of capabilities [19], a growing field of knowledge that affirms the necessity of analyzing the interrelations among capabilities to understand their influence on performance (e.g., [20]). Along these lines, this study fills the research gap on the combined influence of absorptive capacity and corporate entrepreneurship on performance, and the importance of developing both capabilities for them to have a significant effect on performance.

To achieve these goals, the rest of the article is structured as follows. First, we review the prior literature on absorptive capacity and corporate entrepreneurship to establish the decomposed relationships between the variables that make up both capabilities and their effect on performance. We then explain the scientific method used in the research and the set of noteworthy results obtained, and synthesize the main conclusions obtained in conclusions and future research.

2. Theoretical Background and Hypotheses

2.1. Absorptive Capacity

The concept of absorptive capacity developed within the framework of dynamic capabilities theory [21]. Dynamic capabilities are defined [22] as:

The firm's ability to integrate, build, and reconfigure internal and external competences to address rapidly changing environments.

The term *absorptive capacity* comes originally from macroeconomics, where it refers to an economy's ability to utilize and absorb external resources and information. The first formal definition of the term applied to organizations comes, however, from Cohen and Levinthal ([13] p, 128): 'a firm's ability to recognize the value of new information, assimilate it, and apply it for commercial purposes'. For Cohen and Levinthal, absorptive capacity is a capacity that firms can develop, which is strategic for innovation and constitutes one of the fundamental learning processes. Although many subsequent studies are grounded in the original definition of the term [23,24], many subsequent studies attempt explicitly to improve this definition [25–27].

To this end, Lane and Lubatkin [28] coined the term *relative absorptive capacity*, and Zahra and George [5] divided absorptive capacity into *potential absorptive capacity* and *realized absorptive capacity*. Lane et al. ([26], p. 856) concluded that,

Absorptive capacity is a firm's ability to utilize externally held knowledge through three sequential processes: (1) recognizing and understanding potentially valuable new knowledge outside the firm through exploratory learning, (2) assimilating valuable new knowledge through transformative learning, and (3) using the assimilated knowledge to create new knowledge and commercial outputs through exploitative learning.

Jansen et al. [29] likewise proposed a linear relationship between acquisition, assimilation, transformation, and exploitation, while Todorova and Durisin ([27] p. 776) critically reexamined the reconceptualization, and interpreted assimilation and transformation as two parallel elements, where absorptive capacity is defined as the firm's ability 'to recognize the value, acquire, transform or assimilate, and exploit knowledge'.

This study considers four phases in the capacity to absorb knowledge: recognition of value (or acquisition), assimilation, transformation, and exploitation. These phases can be classified into two dimensions: realized absorptive capacity and potential absorptive capacity [5]. Potential absorptive capacity—which includes the capacities to recognize value and assimilation of the knowledge—enables the organization to be receptive to external knowledge. Realized absorptive capacity—which includes the other two capabilities, knowledge transformation and knowledge exploitation capability—enables the organization to give commercial utility to the new knowledge acquired. The two capacities perform complementary roles. While potential capacity represents the exploration of external knowledge, realized capacity corresponds to its exploitation.

Aside from the formal definition of the term, we can conclude that absorptive capacity has great utility because it helps to recognize valuable external knowledge and enables its subsequent transfer and efficient exploitation [30]. This capacity is especially relevant when managing the tacit component of knowledge and acquiring external knowledge [31]. Absorptive capacity thus constitutes a set of routines and processes that permit firms to establish knowledge flows to improve their collective capacity to learn and to develop innovative potential, thereby improving performance.

2.2. Corporate Entrepreneurship

The phenomenon of corporate entrepreneurship was first studied formally in the early 1980s. Authors like Miller [32] introduced the concept in research to refer to the development of entrepreneurial activities in already existing firms. Since then, interest in studying this organizational capacity has only grown. The globalization of the market and the high indices of technological change in industries require firms to innovate constantly and improve their flexibility, response capacity, and competitiveness [33]. Many researchers suggest that developing entrepreneurial capability is a great strategy by which firms can acquire such characteristics, that is, a good way to revitalize existing organizations by making them more innovative [10,34].

We must clarify the difference between entrepreneurship and corporate entrepreneurship. [35] gathers all of the terminology used for both concepts. We thus use "entrepreneurship" or "independent entrepreneurship" to describe the entrepreneurial efforts of individuals operating outside the context of an existing organization, and a variety of terms for the entrepreneurial efforts within an existing organization, such as corporate entrepreneurship, corporate venturing, intrapreneuring, internal corporate entrepreneurship, internal entrepreneurship, strategic renewal, and venturing. In this study, we consider entrepreneurship as the broader concept and focus on corporate entrepreneurship as referring specifically to entrepreneurs within existing organizations.

Although the essence of entrepreneurship is innovation, which leads to wealth creation [36] and sustained growth of organizations [32,37], corporate entrepreneurship is a substantially different concept, which spans various phenomena that may or may not be interrelated [10,35,38]. In developing this study, we analyze this line of research in greater depth, taking into account that these factors are innovativeness, proactiveness, new business venturing in an existing firm, and transformation of the firm through self-renewal or reorganization of the main ideas on which it is built. We can thus define corporate entrepreneurship as the process by which an individual or group of individuals, in

association with an existing organization, create a new firm or promote renewal or innovation within this organization [35]. The concept is related to the search for new opportunities and organization of the resources needed to put these opportunities into action.

2.3. Hypotheses: The Relationship between Absorptive Capacity and Corporate Entrepreneurship and its Effects on Performance

Absorptive capacity has a positive effect on the productivity of innovative activities and improves efficiency of the new product development process [13]. At the same time, a firm's absorptive capacity depends on the innovation effort the firm has made in the past [5,13]. Prior research has analyzed the moderating role of absorptive capacity in the relationship between entrepreneurial orientation and firm sales growth [39]. Strategic agility (related to corporate entrepreneurship) is also analyzed for its mediating role in the relationship between absorptive capacity and firm performance [40,41]. This means that there should be a dynamic relationship between knowledge absorptive capacity and the entrepreneurial capability that organizations develop [42], making it crucial to study both capacities in combination to analyze the joint effects they can have on performance. The model includes the relationships between the dimensions of the two variables, and Figure 1 shows their effects on performance.

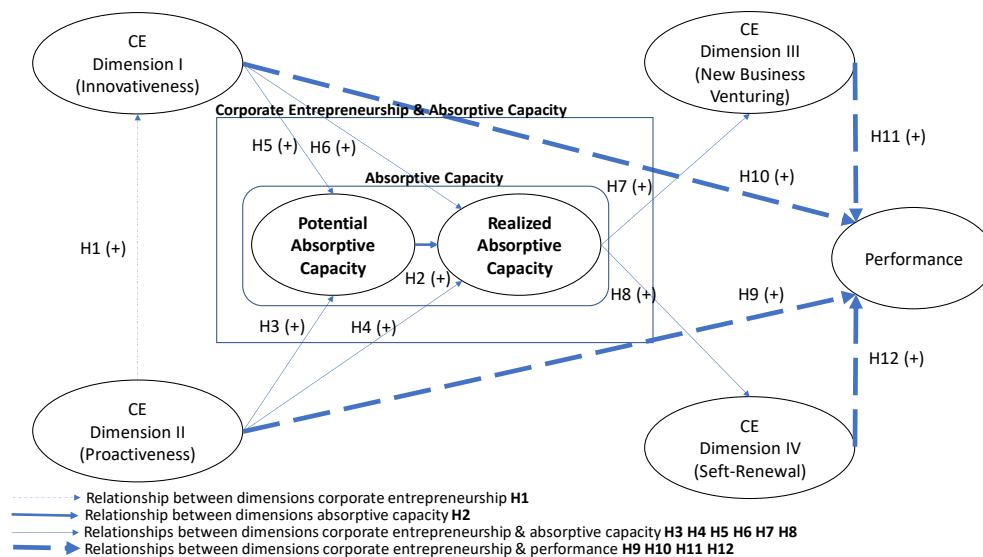


Figure 1. Hypothesized model.

