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# Dynamic capabilities: antecedents and implications for firms' performance

## Abstract

**Purpose** – This paper aims to explore a new causal link between learning, market, and entrepreneurial orientations and firms' performance by introducing dynamic capabilities and competitive advantages as mediator variables.

**Design/methodology/approach** – The mediating role of dynamic capabilities and competitive advantages is tested using a sample of 1,190 Portuguese firms and structural equation models.

**Findings** – It is shown that dynamic capabilities mediate the relationship between the three orientations – learning, market, and entrepreneurial – and competitive advantages of differentiation and cost leadership, and both competitive advantages lead to firm's performance. It is also shown that learning orientation is an antecedent of market orientation and entrepreneurial orientation.

**Practical implications** – This research shows that firm's performance depends on the capacity of firms to learn, innovate, be proactive, take risks, and collect the best market data. Indeed, by optimizing the internal management and knowledge dissemination, firms will develop a set of capabilities and competitive advantages that lead to an appropriate response to market challenges.

**Originality/value** – This study tests the relationship between strategic orientations and firm's performance by taking the mediating effects of dynamic capabilities and competitive advantages into account. This research was conducted in Portugal.

**Keywords** learning orientation; market orientation; entrepreneurial orientation; dynamic capabilities; competitive advantages; firm's performance

**Paper type** Research paper

## 1. Introduction

The concept of dynamic capabilities is at an early stage of development (Di Stefano *et al.*, 2010). Several studies have addressed the definition, history, nature, processes and consequences of dynamic capabilities, with strong variation in their definitions and effects (Li and Liu, 2014). On one hand, the concept of dynamic capabilities is key to the concept of competitive advantage (Ambrosini *et al.*, 2009); it highlights the importance of firms' adaptation to environmental changing conditions by integrating, building and reconfiguring their resources and capabilities (Teece *et al.*, 1997). Firms need dynamic capabilities to coordinate cross-functional strategic responses that reinforce the market competitive advantage (Jaworski and Kohli, 1993). Individual behaviors and routines can be set as a benchmark for firm's market-oriented behaviors (Hou, 2008). On the other hand, strategic orientations reflect cultural mechanisms that guide the formulation of the strategy and its implementation, leading to superior firm's performance (Kortmann, 2015; Gatignon and Xuereb, 1997). Several studies have focused on different strategic orientations including market, entrepreneurial, learning, among others; but often yielding inconsistent results (Kraft and Bausch, 2016).

This is the first study to analyze the indirect relationship between firm's strategic orientations and firm's performance through the mediating effect of dynamic capabilities and competitive advantages. The main research question is: can firm's strategic orientations improve firm's performance through dynamic capabilities and competitive advantages?

Literature stands that, during the early stages of firms' development, market orientation is correlated with entrepreneurial orientation, which enables them to learn and adapt to the environment, and react to opportunities and threats (Grinstein, 2008). Firms adopting both market orientation and entrepreneurial orientation achieve improved performance. Thus, firms seeking to achieve enhanced performance look at the strengthening of their learning skills (Lin *et al.*, 2008). This research links these two streams of research, connecting strategic orientations to firm's performance by exploring direct and indirect effects that take organizational strategic resources into account. Research has

revealed that each orientation should not be viewed in isolation, since firms may employ multiple strategic orientations (Lonial & Carter, 2015). The concepts of entrepreneurial orientation, learning orientation, and market orientation are difficult to separate because they direct and influence firm's activities, and trigger behaviors that lead to its performance and survival (Hakala, 2011). This research explores the leading role of these three strategic orientations using a sample of Portuguese firms.

In management research, knowledge is a strategic asset that can be acquired, disseminate, and stored; whereas learning is the strategic capability (means) that leads to knowledge (ends) and explains why successful firms outperform their competitors (Bapuji and Crossman, 2004). Several studies have addressed the benefits of learning orientation on firm's performance (Azadegan and Dooley, 2010), market orientation (Santos-Vijande *et al.*, 2005), innovation (Weerawardena *et al.*, 2006), among others. Sinkula *et al.* (1997) define learning orientation as a set of firm values (such as commitment to learning, open mindedness, and shared vision), which influences their propensity to create and use knowledge. These values guide firm's behavior regarding information acquisition, processing, and generation of new knowledge (Fiol and Lyles, 1985), which underline the concept of market orientation (Kohli and Jaworski, 1990). This study takes learning orientation as the core ability to develop strategic responses in highly competitive markets.

