



Performance implications of organizational ambidexterity versus specialization in exploitation or exploration: The role of absorptive capacity

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ABSTRACT

Although ambidexterity is usually cited as a mean to achieve above average sustainable performance, theory indicates that due to trade-offs between exploitation and exploration at an organizational level, sometimes ambidexterity may be beyond reach, or ineffective, making specialization in exploitation or exploration, the more advisable course of action. However, there is no empirical research comparing the performance implications of ambidexterity and specialization in exploitation- or exploration-based types of innovations and the factors that may make each strategy more favorable. To fill this gap, we empirically test that absorptive capacity moderates the effects of ambidexterity and specialization in exploitation or exploration on firm performance. Using a sample of 281 manufacturing companies, results indicate that ambidexterity has a greater effect on performance at high levels of absorptive capacity, while specialization in exploitation or exploration is more effective at low levels of absorptive capacity.

1. Introduction

Firms must choose the most suitable strategy to innovate and reach competitive advantage. According to the type of knowledge applied to the innovation, exploiting current knowledge (exploitation) and/or exploring new one (exploration) confronts the firm to a tension from a learning perspective (Ricciardi, Zardini, & Rossignoli, 2016) resulting in the need of managing the different ways of combining them. One way of combining exploitation and exploration consists on simultaneously engaging in both, which is known as organizational ambidexterity. It is usually an alternative that is recommended to improve firm performance (O'Reilly & Tushman, 2013; Raisch & Birkinshaw, 2008). However, as yet, there is little empirical support for the relationship between organizational ambidexterity and performance (Raisch & Birkinshaw, 2008), it lacks theoretical backing (Simsek, 2009) and it is inconclusive (Junni, Sarala, Taras, & Tarba, 2013). Literature also indicates that there are trade-offs between exploitation and exploration because of the size and diversity of the resources needed to engage simultaneously in the two types of activities (March, 1991), the organizational learning routines, and the distribution of power, which tends to favor one type of innovation over the other (Levinthal & March, 1993). This makes opting in favor of a specialized innovation strategy, focusing on either exploitation or exploration, a

viable innovation strategy. Thus, specialization in exploitation (or in exploration) describes the specific combination consisting on the use of one of them to the exclusion of the other in the same manner described by Gupta, Smith, and Shalley (2006) and Ferrary (2011), and similar to the terms of focus on market exploration (or exploitation) used by Voss and Voss (2013) and focused firm used by Van Looy, Martens, and Debackere (2005).

However, specialization does have its shortcomings as well, mainly related to the issue of organizational dynamics leading to the learning trap of success for the specialization in exploitation, or the learning trap of failure when it comes to the specialization in exploration (Levinthal & March, 1993). As such, Lavie, Stettner, and Tushman (2010) indicated that there is a need to examine the performance implications of the available options.

In short, we need to learn more about the effects of ambidextrous versus specialized innovation strategies. To date, no empirical studies have compared the differential effects on firm performance of adopting an ambidextrous versus a specialized innovation strategy (either involving exploitation or exploration), let alone the moderating circumstances that may make one strategy preferable to the other. Regarding potential moderators, the access and internalization of external knowledge is one condition that favors one type of strategy over the other, as it expands the knowledge base for the simultaneous

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development of the two strategies (Fernhaber & Patel, 2012; Kauppila, 2010). Hence, a firm's absorptive capacity is a contextual variable with the potential to determine the differential effects of each innovation strategy (Jansen, 2005; Rothaermel & Alexandre, 2009). Although Jansen (2005) and Limaj and Bernroider (2017) have explored the effects of absorptive capacity on the development of exploitation- and exploration-based innovations, there is still much we need to learn about the moderating role of absorptive capacity on the differential effects on performance of adopting an ambidextrous innovation strategy as opposed to engaging in a specialized strategy.

In this regard, we address the following empirical research questions: What is the differential effect on firm performance of adopting an ambidextrous versus a specialized innovation strategy? And how is this effect affected by the firm's absorptive capacity? To the best of our knowledge, no previous studies have examined these research questions empirically. A literature review in areas such as organizational learning, innovation and strategic management leads us to hypothesize about the role played by absorptive capacity in explaining the differential effects on performance of organizational ambidexterity versus specialization in exploitation or exploration. With data collected from a sample of Colombian innovative firms, we estimate a regression model. To compare the effects of organizational ambidexterity versus specialization in exploitation or exploration and the moderating role of absorptive capacity simultaneously, we apply marginal analysis to evaluate the performance implications of ambidexterity and specialization in exploitation (or exploration) in different contexts of exploration (or exploitation) and absorptive capacity.

Compared to the preconceived notion that ambidexterity is the most effective way to improve performance, we theoretically justify and empirically demonstrate that ambidexterity and specialization in exploitation or exploration are alternative strategies that can both have a positive effect on firm performance. In fact, we find that, when absorptive capacity is low, specialization, involving either exploitation or exploration, is a more effective way to improve firm performance than ambidexterity. On the other hand, when absorptive capacity is high, ambidexterity is more effective than specialization in exploitation or exploration. From a methodological point of view, our marginal analysis presents a new and effective way to compare ambidextrous versus specialized innovation strategies.