2.3.1. Relationship Between Proactiveness and Innovation

Proactive behavior consists of taking the initiative to try to improve current circumstances or to create other, new circumstances. It involves questioning the status quo more than adapting oneself passively to present conditions [43]. At the organizational level, proactiveness reflects the stance of anticipating acting on future market lacks and needs, thereby creating an advantage over other competitors by being the first to act [37]. It is very important for firms to shift to more proactive and continuous engagement with stakeholders to maintain a competitive edge [44]. The specialized literature often reviews proactiveness as one of the main factors that influences organizational innovation [16,43].

Following Kanter [45], innovation at the individual level is a process that begins with the recognition of a problem and the generation of new or adapted ideas or solutions. The innovative person next seeks support for the idea and attempts to build a coalition that supports them. Finally, these activities produce innovative results—some prototype or model that the organization can use. At each of these stages, it seems clear that the individual's proactive behavior can drive development of the innovation [43].

While reactive behavior leads us to respond to questions formulated by other agents, proactive behavior implies the proposal of new questions, questioning the state of the art to configure it differently. Such action implies innovative strategic thinking, accompanied by change in existing things. Proactivity helps the entrepreneur to face problems, foresee possible consequences, and orient themselves to new challenges and to innovation.

Miller and Friesen [46] distinguish between conservative and entrepreneurial organizations based on the role innovation plays in the formulation of strategies. In conservative organizations, innovation occurs as a response to challenges and threats in the environment—that is, it only occurs where it is necessary. Entrepreneurial organizations, in contrast, accept innovation as a fundamental element of strategy, and not only react to the environment but also modify it, adopting a proactive attitude. Thus, entrepreneurial organizations can aspire to control their environment, not simply to adapt themselves to it. This goal implies great innovative spirit in which one of the main antecedents of innovation is the presence of proactiveness.

Similarly, Aragón-Correa [47] argues that firms with more proactive business strategies (exploratory firms) are more inclined to innovation than firms that develop other types of strategies (defensive firms). Özsomer et al. [48] also demonstrated a strong positive relationship between proactive strategic orientation and orientation to innovation, as they showed how firms who choose an aggressive, competitive strategy that leads them to assume risks are more innovative and differentiate themselves from their competitors, changing their products and production methods.

The most proactive firms are willing to make stronger investments in new technologies, while the least proactive only do so when convinced of the potential benefits of such technologies [16]. Organizations with a high degree of technological proactivity thus possess the flexibility needed to conceptualize and develop innovations within the organization, and can respond more rapidly to changes [49].

Based on the foregoing, we can argue that proactiveness conditions innovation, which leads us to formulate the following hypothesis.

Hypothesis 1: *Proactiveness is positively related to the innovation that occurs within the organization.*

2.3.2. Relationship between Potential Absorptive Capacity and Realized Absorptive Capacity.

The relationship between these two capacities is clearly established in the literature. Although some organizations may focus temporarily on exploitation for commercial use of the knowledge stock they already possess, and devote their efforts to developing realized absorptive capacity, this knowledge will end up being exhausted if it is not renewed periodically. Such organizations must obtain new knowledge from outside the organization if they wish to maintain their rhythm of activity [5].

Although a firm's recognition of the value and acquisition of external knowledge does not guarantee that it will exploit this knowledge, an organization will not be able to exploit knowledge if it cannot first recognize the utility of that knowledge and acquire it. The level of realized absorptive capacity is thus the result of the development of potential absorptive capacity; although the dimensions are independent, both perform complementary functions in absorbing new knowledge that can be obtained from outside the organization. Furthermore, firms that enjoy a high level of potential absorptive capacity cannot always see improved performance [5]. Rather, realized absorptive capacity, or the organization's ability to transform and exploit knowledge, will mediate between the two variables. Without acquisition and assimilation of prior knowledge, subsequent transformation and exploitation of prior knowledge is impossible [50].

In summary, absorptive capacity is like a funnel, in which the potential dimension ensures the novelty and diversity of the knowledge needed, while realized absorptive capacity symbolizes the operativity of the new knowledge [51]. The impact of potential capacity on the already realized capacity

has been empirically demonstrated in other studies (e.g., [29]). All of the foregoing argumentation leads us to articulate the following hypothesis.

Hypothesis 2: *Potential knowledge absorptive capacity is positively related to realized knowledge absorptive capacity.*

2.3.3. Relationship Between the Dimensions of Knowledge Absorptive Capacity and the Dimensions of Corporate Entrepreneurship

Corporate entrepreneurship is a mechanism that facilitates knowledge flows, a channel for transmitting knowledge [52]. From the foregoing analysis, we deduce that some or all dimensions of corporate entrepreneurship cause greater knowledge absorptive capacity. We will thus analyze the relationships between proactiveness and potential and realized absorptive capacity, and between innovation and potential and realized absorptive capacity.

As to the relationship between proactiveness and absorptive capacity, numerous studies have confirmed that knowledge transfers are more effective when organizations are proactive [53]. The organization's strategic stance partially determines its learning capacity [54].

Along with prior knowledge base, the intensity of the effort firms are willing to make is a crucial element for the development of knowledge absorptive capacity [13]. Kim [55] argues that firms who act proactively when facing a crisis (as opposed to those who respond reactively) improve their knowledge absorptive capacity by increasing the intensity of their effort.

Proactive behavior can be classified into two basic categories [43]: actions that could occur in a wide variety of situations, or general proactive behavior; and behaviors that are narrower in scope because they occur in a limited domain, or proactive behavior relative to a context. The general form of proactive behavior includes searching actively for information, identifying improvement opportunities, making suggestions oriented to constructive change, and performing actions to improve the situation. This general proactive behavior, related to the active search for information, can encourage development of the capability to recognize the value of new external information, whereas identification of improvement opportunities enables the information to be assimilated more rapidly. Both aspects affect the potential capacity to absorb knowledge.

The receiver of knowledge must be an active agent, since the success of the transfer depends largely on the actions performed by the organization that receives the knowledge [56]. Based on the foregoing analysis, proactiveness, as a dimension of corporate entrepreneurship, should be an antecedent of potential knowledge absorptive capacity.

In addition to acting on potential dimensions of knowledge absorptive capacity, proactiveness may also affect the realized dimension directly for many reasons. Within the components of general proactive behavior, described by Crant [43], we infer that making suggestions oriented to constructive change can ensure both that the organization will develop the ability to transform the information obtained, and that intention to perform actions that improve the situation will improve the ability to exploit information. Both issues influence realized absorptive capacity.

Proactiveness is also positively and significantly associated with the use of *communication briefings* to distribute strategic information [57]. This insight can clearly be extrapolated to internal transmission of new information obtained from outside the organization, that is, to the third phase of realized absorptive capacity.

Likewise, Griffith et al. [58] developed the idea that organizations or teams that are managed proactively obtain advantages when they share knowledge, since they can thus improve internal knowledge flows. Furthermore, Liao et al. [59] related the firm's proactive strategic orientation not only to the acquisition of knowledge from outside the organization but also to the dissemination of this knowledge inside the organization. We thus formulate the following hypotheses.