Learning orientation can also lead firm's employees to develop entrepreneurial characteristics at the individual level, which may improve firm's entrepreneurial context (Slater and Narver, 1995). The adoption of entrepreneurial values facilitates the identification of latent customer needs and creates innovative ways to deal with their current needs. Entrepreneurial activity is not only limited to create better products than competitors, but also in understanding the evolving customers' needs (Slater and Narver, 1995). To Presutti and Odorici (2019), both market and entrepreneurial orientations are critical dimensions to reach positive firm's performance; and Mamun *et al.* (2018) and Buli (2017) showed that entrepreneurial and market orientations have significant effects on SMEs' performance. Therefore, a more comprehensive framework on how market and entrepreneurial orientations impact SME's performance is needed.

This paper consists of six sections. After this introduction, Section 2 introduces the theoretical framework and hypotheses, i.e., research objectives are framed in the literature, resulting in the proposed conceptual. Section 3 deals with research methods, describes data collection, population and sample, selects the scales to measure constructs, and computes the reliability and validity of the scales. Section 4 presents the testing of the conceptual model. Finally, Section 5 discusses research findings and their managerial implications, limitations, and suggestions for future research.

## **2. Theoretical background and hypotheses**

### *2.1. Dynamic capabilities*

The Resource Based View (RBV) theory defines the firm as a bundle of resources and capabilities persistent over time, but heterogeneous between firms (Ambrosini *et al.*, 2009). Thus, firms possessing value, rare, inimitable, and non-substitutable resources and capabilities can implement value creation strategies that lead to sustainable competitive advantages (Barney, 1991). However, the possession of such resources and capabilities do not guarantee value creation and development of competitive advantages (Priem and Butler, 2001); thus, dynamic capabilities are needed to combine, develop, and exploit those resources (Ferreira *et al.*, 2017).

Dynamic capabilities arise as an extension to the RBV theory (Chen and Jaw, 2009) and reflect firm's ability to integrate, built, and reconfigure its internal and external expertise in order to face environmental changes (Teece *et al.*, 1997). To Eisenhardt and Martin (2000), dynamic capabilities are specific and identifiable processes such as product development and strategic decision making. On the other hand, Barreto (2010) argues that they embody a systematic and timely way of solving business problems by taking its market-oriented propensity to detect opportunities and threats. To Martelo *et al.* (2013), they are the firm's ability to reconfigure its operational capabilities. Thus, firms can develop innovative

transformations using dynamic capabilities (Schilke 2014). These capabilities promote the development of new resources and the creation of a problem-solving capacity for the future (Danneels, 2016). In this way, dynamic capabilities involve adaptation and change, by converting resources that lead to the creation of competitive advantage and improved performance (Khan *et al.*, 2019). They are associated with non-financial measures of organizational performance (Simon *et al.*, 2015). To understand the enlarged context of dynamic capabilities, Zahra *et al.* (2006) suggest the analysis of their antecedents and outcomes. According to Eriksson (2014), several factors influence the development of dynamic capabilities and can be either internal or external to the firm. Internal antecedents may be organizational (e.g. market orientation) or individual (e.g. entrepreneurial orientation) (Jantunen *et al.*, 2005). External antecedents include environment, networks, and relationships (Eriksson, 2014). On the other hand, the outcomes of the dynamic capabilities have been studied in connection to firm's performance (Eisenhardt and Martin, 2000) and competitive advantage (Readman and Grantham, 2006).

## 2.2. Learning orientation

The learning orientation focuses on the transformation of information into knowledge and practices that lead to organizational change and ultimately impact firm's performance (Slater and Narver, 1995). This concept comes from the RBV theory and has been seen as the only firm's ability that cannot be imitated by competitors (Day, 1994).

Real *et al.* (2012) define learning orientation as a dynamic process of knowledge creation generated in the organization through its individuals and groups. Baker and Sinkula (1999) describe learning orientation as an organizational dimension that affects firm's propensity to create value and to encourage its members to "think outside the box". Learning orientation contains a set of organizational values that influence the firm's trend to create and use knowledge (Sinkula *et al.*, 1997). This is related to managers' commitment to support a culture that promotes learning as one of its core values. Bapuji and Crossman (2004) emphasize the management role in supporting the learning process and its promotion. Another important value is the open mindedness, which is linked to mental models that dominate the firm (Day, 1994). Moreover, a shared vision is needed to make the employees learn, foster motivation, and put into practice the acquired knowledge. Learning describes an organizational capability to create competitive advantages through a mechanism based on experiences, external information, and resources (Cohen and Levinthal, 1990).