This paper is organized as follows. Firstly, we develop the theoretical framework that leads to this study's hypothesis, after which we introduce the methodology we used for the empirical test and the results. Finally, we present the discussion and the conclusions, the managerial implications, and the limitations and futures avenues of research.

2. Theoretical framework and hypothesis

For firms, existing and new knowledge are strategic resources for competitive advantage (Grant, 1996). Exploitation is based on existing knowledge, while exploration is based on new knowledge (Kang & Snell, 2009). In general, the simultaneous use of exploitation and exploration has been considered a precursor of short- and long-term performance for firms (Fernhaber & Patel, 2012). However, trade-offs between exploitation and exploration as a result of the scarcity of resources, organizational routines, and power dynamics may cause ambidexterity to be a counterproductive strategy (Levinthal & March, 1993), and firms may opt in favor of focusing on either exploitation or exploration. On the other hand, specialization may cause firms either to neglect exploration, which means they run the risk that they stop learning, making them obsolete in the long term, or focus too much on exploration at the expense of exploitation, which can ultimately lead to bankruptcy (Levinthal & March, 1993).

As such, it is very important, from a theoretical as well as a managerial perspective, to acknowledge under which conditions an ambidextrous innovation strategy performs better than adopting a

specialized innovation strategy with emphasis in exploitation or exploration. Table 1 presents a list of studies dealing with the concepts of exploitation, exploration, ambidexterity and absorptive capacity. These studies were selected by their emphasis on assessing the effects on performance of ambidexterity and/or specialization in exploitation or exploration, and their references to the role played by absorptive capacity.

Earlier studies suggest that, due to trade-offs, ambidexterity is beneficial when it is implemented within a broader social system rather than at an individual level (Ferrary, 2011). According to these studies, firms should specialize in exploitation (or exploration) and establish relationships with complementary partners that contribute exploration (exploitation) to the business network (Gupta et al., 2006). However, under certain circumstances, ambidexterity can be adopted at an organizational level (Cao et al., 2009). In this regard, Hernández-Espallardo, Sánchez-Pérez, and Segovia-López (2011) pointed out that learning from distributors eases the simultaneous engagement in exploitation and exploration by overcoming the trade-offs between them. On this subject, absorptive capacity, defined as “the ability of a firm to recognize the value of new, external information, assimilate it, and apply it to commercial ends” (Cohen & Levinthal, 1990, p. 128), allows organizations to improve their learning from interactions with their environment (Lavie et al., 2010), and from other firms at an inter-organizational level (Lane & Lubatkin, 1998; Lane, Salk, & Lyles, 2001).

Following Fernhaber and Patel (2012) knowledge conversion routines associated with high absorptive capacity allow firms to better manage the cognitive load resulting from the increase of complexity generally associated to ambidexterity, particularly in technological cycles when existing knowledge is exploited to increase the firm's profitability, and new knowledge is required to increase the firm's ability to adapt to new radical technological changes (Benner & Tushman, 2003). Hence, exploitation provides the income and exploration the opportunities to invest generating synergies between them (Lavie et al., 2010).

Thus, high absorptive capacity enables firms to acquire, assimilate, transform and apply knowledge in a more effective way (Lane, Koka, & Pathak, 2006), allowing the firm to overcome the trade-offs associated with the simultaneous pursuit of exploitation and exploration, promoting the benefits of ambidexterity and translating them into improved performance (Rothaermel & Alexandre, 2009). Hence, firms have the cognitive resources required and can therefore capitalize the benefits of adopting both types of innovations at the same time. As such, we suggest that, in settings characterized by high levels of absorptive capacity, where existing and new knowledge and the capacity to integrate them are available, increasing ambidexterity will have a positive and greater effect on performance than increasing specialization involving either exploitation or exploration.

On the other hand, the simultaneous pursuit of exploitation and exploration implies the execution of the dedicated activities of both types of innovations, competing for scarce resources and involving a complex implementation, and the need to prioritize (March, 1991). In many cases, companies are caught in the middle (Porter, 1985), and not all firms that aim for ambidexterity are successful (O'Reilly & Tushman, 2013). Thornhill and White (2007) have suggested that a pure strategy, with an emphasis on operational excellence (i.e., exploitation) or product leadership (i.e., exploration), allows firms to perform better than when they pursue a hybrid strategy. Similarly, Ebben and Johnson (2005) observed that small firms perform better when they adopt either an efficient (i.e., exploitation-oriented) or a flexible strategy (i.e., exploration-oriented), rather than when they simultaneously pursue both. Lubatkin, Simsek, Ling, and Veiga (2006) and Voss and Voss (2013) found a similar result, concluding that small firms benefit less from an ambidextrous orientation than from a more focused approach. Likewise, Atuahene-Gima (2005) recommended combining high levels of competence exploitation with low levels of competence exploration (and vice versa) to enhance performance. Consequently, adopting

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