Hypothesis 3: *Proactiveness is positively related to potential knowledge absorptive capacity.*

Hypothesis 4: *Proactiveness is positively related to realized knowledge absorptive capacity.*

We define innovation as a company's ability to create new products or modify existing ones in order to find demands for its current and future markets [32]. In addition to the development and improvement of products, innovation involves perfecting production procedures and methods. It is also related to the breadth and frequency with which innovations occur in products and to the tendency to technological leadership [10]. Innovation reflects the tendency to support new ideas, novelty, experimentation, and creative processes, leaving aside previously established practices and technologies [37].

Research and development (R&D) activities not only generate innovations but also increase the firm's ability to identify, assimilate, and exploit the knowledge created outside the organization [12,13]. This means that the greater the R&D effort, the greater the knowledge absorptive capacity. Furthermore, absorptive capacity is easier to improve if the firm already has a high level of absorptive capacity, indicating that the process is path-dependent [60], and thus requiring R&D investment to be continuous and sustained.

Innovation refers to the production, adoption, and implementation of useful ideas, and includes the adaptation of products and processes from outside the organization. Potential absorptive capacity, in contrast, is the firm's ability to acquire and assimilate new knowledge also proceeding from outside the organization [5]. We can expect an increase in novel ideas from outside the firm to develop all of its information acquisition capacity [61], as well as all of its capacity to assimilate this information to internalize the innovations [62].

According to the theory of dynamic capabilities, a firm's ability to compete over time rests on its ability to integrate and build its current competences, as well as simultaneously to develop fundamentally new capabilities [22]. We can expect organizations that develop their corporate entrepreneurship to undertake innovations, forcing them to obtain new knowledge from outside the organization and ultimately to develop their potential absorptive capacity. To develop new products and services, that is, to improve innovation capacity, requires integrating knowledge from different fields—this is one of the explanations most often used to justify why organizations transfer their knowledge in strategic alliances [28]. All of the foregoing analysis leads us to construct the following hypotheses:

Hypothesis 5: *Innovation is positively related to potential knowledge absorptive capacity.*

Hypothesis 6: *Innovation is positively related to realized knowledge absorptive capacity.*

New business creation refers to the search for and introduction of new business, related or unrelated to the organization's current products or markets [10]. Business expansion is closely associated with the processes by which knowledge is acquired and applied. The new knowledge acquired will be commercialized by transforming it into new products, processes, or organizations [52]. Specialized researchers in this area thus widely accept the view that knowledge absorptive capacity is one of the most effective paths for strategic renewal and business creation.

On the individual level, we can confirm that employees of firms who seek to develop corporate entrepreneurship must develop specific individual competences that permit them to integrate existing knowledge with new, and thus to recognize, evaluate, and obtain entrepreneurial opportunities. At the organizational level, organizational learning improves the firm's ability to recognize opportunities and exploit them effectively in the search for new business [63]—in other words, corporate entrepreneurship involves organizational learning [64]. At both levels, the successful recognition of opportunities depends on the capability to learn, and we expect knowledge absorptive capacity to become a fundamental capacity for firms who pursue new business creation.

Berends et al. [65] argued that knowledge management, as they referred to new business creation, should focus on aspects related to experimentation and integration of knowledge, not merely to

collection and coding. For new business creation, therefore, it is essential to have effective ways to obtain new fields of knowledge, and these will be obtained from outside the firm only if it can develop its realized knowledge absorptive capacity. All of the foregoing analysis leads us to articulate the following hypothesis.

Hypothesis 7: *Realized knowledge absorptive capacity is positively related to new business creation.*

Self-renewal consists of the transformation of organizations through the modification of the main ideas on which they rest [35,38,66]. It includes reformulation of strategies, redefinition of business, and reorganization, and it reflects organizational change.

Many authors recognize the importance of generating new knowledge in the process of self-renewal of established organizations (e.g., [64,67]). Organizational renewal requires acquiring and using new knowledge and dispensing with old routines, systems, and structures [68]. Strategic renewal, in contrast, requires a collective change, which involves new activities and new forms of knowledge that will have to be established in practice [69].

Exploiting the knowledge developed through entrepreneurial activities is important for the success of organizational renewal [67]. Examining the nature of knowledge creation and use can thus clarify the intangible benefits of entrepreneurial activities for these organizational renewal processes, and ultimately their relationship with performance [64].

A relationship thus exists between knowledge absorptive capacity and organizational response, understood as the speed and coordination with which actions are implemented and periodically reviewed within the organization [70]. This relationship refers to the actions that organizations perform in response to the relevant information they have acquired, which has subsequently been disseminated throughout the organization and can be assumed to be able to culminate in at least partial self-renewal of these organizations. New knowledge acquisition and its subsequent commercial application can lead to the redefinition of more or less profound aspects of the organization.

Strategic renewal requires that knowledge be encrusted in routines, systems, and structures, so that it can be distributed throughout the organization as a whole [71]. The organizational processes of acquiring, assimilating, and using knowledge thus play a central role in organizational renewal [72].

Strategic renewal should thus focus on the exploration of knowledge and exploitation of existing knowledge [73]. In other words, the ability to assimilate and distribute new knowledge in the organization is of primary importance for strategic renewal [5,74], but external knowledge must be institutionalized effectively for learning to occur at the organizational level [5].

The acquisition and dissemination of new knowledge are more important to strategic renewal than are other issues, such as the firm's strategic orientation or turbulence in the environment [75]. Similarly, a study by Möller and Svahn [76] of business networks argues that network agents' ability to expand their knowledge bases through collaborative learning is an essential aspect of renewal, and that the ability to exploit the knowledge that these agents possess is also important. We can thus conclude that potential absorptive capacity is important as a prior variable and that realized absorptive capacity influences the firm's self-renewal.

In summary, creating new knowledge means creating the firm and all of its members anew, in an uninterrupted process of personal and organizational self-renewal [2]. The foregoing analysis argumentation leads us to formulate the following hypothesis:

Hypothesis 8: *Realized knowledge absorptive capacity is positively related to the firm's self-renewal.*

2.3.4. Relationship Between the Dimensions of Corporate Entrepreneurship and Performance

Numerous scholarly studies have demonstrated the relationship between corporate entrepreneurship and business performance. Zahra and Covin [77] obtained proof of this relationship in a longitudinal study that examined the impact of corporate entrepreneurship on the index of

financial performance, composed of indicators of both the growth and profitability of the firm [66,78], even taking into account future rather than performance [79]. Furthermore, corporate entrepreneurial performance has been shown to be beneficial for both the revitalization and performance of large corporations, as well as for small and medium-sized firms [10].

Following Lumpkin and Dess [37], however, and given the very different nature of the dimensions composing corporate entrepreneurship, it is more appropriate to study the relationship of these dimensions with organizational performance, treating them independently rather than together as a single construct. We thus study the relationships of proactiveness, innovation, new business creation, and self-renewal with organizational performance separately, requiring the formulation of four hypotheses that will be justified in more detail in the following paragraphs.

As to the relationship of proactiveness with organizational performance, publications oriented to professionals argue that managers should be proactive, since proactive behavior is an increasingly important component of organizational performance. Proactiveness is an important element of individual, team, and organizational efficacy, and lack of proactiveness produces errors in identifying or exploiting opportunities that serve to change things [43].

Proactive firms adapt more easily to changes and tendencies in the market, which grants them the opportunity to recognize customers' needs (expressed or latent) and thus to pull ahead of competitors [80]. Since proactive firms are prepared to anticipate actively and to change, they are in a better position to achieve market share and customers by acting quickly when changes occur and mobilizing resources ahead of their rivals [81]. Proactive firms thus have an advantage over competitors with less response capacity.