## 2.3. Market orientation

Since the 1990s, market orientation has been the focus of modern marketing research (Liu, 2013). It focuses on the firm propensity to adopt the marketing concept and is usually measured by the firms' commitment to customer-oriented strategic decisions (Slater and Narver, 1995; Day 1994; Jaworski and Kohli, 1993; Kohli and Jaworski, 1990; Narver and Slater, 1990). According to Baker and Sinkula (2009), firms with a strong market orientation emphasize: (1) learning about customers (tastes, satisfaction and perceptions); (2) factors that influence customers (competitors, economy and socio-cultural trends); and (3) factors that affect the firm's ability to influence and satisfy customers (technology and regulation). This focus is needed, because customer satisfaction is one of the most important organizational objectives. Two conceptualizations of market orientation have received greater acceptance: Narver and Slater (1990), centered on the cultural perspective; and Kohli and Jaworski (1990), focused on the behavioral perspective. Regarding operationalization of the market orientation concept, most studies use the MARKOR scale from Kohli *et al.* (1993) and MKTOR scale from Narver and Slater (1990).

According to Lettice *et al.* (2014), the importance of market orientation has triggered a stream of research on its concept, its antecedents, moderators, mediators, and organizational barriers to its development. Additionally, market orientation has been shown to be connected to firm's performance (Bamfo and Kraa, 2019; Lee *et al.*, 2015). For instance, market orientation is positively related to customer satisfaction, customer loyalty, quality of products or services, firm innovativeness, new products development, and employee

satisfaction at work (Kirca *et al.*, 2005). Market orientation is extremely important at times of great uncertainty (Lettice *et al.*, 2014). Grewal and Tansuhaj (2001) suggest the need to conduct research on market orientation and strategic flexibility development during times of crisis. Market orientation is a core orientation in response to market trends and less important to the processes (Cadogan *et al.*, 2009). Gao (2017) argued that the lack of research on internal organizational dimensions limits our understanding of the concept of market orientation.

#### *2.4. Learning orientation and market orientation*

According to Andreu *et al.* (2007), learning and market orientations represent two key organizational resources; however, after many studies on learning orientation and its impact on firm's performance, its application in the marketing field is still inconclusive. On the other hand, the relationship between the learning orientation and firm's performance has not been analyzed so often. Learning orientation implies being market oriented, i.e., by integrating knowledge from customers, competition, and the environment, it delivers higher sustainable value to the customer in the long run (Day, 1994).

March (1991) states that learning is a key component to improve firm's performance and support competitive advantage. According to Day (1994), the combination of strong market and learning orientations leads to the true source of sustainable competitive advantage. Lin *et al.* (2008) argue that market orientation is heavily determined by learning orientation. Inability to acquire knowledge from organizational learning tends to reduce firm's performance and market orientation (Al Idrus *et al.*, 2019; Wolf and Widmar, 2014). Kaya and Patton (2011) also suggest that high levels of learning orientation tend to promote a participative decision-making and to improve the innovation level. Nikoomaram and Ma'atoofi (2011) concluded that intensive organizational learning produces higher levels of market orientation. Whenever firms are able to learn, the quality of their products is improved, helping them to meet market demand (Kasim and Altinay, 2016). Mavondo *et al.* (2005) also argue that there is a strong relationship between learning orientation and market orientation. Hamzah *et al.* (2020) proposed the mediating role of internal market orientation on the link between learning orientation and job performance. Thus, learning orientation may be seen as an antecedent of market orientation. Thus, our first hypothesis is:

**Hypothesis 1:** Learning orientation positively influences market orientation.

#### *2.5. Entrepreneurial orientation*

Miller (1983) and Covin and Slevin (1991) conceptualize entrepreneurial strategic posture, commonly known as entrepreneurial orientation, as the existence of an observable and recurring pattern behavior, specifically innovative, proactive, and risk taking. The innovation propensity refers to the willingness to develop new products and services (Lumpkin and Dess, 2001). Proactivity implies a tendency to take initiative, acting before competitors (Covin *et al.*, 2006). Risk-taking refers to the propensity to invest in scenarios with uncertain results (Lumpkin and Dess, 1996).