Numerous studies have related a proactive organizational behavior to an improvement in the organization's performance. For example, Aragón-Correa et al. [82] empirically demonstrated a positive relationship between the choice of a proactive environmental strategy and good financial performance. Also analyzing environmental proactivity, Gonzalez-Benito and González-Benito [83] concluded that the effect of proactiveness on performance is due to the specific resources and distinctive abilities of proactive firms, which permit them to achieve certain advantages. García-Morales et al. [16] reflected the positive influence of technological proactiveness on organizational performance through its effect on innovation and organizational learning.

The results of these and other studies show that proactiveness facilitates exchange, communication, interaction, coordination, and control in the organization. All of these issues tend to benefit entrepreneurial performance, leading us to formulate the following hypothesis.

Hypothesis 9: *Proactiveness is positively related to the firm's performance.*

The relationship between innovation and organizational performance can be summarized in the following claim: "stimulating innovation, expressing the most radical ideas, increasing the number of small-scale experimental projects—this is the path to follow to achieve the revolutionary era" ([84], p. 12). Innovation is performed with the goal of producing some improvement in organizational performance. Many studies thus relate the two variables positively (e.g., [85]). For example, Zahra et al. [79] obtained conclusive empirical results that innovation in products and processes contributes positively to variables such as the firm's profitability (Return on Assets, ROA, and Return on Sales, ROS) and growth in sales.

Although orientation to innovation has positive effects on performance, it is not necessarily linked to obtaining results in the short-term [86]. Some factors of innovation will be positively related to performance and others negatively linked [87]. Organizational inertia provides a powerful explanation for why firms fail to commercialize radical technological innovations, even when they have developed these innovations themselves [88].

Still, other relevant studies have shown the positive impact of innovation on organizational performance. Hughes and Morgan [81] decomposed the five dimensions of entrepreneurial

orientation—risk assumption and orientation to innovation, to proactiveness, to competitive aggressiveness, and to autonomy [37]—and studied the relationship of each dimension with performance. They concluded that only innovation and proactiveness, both dimensions of corporate entrepreneurship, have a positive influence on business performance. Brüderl and Peisendörfer [89] identified innovation as the most important factor for predicting a firm's growth. Based on the foregoing analysis, we formulated the following hypothesis.

Hypothesis 10: *Innovation is positively related to the firm's performance.*

As to the relationship of new business creation with performance and the relationship between the business's self-renewal and performance, we confirm that firms usually develop entrepreneurship to strengthen performance and encourage growth through the creation of new business opportunities and strategic renewal [38].

Regarding new business creation, taking into account today's competitive environments, firms can rarely trust that their current products and services will ensure their future success [32,37]. Firms must thus continually improve their internal processes and ensure the proper development of operations, facing new challenges that, while they may be threatening, generate more opportunities and increase the possibility of obtaining successful results [90]. This is the foundation of new business creation in the theory of corporate entrepreneurship.

The specific ways in which new business creation can contribute to an organization's success are many and varied [91]. New business creation enables firms to obtain greater value from their main competences, strengthening them within product markets related to the firm's current business [92]. It can also be used to create new competences and to extend the firm's reach to opportunities formerly outside its scope of operations. Furthermore, some firms become involved in new business creation as a way of leaving behind businesses in the phase of decline and translating competences to other new business with greater growth opportunities. In general, corporate business creation makes firms obtain greater opportunities to access resources that could provide them with future potential value [93].

In conclusion, activities derived from corporate entrepreneurship result in new business creation that can generate new revenue streams and improve the firm's profitability [38]. Covin and Miles [91], however, explained that corporate business creation will be more productive in the sense of leading to better corporate performance only if it is treated from a strategic point of view. They describe various models in which corporate business creation and business strategy coexist as organizational phenomena that improve performance in all cases. All of the foregoing analysis leads us to formulate the following hypothesis, which will be contrasted empirically.

Hypothesis 11: *New business creation is positively related to the firm's performance.*

According to Andries and Debackere [94], however, both new firms and new business units often need to adapt their initial business model, due fundamentally to the existence of uncertainty and ambiguity in the environment. This need occurs more often in companies with a high technology base, as they typically and more commonly face environments of this kind. The authors collect empirical evidence to demonstrate that much newly created business is later abandoned or requires larger or smaller adaptations. That is, it is difficult for an entrepreneur (or a corporate entrepreneur) to define the business concept completely correctly from the beginning to adapt perfectly to the opportunity it presents. These authors show how subsequent adaptation of the business concept is crucial for the organization's performance.

Stoica and Schindehutte [95] also studied the relationship between entrepreneurial adaptation and the organization's performance, although they focused not on new firms and business units but on firms that have stayed in business for 5–25 years. Their results are also favorable for establishing this relationship. Shu et al. [96] confirmed that strategic renewal fully mediates the relationship between entrepreneurial orientation and a firm's financial performance.

In greater detail, Burström and Wilson [97] explained how each of the different processes of organizational self-renewal—design management, project control, system engineering, time management, and decision making—impacts entrepreneurial performance. The relationship between self-renewal and performance has also been proposed to be negative [98]. This conclusion is justified by establishing that such activities distract the firm from market-related strategic objectives. Similarly, Kearne and Morris [99] have analyzed this relationship even in the public sector, where performance is a multidimensional construct that includes a wide range of measures and multiple stakeholders.

In summary, corporate entrepreneurship also renews the company's capabilities and increases its capacity to acquire and use new competences that improve performance [79]. It is really important to discover new ways of doing things and to unlearn old methods [100]. Strategic renewal has been identified as the essential ingredient for organizational success and longevity [101]. Based on the foregoing evidence, we formulated this final hypothesis.

Hypothesis 12: *Self-renewal is positively related to the firm's performance.*

3. Methods

3.1. Sample

The automotive and chemical sectors are strategic in the Spanish economy. They require a high rate of innovation and R&D, and prior research notes that corporate entrepreneurship and absorptive capacity are important in these areas [28,102]. Some sectors are also highly innovative and proactive. In organizations in these sectors, engineers from different specialties work in areas where intra-entrepreneurial capacity has special strategic importance and they are required to act with entrepreneurial spirit within the company [103]. In addition, the chemical sector is a key sector in the Spanish economy, with a turnover of close to 65,000 million euros and more than 3000 companies, that generated approximately 13% of the gross domestic product and 660,000 jobs in 2017. Spain's automotive sector is the eighth-largest producer of automobiles, and generates more than 300,000 direct jobs and two million indirect jobs [104]. Previous research has also used the automotive sector (e.g., [50,105]) and chemical sector [106] in studies of these variables in Spain. Our study population was composed of Spanish firms chosen from these sectors. Focusing the study on a limited geographical area allowed us to minimize the impact of certain variables on the empirical results when investigating the same political, economic, socio-cultural, legal, or technological area. Analyzing absorptive capacity and corporate entrepreneurship in different sectors also enhanced the generalization of the results [107].

The Amadeus database was selected because it provides standardized and comparable financial information from over 23 million firms in Europe, with data on managers and contacts. The database allowed us to investigate firms with specific profiles and specific sectors. Based on the National Classification of Economic Activities (CNAE), we chose Spanish firms in the chemical industry (CNAE24) and manufacturing of transportation materials (CNAE 34 and 35). We avoided possible duplications due to the inclusion of affiliate firms in the database. The population was 5163 firms.

Prior to the primary data collection, several academics, managers, and consultants from the chemical and automotive sectors who were knowledgeable about these issues reviewed the measurement scales and the previous questionnaire. We then developed a structured questionnaire, including their recommendations, to measure the issues. Chief executive officers (CEOs) were our key informants, as was the case in previous studies on absorptive capacity [16], due to the importance of the CEOs in driving our study variables [108]. We insisted that CEOs who did not know about the variables investigated not answer the questionnaire, which decreased the response rate but increased the reliability and validity of the questionnaires received [109].

A final sample of 964 Spanish firms was selected randomly from the Spanish chemical and automotive sectors and an ordinary mailing sent to each business (sample error 3.47%). To increase the

response rate, we also used a web page created for this study. The total number of completed and valid questionnaires was 168 (17.43% response rate, Table 1).

Table 1. Technical details of the research.

Geographical Allocation	Spain			
	Sector	Chemical	Automotive	Total
Sample size	689	275	964	
Response size (response rate)	121 (17.56%)	47 (17.01%)	168 (17.43%)	
Firm characteristics	Small	Medium	Large	
Number of employees	56.8 %	27.8%	15.4%	
Turnover	56.4%	26.9%	16.7%	
Methodology	Questionnaire			
Respondents	Chief Executive Officer (President or Chief Executive)			
Sample error	3.47%			
Confidence level (for sampling error estimation)	z = 1.96; 95%, p-q = 0.50			

We used several methods to analyze the possibility of non-response bias. Initially, we compared the characteristics of the firms who returned the questionnaire to those of the population, using various characteristics available, such as return on assets, return on equity, return on sales, and sales volume. We did not find statistically significant differences by sector (72.02% chemical sector, 27.98% automotive sector) or company size (56.8% small, 27.8% medium, 15.4% large, measured by number of employees), or between population and sample. The sample was representative, with a sampling error of 3.47%. Second, the survey respondents were divided by response date. The test indicated no significant differences for early and late responders based on the measures used in the research. The chi-square and t-test reflected no significant differences [110]. To reduce possible desirability bias and to increase the response rate, we offered participants the option of receiving the results of the investigation once it was completed, assuring anonymity and use of the data at the aggregate level.

3.2. Measurement Model

All questions in the questionnaire were measured by a seven-point Likert-type scale, in which the respondent demonstrated their degree of agreement or disagreement with each of the statements, thus measuring the direction and intensity of each attitude.

We measured knowledge absorptive capacity by differentiating among the dimensions of acquisition, assimilation, transformation, and exploitation of knowledge to classify the first two and the last two terms and obtain organizations' potential and realized absorptive capacity. To do so, we used the scale proposed by Jiménez-Barrionuevo et al. [25].

For corporate entrepreneurship, since we wished to analyze the four main dimensions of intrapreneurship—innovativeness, proactiveness, new business venturing, and self-renewal—we used and adapted the scale proposed by Antoncic and Hisrich [10], which was constructed taking into account the ENTRESALE and the scale for corporate entrepreneurship [111].

Finally, to evaluate the organization's performance, we followed Murray and Kotabe [112], who distinguished between financial and commercial performance. The former includes economic profitability (ROA), financial profitability (ROE), and sales profitability (profits on sales), and the latter market share and sales growth. Specifically, the scale asks about the performance of most direct competitors and takes the last three years of activity as a reference. Comparing the organization's performance with that of its closest competitors to measure performance is a practice widely used in many studies (e.g., [113]).

3.3. Scale Validity and Reliability

The first step was to analyze the one-dimensionality of all scales, through a confirmatory factor analysis of the model. To do so, we used the LISREL 9.2 software package. After confirming that analysis of the normalities was negative, and that the asymptotic covariance matrix did not converge, we used ordinary least squares (OLS) as the estimation method. The results of this analysis are presented in Table 2. They were calculated for each item. All cases were statistically significant for $p < 0.01$. The individual reliabilities for each item were confirmed by analyzing both the factor loadings ($\lambda > 0.7$) and the R^2 ($R^2 > 0.4$), as recommended in the literature. This procedure required the elimination of several indicators, resulting in the final model shown in Table 2. Items A54, A55, A83, A101, B42, B43, I1, and I2 showed individual reliabilities somewhat lower than the recommended value (0.4), but since the values were very close to the recommended value and since all loadings were considerably higher than 0.5, we decided to maintain them, as eliminating them would not compensate for the loss of information to be derived from them. The analysis shows that the variables measuring the constructs analyzed correctly.

Table 2. Validity and reliability, initial and final models.

Items	Initial Scale		Final Scale		Std. Errors	Composite Reliability/ Extracted Variance
	Loadings (λ) *	Individual Reliability	Loadings (λ) *	Individual Reliability		
Potential absorptive capacity						0.907/0.504
Interaction (A21)	0.74 *** (25.24)	0.54	0.75 *** (23.86)	0.57	0.43	
Trust (A22)	0.81 *** (27.20)	0.65	0.83 *** (25.80)	0.68	0.32	
Respect (A23)	0.80 *** (27.23)	0.64	0.81 *** (25.45)	0.65	0.35	
Friendship (A24)	0.51 *** (18.04)	0.26	Eliminated			
Reciprocity (A25)	0.88 *** (29.44)	0.77	0.85 *** (26.66)	0.73	0.27	
Common language (A51)	0.71 *** (24.58)	0.51	0.71 *** (22.70)	0.50	0.50	
Complementarity (A52)	0.74 *** (25.60)	0.51	0.74 *** (23.66)	0.55	0.45	
Similarity (A53)	0.46 *** (16.32)	0.21	Eliminated			
Cultural compatibility A(54)	0.64 *** (22.35)	0.41	0.62 *** (20.08)	0.38	0.62	
Managerial compatibility (A55)	0.63 *** (21.84)	0.39	0.59 *** (19.32)	0.36	0.65	

Table 2. Cont.

Items	Initial Scale		Final Scale		Std. Errors	Composite Reliability/ Extracted Variance
	Loadings (λ) *	Individual Reliability	Loadings (λ) *	Individual Reliability		
Realized absorptive capacity						0.893/0.546
Communication (A81)	0.53 *** (18.47)	0.28	Eliminated			
Meetings (A82)	0.79 *** (26.15)	0.62	0.80 *** (24.65)	0.63	0.37	
Documents (A83)	0.59 *** (20.19)	0.35	0.59 *** (19.18)	0.35	0.65	
Transmission (A84)	0.77 *** (25.81)	0.60	0.80 *** (24.83)	0.64	0.36	
Time (A85)	0.78 *** (25.82)	0.60	0.78 *** (24.48)	0.61	0.39	
Flows (A86)	0.79 *** (26.18)	0.62	0.80 *** (25.02)	0.64	0.36	
Responsibility (A101)	0.62 *** (21.38)	0.39	0.62 *** (19.98)	0.38	0.62	
Application (A102)	0.79 *** (26.02)	0.62	0.75 *** (23.82)	0.57	0.43	
Proactiveness						0.878/0.591
New products (B11)	0.81 *** (26.96)	0.65	0.79 *** (25.72)	0.63	0.37	
Competitive approach (B12)	0.84 *** (27.67)	0.70	0.82 *** (26.28)	0.67	0.32	
Risk acceptance (B13)	0.68 *** (23.88)	0.46	0.69 *** (23.15)	0.47	0.53	
Daring attitude (B14)	0.73 *** (25.35)	0.54	0.75 *** (24.71)	0.57	0.43	
Proactiveness under uncertainty (B15)	0.77 *** (26.04)	0.59	0.78 *** (25.37)	0.61	0.39	
Innovativeness						0.926/0.611
New products (B31)	0.81 *** (31.48)	0.65	0.82 *** (30.11)	0.68	0.32	
New product pace (B32)	0.81 *** (31.54)	0.66	0.82 *** (29.95)	0.67	0.33	
R&D investment (B33)	0.75 *** (29.35)	0.56	0.77 *** (28.29)	0.59	0.41	
Incremental new products (B34)	0.76 *** (29.94)	0.57	0.76 *** (28.04)	0.57	0.43	
Radical new products (B35)	0.70 *** (27.73)	0.48	0.71 *** (26.70)	0.51	0.49	
New technology investment (B36)	0.74 *** (29.08)	0.55	0.76 *** (28.09)	0.58	0.42	
Own technologies (B37)	0.74 *** (29.01)	0.54	0.76 *** (28.10)	0.58	0.42	
New technology adoption (B38)	0.55 *** (22.34)	0.30	Eliminated			
Technological innovation importance (B39)	0.83 *** (32.39)	0.69	0.84 *** (30.82)	0.71	0.29	

Table 2. Cont.