Entrepreneurial orientation represents a strategic organizational approach that encourages the acquisition, structuring and exploitation of organizational resources that facilitate the sustainability of competitive advantages (Wiklund and Shepherd, 2011). According to the RBV theory, entrepreneurial orientation is associated with the successful exploration of the firm's resources (White and Vila, 2017).

The impact of entrepreneurial orientation on firm's performance has been shown to be positive (Masa'deh *et al.*, 2018; De Clercq *et al.*, 2010), negative (Hart, 1992), and not significant (Li *et al.*, 2005; Stam and Elfring, 2008). An explanation for these contradictory results might be explained by the fact that the relationship between entrepreneurial orientation and firm's performance is influenced by other factors (Su *et al.*, 2011).

#### *2.6. Learning orientation and entrepreneurial orientation*

Although learning orientation has been widely studied in management, its joint analysis with entrepreneurial orientation has been limited (Brettel and Rottenberger, 2013). For instance,

in the context of family firms, Zahra (2008) found that learning orientation allows firm to identify the market changing conditions and opportunities to explore. Learning generates the knowledge needed to design several entrepreneurial initiatives.

To Honig and Hopp (2019), different learning orientations are important to understand entrepreneurial emergence, as both individuals and firms continuously attempt to learn. Moreover, learning speed also allows the firm to be proactive in the development of entrepreneurial activities, and gives the opportunity to be pioneer and setting the market standards.

Firms that learn quickly tend to simplify their systems and processes, as well as improve their ability to respond to the market and identify potential fields of entrepreneurial activities (Zahra, 2012). To be entrepreneurial, firms need to scan their external environment proactively, which requires a learning skill (Rhee *et al.*, 2010). The access to knowledge is a key for recognizing, pursuing, and taking advantage of entrepreneurial opportunities (Randolph *et al.*, 2017). Thus, high levels of learning orientation have been found to enhance entrepreneurial orientation (Deutscher *et al.*, 2016). Hernández-Linares *et al.* (2018) suggest that within family firms, a learning-oriented culture enhances organizational entrepreneurial orientation. More generally, entrepreneurial orientation needs learning orientation to materialize (Baker and Sinkula, 2009); thus, we propose the following hypothesis:

**Hypothesis 2:** Learning orientation positively influences entrepreneurial orientation.

### *2.7. Learning orientation and dynamic capabilities*

The development of dynamic capabilities requires knowledge accumulation, articulation, and codification; thus, knowledge is strongly related to dynamic capabilities (Zollo and Winter, 2002). That is, knowledge management processes lead to the development and use of these dynamic capabilities (Eisenhardt and Martin, 2000), which then facilitate the improvement of firms' current practices.

The learning orientation mechanisms are specific routines within a dynamic system that can affect the beliefs and attitudes of the firm members, and strengthen the thinking and the innovation capability. Specific learning processes promote the development of dynamic capabilities (Kogut and Zander, 1992) and firm's growth (Lee *et al.*, 2011).

Learning-oriented firms tend to create a learning climate in which employees are encouraged to learn and think "outside the box" (Nasution *et al.*, 2011). This cultural atmosphere is highly useful for industrial firms seeking to strengthen their organizational capabilities (Xie and Zheng, 2019). According to Huang and Li (2017), the integration of organizational learning theory and dynamic capabilities provides new insights on the understanding of the learning orientation and capability of new products development. Thus, we set the following hypothesis:

**Hypothesis 3:** Learning orientation positively influences dynamic capabilities.

### *2.8. Market orientation and dynamic capabilities*

The RBV theory conceives the firm as a collection of valuable, rare, non-imitable and non-substitutable resources (Hult *et al.*, 2005), in which market orientation is one of the most important assets (Zhou *et al.*, 2008). A better understanding of customer needs, competitor's actions, and market knowledge allow a market-oriented firm to identify and develop capabilities for a long term performance (Day, 1994).

Resources investment, such as information generation through multiple channels (sales force, partnerships, suppliers), the integration of customer feedback over all firm-customer interaction, as well as sharing and dissemination of customers and competitor's information need an integrated system to be able to provide return on the investment (Kumar *et al.*, 2011). Moreover, market orientation fosters experimentation, continuous processes, and systems improvement, which imply the long-term development and improvement of differentiation and sustainable competitive advantages over competitors. This is particularly evident for small businesses, because they have scarce resources to compete in the market (Polo-Peña *et al.*, 2011).