Items	Initial Scale		Final Scale		Std. Errors	Composite Reliability/ Extracted Variance
	Loadings (λ) *	Individual Reliability	Loadings (λ) *	Individual Reliability		
Self-renewal						0.894/0.550
Mission (B41)	0.75 *** (27.68)	0.56	0.75 *** (26.53)	0.56	0.44	
Business concept (B42)	0.61 *** (23.16)	0.37	0.62 *** (22.88)	0.39	0.61	
Industry redefinition (B43)	0.60 *** (22.99)	0.36	0.61 *** (22.44)	0.37	0.63	
New organization (B44)	0.81 *** (29.56)	0.66	0.81 *** (28.49)	0.66	0.34	
Unit coordination (B45)	0.85 *** (30.45)	0.72	0.84 *** (29.29)	0.71	0.29	
Unit autonomy (B46)	0.78 *** (28.63)	0.61	0.77 *** (27.40)	0.60	0.40	
Flexible organization (B47)	0.75 *** (27.77)	0.57	0.75 *** (26.79)	0.57	0.43	
New business venturing						0.860/0.607
New customers (B51)	0.54 *** (19.61)	0.29	Eliminated			
New business lines (B52)	0.80 *** (26.34)	0.64	0.79 *** (23.68)	0.62	0.38	
Related new business (B53)	0.74 *** (25.16)	0.55	0.73 *** (22.90)	0.54	0.46	
New market niches (B54)	0.78 *** (26.00)	0.61	0.78 *** (23.87)	0.61	0.39	
New business based on innovative products (B55)	0.80 *** (26.49)	0.65	0.81 *** (24.38)	0.66	0.34	
Performance						0.852/0.542
ROA (I1)	0.63 *** (16.74)	0.39	0.62 *** (16.00)	0.38	0.62	
ROE (I2)	0.64 *** (17.29)	0.41	0.61 *** (15.59)	0.37	0.63	
Return on sales (I3)	0.68 *** (18.34)	0.47	0.66 *** (16.60)	0.44	0.56	
Market share (I4)	0.91 *** (24.43)	0.83	0.92 *** (22.89)	0.85	0.15	
Sales increase (I5)	0.79 *** (21.72)	0.62	0.82 *** (20.89)	0.67	0.33	

Notes: (λ) * = Standardized structural coefficient (t-values are shown in parentheses); Significance level *** $p < 0.001$ (two-tailed).

In assessing the measurement model, it is also important to study the composite reliability and variance extracted from each latent variable. The results, presented in Table 2, show that the values of all latent variables were above the acceptable levels, 0.7 for composite reliability. The value of variance extracted was very good, above 0.5 in all cases.

4. Results

The Lisrel program tested the theoretical model proposed (Figure 2). We used a recursive non-saturated model with proactiveness (ξ_1) as the exogenous latent variable; innovativeness (η_1) as

the first-grade endogenous latent variable; and potential absorptive capacity (η_2), realized absorptive capacity (η_3), new business venturing (η_4), self-renewal (η_5), and performance (η_6) as the second-grade endogenous latent variables. Structural equation modeling takes into account variables with multiple indicators, multiple-group comparisons, and errors in measurement. First, we must evaluate fit quality, which measures correspondence between the real or observed input matrix with which the proposed model was predicted. We next study the overall goodness of fit. Table 3 shows all measurements—absolute, incremental, and parsimony fit—of the proposed model.

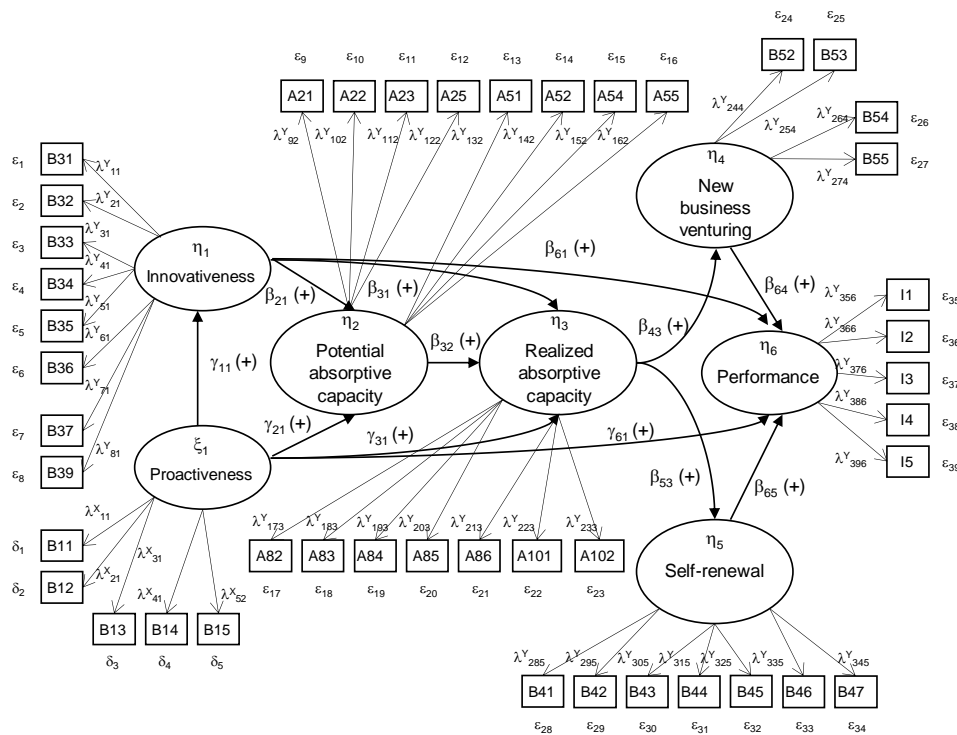


Figure 2. Final structural equation model.

Table 3. Goodness of fit measures, final model.