Market orientation enables firms to develop activities to process and respond to market information (Tuominen *et al.*, 2004). Naidoo (2010) and Menguc and Auh (2006) concluded that market orientation deploys dynamic capabilities, which lead to firm's growth. Thus, we hypothesize that:

**Hypothesis 4:** Market orientation positively influences dynamic capabilities.

### *2.9. Entrepreneurial orientation and dynamic capabilities*

According to Atuahene-Gima and Ko (2001), firms must possess market orientation and entrepreneurial orientation, since they complement each other: market orientation detects current opportunities; while entrepreneurial orientation foresees the firm and its environment.

According to the RBV theory, entrepreneurial orientation is a resource that contains potential value, because the development of an entrepreneurial orientation is a necessary condition, but not sufficient for value creation (Barney, 1991). Firms need to take good strategic actions to capitalize entrepreneurial orientation in order to obtain a competitive advantage and achieve a desirable performance (Murray *et al.*, 2011). Capabilities built on corporate resources explain performance variations (Morgan *et al.*, 2009); thus, entrepreneurial orientation requires the development of organizational capabilities.

Eriksson (2014) developed a meta-analysis of internal antecedents and concluded that: at the social level, many orientations are antecedents and influencers of dynamic capabilities; other orientations may be either organizational or individual, such as entrepreneurial orientation (Jantunen *et al.*, 2005). According to Lim and Kim (2019), dynamic capabilities can be developed by acquiring competitiveness, which are driven by entrepreneurial orientation.

Teece (2007) and Monteiro *et al.* (2017) define entrepreneurial orientation as antecedent of dynamic capabilities. Jantunen *et al.* (2005) suggest that entrepreneurial orientation supports the capability to explore opportunities, which will have a positive impact on dynamic capabilities. Thus, we state that:

**Hypothesis 5:** Entrepreneurial orientation positively influences dynamic capabilities.

### *2.10. Dynamic capabilities and competitive advantages*

Porter (1980) defines strategy as a consistent set of activities to create a specific type of competitive advantage: differentiation or low cost. The differentiation strategy materializes through the development of products or services with added benefits, which are perceived as being different or unique in the marketplace, and provide greater benefits to the customer. On the other hand, the cost leadership strategy aims to achieve the lowest cost in the market without compromising quality, service or other aspects. This strategic drive attempts to transform the internal efficiency in lower costs and prices to the customers (Santos-Vijande *et al.*, 2012). The experience allows a firm to reduce the required amount of resources to be used in performing the task. Thus, the firm achieves a competitive advantage by converting this cost reduction into productivity gains.

Firms are conscious of their need to create superior value for their customers, but they need to understand how to rearrange their existing capabilities to be able to do so. There is consensus that dynamic capabilities are linked to the firm competitive advantage and its performance (Eisenhardt and Martin, 2000); although, there is debate about the causal link between them (Ambrosini *et al.*, 2009).

According to Wang and Ahmed (2007), the analysis of dynamic capabilities effects must be pursued in the long term, as a sustainable advantage. Teece *et al.* (1997) argue that dynamic capabilities help explain why some firms are more successful in creating competitive advantage in dynamic markets than others. Aveni *et al.* (2010) highlight the importance of the dynamic short-term adjustment of competitive advantages to deal with a hyper competitive environment, where resources are scarce.

According to Hsu and Wang (2012), dynamic capabilities emerged as a complement to the RBV theory to explain the competitive advantage in rapidly changing environments. Dynamic capabilities provide the basis for a continuous search for the uniqueness that differentiation is made of (Fainshmidt *et al.*, 2018). The competitors' inability to reproduce

firm capabilities suggests dynamic capabilities as a sustainable factor of competitive advantage (Weerawardena and Mavondo, 2011). Thus, the next two hypotheses state that:

**Hypothesis 6:** Dynamic capabilities positively influence competitive advantage of differentiation.

**Hypothesis 7:** Dynamic capabilities positively influence competitive advantage of cost leadership.

### *2.11. Competitive advantages and performance*

It has long been recognized that the core of the firm strategy is the ability to understand what is important to customers – what creates value for them – and the management of customer value over time (Porter, 1985). The capacity to identify what customers want from a product or service helps the firm to make its value proposition (Martelo *et al.*, 2013).