Scale Values	
Absolute Fit Measures	Final Model
Non-centrality parameter (NCP)	1382.90
Goodness of fit index (GFI)	0.95
Root mean square residual (RMSR)	0.085
Expected cross-validation index (ECVI)	17.66
Incremental fit measures	
Adjusted goodness of fit index (AGFI)	0.94
Normed fit index (NFI)	0.94
Non-normed fit index (NNFI)	0.99
Comparative fit index (CFI)	0.99
Incremental fit index (IFI)	0.99
Relative fit index (RFI)	0.93
Parsimony fit measures	
Normed chi-square	2.55
Parsimony goodness of fit index (PGFI)	0.85
Parsimony normed fit index (PNFI)	0.88
Akaike information criterion (AIC) Model	2472.90

All indicators show very good fit in the final model. First, absolute fit indices, which determine how well the initial model fits the sample data, show that the proposed model has good fit with the data. The chi-square value, the traditional measure for evaluating overall model fit, takes a value of 2272.90 with 890 degrees of freedom—significant, as expected when working with such a large sample. While the chi-squares test is popular as a fit statistic, a number of others indicators are used in practice. To complement this statistic, we therefore used the goodness of fit index (GFI), which analyzes the proportion of variance accounted for by the estimated population covariance. The GFI indicator (0.95) takes a value within the accepted range (above 0.90). We also used other indicators, such as the square root of the difference between the residuals of the sample covariance matrix and the hypothesized covariance model (Standardized Root Mean Residual is 0.08). The model as a whole thus shows acceptable absolute fit indicators for these and other measures (non-centrality parameter (NCP) = 1,382.90; expected cross-validation index (ECVI) = 17.66). Second, we compared the chi-square value to a baseline model, where the null hypothesis is that all variables are uncorrelated. The non-normed fit index (NNFI) indicator (0.99) is an example of such a fit index, as it compares the specified model with a baseline model. Another indicator, the comparative fit index (CFI) (0.99), is based on the non-central distribution. Other incremental fit measures also take values higher than the minimum recommended value of 0.90 (adjusted goodness of fit index (AGFI) = 0.94; normed fit index (NFI) = 0.94; incremental fit index (IFI) = 0.99; relative fit index (RFI) = 0.93), ensuring that fit increase with respect to the null model is highly significant. Finally, parsimony fit indices were calculated by adjusting other fit indices for model complexity. For example, the parsimony normed fit index (PNFI) (0.88) adjusts the NFI for model parsimony. The normed chi-square indicator was 2.55, a value within acceptable range, indicating neither overfit of the data nor poor representation of the information in the correlation matrix. Other examples are the parsimony goodness of fit index (PGFI) (0.85), PNFI (0.88), and AIC (2472.90). Taking all fit measures into account, we conclude that the final model proposed fits the observed data well, providing good representation of the data.

We must now analyze structural model fit to confirm that all estimated parameters are significant and that the structural equations show acceptable reliability coefficients. These results are shown in Table 4.

Table 4. Structural model, reliability of structural equations.

Indep var	Dependent Variables					
	Innov η_1	Pot abs cap η_2	Rea abs cap η_3	New Bus vent η_4	Self-Renew η_5	Perform η_6
Innov η_1		(H5) β_{21} : 0.058 ** (2.72)	(H6) β_{31} : 0.41 *** (11.33)			(H10) β_{61} : 0.036 (0.59)
Proactiv ξ_1	(H1) γ_{11} : 0.69 *** (23.22)	(H3) γ_{21} : 0.40 *** (8.16)	(H4) γ_{31} : 0.34 *** (10.04)			(H9) γ_{61} : 0.56 *** (8.94)
Pot abs cap η_2			(H2) β_{32} : 0.21 *** (7.73)			
Rea abs cap η_3				(H7) β_{43} : 0.82 *** (13.84)	(H8) β_{53} : 0.86 *** (16.16)	
New bus vent η_4						(H11) β_{64} : 0.30*** (4.09)
Self-renew η_5						(H12) β_{65} : −0.32 *** (−4.10)
Reliability (R2)	0.47	0.27	0.67	0.68	0.73	0.38

Notes: H is Hypotheses. t-values in parentheses. Significance level *** $p < 0.001$; ** $p < 0.01$; * $p < 0.1$ (two-tailed).

We observed that the model fits the data well. Regarding the hypotheses tested, we observed that hypothesis H1 was supported, and proactiveness is related to innovativeness ($\gamma_{11} = 0.69$, $p < 0.001$). The results also support H2, providing evidence that potential absorptive capacity is related to realized absorptive capacity and affects it significantly ($\beta_{32} = 0.21$, $p < 0.001$). As to the relationships between the dimensions of corporate entrepreneurship and absorptive capacity, proactiveness affects both potential

absorptive capacity ($\gamma_{21} = 0.40, p < 0.001$) and realized absorptive capacity ($\gamma_{31} = 0.34, p < 0.001$), supporting H3 and H4, respectively. Innovativeness was also related to potential absorptive capacity ($\beta_{21} = 0.058, p < 0.05$) and realized absorptive capacity ($\beta_{31} = 0.41, p < 0.001$), supporting H5 and H6, respectively. In comparing the magnitudes of these effects, we observed that the direct effect of proactiveness on potential absorptive capacity is larger than the effect of innovativeness on potential absorptive capacity. In comparing the magnitudes of these effects, we also observed that the direct effect of innovativeness on realized absorptive capacity is larger than the effect of proactiveness or potential absorptive capacity on realized absorptive capacity. Globally, innovativeness ($R^2 = 0.47$), potential absorptive capacity ($R^2 = 0.27$), and realized absorptive capacity ($R^2 = 0.67$) are well explained by the model. H7 and H8 are also supported, showing a relationship of realized absorptive capacity to new business venturing ($\beta_{43} = 0.82, p < 0.001$) and self-renewal ($\beta_{53} = 0.86, p < 0.001$), respectively. The model provides a good explanation of new business venturing ($R^2 = 0.68$) and self-renewal ($R^2 = 0.73$).

Finally, as to the relationships between the dimensions of corporate entrepreneurship and performance, the results support H9, which reflects the relationship between proactiveness and performance ($\gamma_{61} = 0.56, p < 0.001$); and H11, which asserts a relationship between new business venturing and performance ($\beta_{64} = 0.30, p < 0.001$). The results do not support H10, which indicated the existence of a relationship between innovativeness and performance ($\beta_{61} = 0.036, p > 0.10$). The relationship between self-renewal and performance of H12 is significant but does not have the sign initially predicted ($\beta_{65} = -0.32, p < 0.001$). This result will be analyzed in the discussion. In comparing the magnitudes of these effects, we observed that the direct effect of proactiveness on performance is larger than the effects of the other variables analyzed. Globally, new business venturing ($R^2 = 0.68$), self-renewal ($R^2 = 0.73$), and performance ($R^2 = 0.38$) were also well explained by the model. The R^2 values for all endogenous constructs exceed 10%, implying a satisfactory and substantive model. The results thus generally confirm that absorptive capacity and corporate entrepreneurship are complementary and act together on the firm's performance, supporting the model hypotheses.

5. Conclusions and Future Research

Currently, knowledge absorptive capacity and corporate entrepreneurship are considered dynamic capabilities of great importance. Organizations should manage them from a strategic point of view to achieve a sustainable competitive advantage over time. The value of both capabilities justifies the great development of knowledge absorptive capacity and corporate entrepreneurship in the scholarly literature.

This article shows empirically that knowledge absorptive capacity is related to corporate entrepreneurship and that the two together influence organizational performance. The general principles on which both capacities are founded are similar. Both absorptive capacity and corporate entrepreneurship fulfill the conditions grounding the resources and capabilities that firms possess to obtain sustainable competitive advantage over time, which are: heterogeneity, ex-post barriers to the competition, imperfect mobility, and ex-ante limits to the competition [114]. Both capabilities are thus strategic variables of business management. The similarities of the basic principles that sustain both capabilities enabled us to establish a series of hypotheses that relate the dimensions of the two capabilities to each other and to organizational performance. We thus found sufficient prior scholarly literature to support and ground development of this working model.

5.1. Theoretical and Managerial Implications

This study has significant implications for various areas of knowledge in the field of management. The results are relevant for the theory of resources and capabilities, especially its dynamic capabilities version. The results indicate that, when analyzing the importance of the different capabilities to the firm's performance, analyzing them individually can lead to errors. This study analyzes how performance is affected by the joint action of the capabilities of knowledge absorptive and corporate entrepreneurship. The relationship between the two explains how performance is affected.

This paper's main results have profound implications for its research framework, which is grounded in resources and capabilities theory and undergirds the development of this paper's hypotheses. The results highlight the relevance of analyzing the relationships between different capabilities in order to study their relationship with performance. The theory of resources and capabilities postulates that resources and capabilities are valuable, rare, inimitable, and non-substitutable, and thus have the capability to achieve competitive advantages, but the results of this study show that we cannot analyze these capabilities one by one if we wish to determine their real influence. Rather, we must analyze the specific firm's bundle of resources and capabilities in order to study how this bundle affects performance. This finding has very important implications for future studies that use the resources and capabilities research framework as a theoretical foundation for studying organizations' performance.

Furthermore, these results are relevant to the discussion about firms that focus on the exploitation and exploration of knowledge [73,115]. This study shows clearly, on the one hand, that orientation to innovation, proactiveness, and potential knowledge absorptive capacity—which are all related to exploration—are antecedents of knowledge exploitation, which focuses on realized knowledge absorptive capacity, self-renewal, and new business creation. These results are thus significant to the literature on ambidextrous organizations [116].

In the field of knowledge management, the results of this study are relevant because they contribute new evidence on the importance of absorptive capacity to organizational performance. Specifically, they highlight that this performance can be mediated by other capabilities. In our study, absorptive capacity is not related to performance directly, but rather indirectly through the influence of new business creation and self-renewal. That the relationship between self-renewal and performance is negative tells us that the final use of knowledge (greater influence of the firm on new business creation or self-renewal) can influence the final sign that absorptive capacity takes in influencing performance in the short term. This result is very significant, as it provides information on the real complexity of the relationship between absorptive capacity and performance, a topic that has not been tackled in sufficient depth in this literature.

The results of this study have several implications for corporate entrepreneurship. First, they contribute new evidence on the importance of differentiating the different constructs that constitute corporate entrepreneurship, as these do not influence performance with equal importance. Second, it is important that the relationship between innovativeness and proactivity does not directly influence new business creation and self-renewal, but is mediated by the firm's investment in improving its potential and realized knowledge absorptive capacities. This leads us to suggest that the relationship between the different dimensions of corporate entrepreneurship is more complex than that analyzed in previous studies, opening a line of research in this direction.

However, we were not able to verify the direct relationship between innovation and organizational performance, as the relationship did not turn out to be significant. As mentioned, some authors have partially explained this result (e.g., [87,88]). The justification of these results can thus be found in the fact that the timeframe considered in this study (the last three years of commercial activity) may be insufficient for the effects of innovation to become visible in the organization's performance. Another possible justification comes from researchers who argued that innovation (or some of its dimensions) can cause negative effects on performance, especially in the short term. To undertake innovations, the firm must have sufficient resources, so that it can absorb possible errors and the costs, sometimes high, that result from them; in the opposite case, the firm may see its performance decrease, or at least not detect a favorable effect on performance. In conclusion, we cannot confirm that firms that become involved in a process of proposing, adopting, and implementing new ideas—generated internally or taken from outside the organization, related to new products, services, processes, or technologies—will always see their business performance improve.

On the other hand, we found a negative and direct relationship between the organization's self-renewal and business performance. The results obtained show, for a significance level of

99.9 percent and a standardized structural coefficient of -0.32 , that changes in the business concept or in the main ideas on which the entire organization is grounded have a negative influence on business performance. This finding supports conclusions obtained by some authors (e.g., [98]). The scholarly literature provides three possible justifications of this result. The first refers to the time frame, as a sufficient period of time must pass for change to affect performance. The second involves the resistance to change that can occur, causing inefficiencies that result in negative performance. The third refers to the costs involved in fitting the organization's capacities to the changes that occur outside it. Resistance to change in organizations causes self-renewal to affect business performance negatively over a period of time like that considered in this study (three years). We believe, however, that this situation would change in later years. Thus, the organization must manage change actively, addressing the people affected and involved in the renewal of the organization to avoid their resistance. Subsequent studies could shed light on this issue.

Detailed study of the dimensions that compose corporate entrepreneurship demonstrates that the variables determining business performance directly are proactiveness and new business creation. Innovation does not show any influence on performance, and the organization's self-renewal influences performance negatively.

With respect to managerial implications, practitioners should consider these results to improve their managerial practices. Firms make great efforts to improve their capability to manage their knowledge. Substantial investments are made to improve the capability to manage both tacit and explicit knowledge [2]. Firms' efforts to gain the ability to exploit the knowledge in their business ecosystems has also led these firms to make large investments in improving their absorptive capacity, establishing mechanisms that enable them to remain in contact with relevant advances that occur beyond their organizational boundaries and to exploit these advances to improve their performance [117].

But the results of this study inform us that firms who genuinely wish their efforts to have a real impact on the firm's performance must not forget to invest simultaneously in improving their corporate intrapreneurship capabilities [18]. By simultaneously improving both their absorptive capacity and their intrapreneurial capability, firms will be able to take real advantage of the investments made in improving both business capabilities.

5.2. Limitations and Future Studies

As to future lines of research, we must clarify that this article focuses on a specific area of the stream of thinking on business management, in which we established some clearly defined objectives. Our study thus constitutes a starting point for the development of future research, focusing on areas not yet explored. Although both knowledge absorptive capacity and entrepreneurial capability are analyzed at the organizational level in this study, we know that they occur at other levels, such as individual, group, or interorganizational levels. Future research could replicate this study, changing the unit of analysis to establish comparisons in different areas.

Likewise, our study focused on analyzing the study variables using information provided by top management of the organizations in our sample. To improve the validity of the conclusions, it would be interesting to perform a similar study with information obtained from lower managerial levels in the organization. A study with similar characteristics that includes firms in an international area and extends the study to other sectors is also needed.

Since both knowledge absorptive capacity and corporate entrepreneurial capacity are dynamic capacities and thus path-dependent, it would be interesting to develop a future study that uses longitudinal research methods to investigate in greater depth the rhythm and path of change that occurs in both variables.

Future studies could also incorporate other variables that are antecedents of knowledge absorptive capacity, both internal, such as the structural configuration of the organization, and external, such as the external environment of knowledge or position in knowledge networks. We also believe it would be interesting to include other internal and external variables as antecedents of corporate

entrepreneurship, either those cited above for absorptive capacity or others, such as management support, recognition, and rewards, or industry life cycle. This option would broaden the potential lines of research tremendously, given the wide variety of new relationships that can be established.

This study analyzed the effects of the variables on organizational performance. It measured performance using a scale that considered financial performance (economic profitability, financial profitability, and sales profitability) and commercial performance (market share and sales growth). Future studies could consider other effects on performance, such as customer satisfaction, employee satisfaction, or product quality.

The results of this study do not demonstrate the presence of a positive relationship between innovation and business performance, as the significance levels were too low. Furthermore, although we originally proposed a positive relationship between self-renewal, as a dimension of corporate entrepreneurship, and business performance, the empirical results show a negative relationship between the two variables. Although we believe, as mentioned above, that the theory of organizational change justifies this result, new studies must be performed to clarify the issue, analyzing a research period longer than three years and introducing variables that measure resistance to change and fit of the capabilities to achieve more solid conclusions on these relationships.

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