The relationship between the development and/or maintenance of competitive advantages and firm's performance has already been shown in many studies (Naidoo, 2010; Li and Zhou, 2010). Competitive advantages can affect the firm's profit, market share, and operational performance at different moments and contexts (Harrison *et al.*, 2010); thus, we also established the following research hypotheses:

**Hypothesis 8:** Competitive advantage of differentiation positively influences firm's performance.

**Hypothesis 9:** Competitive advantage of cost leadership positively influences firm's performance.

### *2.12. Conceptual model*

The conceptual model (Figure 1) summarizes the main relations in the model, i.e., how learning orientation influences firms market orientation, entrepreneurial orientation, and dynamic capabilities. Moreover, we test dynamic capabilities as antecedents of competitive advantages of differentiation and cost leadership and, consequently, firm's performance. Seven control variables that characterize firms are added to the model: age, size, sales volume, location, type of industry, export activity, and development of Research & Development (R&D) activities.

==== Figure 1 about here ====

## **3. Research method and data collection**

### *3.1. Measures*

The entrepreneurial orientation was measured using a 9-item scale of Covin and Slevin (1989). According to Kropp *et al.* (2008), this is the most used scale to measure entrepreneurial orientation. To measure learning orientation, we used an 18-item scale from Baker and Sinkula (1999), which has been retested and validated in several studies (Wu *et al.*, 2020; Stelmaszczyk, 2020). To measure market orientation, we adopted the 16-item scale from Taylor *et al.* (2008), which is an adaptation of Jaworski and Kohli's (1993) MARKOR scale. This scale has been the most used in the market orientation studies (Rodriguez-Cano *et al.*, 2004). In line with Porter (1980), Frambach *et al.* (2003) developed a scale to measure competitive advantages of differentiation and cost leadership with four items and five items, respectively. To measure dynamic capabilities, we used the 11-items scale from Hung *et al.* (2010). For performance, we used five well-known items (Richard *et al.*, 2009). Entrepreneurial orientation was measured on a seven-point semantic differential scale. Firm's performance was measured in relation to the main competitors (1 = much worse than main competitors to 7 = much better than main competitors). All other items were measured on a 7-point Likert-type scale (from 1 = totally disagree to 7 = totally agree).

To test the effects of specific intrinsic characteristics of the firms, we added seven control variables to the model: age, size, sales volume, location, type of activity, export activity, and R&D activity. These controls are commonly used in management research (Kraus *et al.*, 2012; Liu, 1995; Laforet, 2008; Stam and Elfring, 2008; Zahra and Garvis, 2000). The firm age is categorized into three ordinal levels: less than 10 years, from 10 to 20



years, and more than 20 years. The firm size is categorized into three ordinal levels: less than 10 employees, from 10 to 49 employees, and 50 or more employees. Sales volume is measured using an ordinal scale: less than €50,000, between €50,000 and €250,000, between €250,001 and 1,000,000, and more than 1 million euros. The location was categorized into North, Centre, Lisboa and Vale do Tejo, South, and Islands. The type of activity was categorized as industry, construction, trade, and services. The export and R&D activities were considered as dummy variables (0 = no, 1 = yes).

### *3.2. Population, Sample, data collection, and data analysis*

This study focused on Portuguese firms. The sample was drawn from the Portuguese national database containing approximately 91,000 operating firms.

The questionnaire was drafted and then tested using nine firms (pilot test) to assess the understanding of the questions. Specific adjustments were made based on comments and suggestions of the respondents.

All firms included in the database were contacted by e-mail and informed of the scope and objectives of the study. The online questionnaire survey was conducted using the Google Forms platform and the interviewee was required to be the firm's manager.

The data file from the Google Forms was converted into an SPSS data file. Then, a logical validation and testing of data consistency were performed. The final sample comprised 1,190 firms, which is large enough to estimate our models (Wolf et al., 2013). Structural equation models were estimated using Mplus 6.

The sample characterization was based on the following variables: firm size, firm age, type of activity, sales volume, geographic location, development of export activity, and development of R&D activities. In terms of firm size, measured by the number of full-time employees, our sample consists of 58.7% of micro firms (less than 10 employees), 29.8% of small firms (between 10 and 49 employees), and 11.5% of medium and large firms (50 or more employees). Regarding firm age, 25% had up to 10 years of operation, 37% have between 11 and 20 years, and 37.4% have been operating for more than 20 years (0.7% did not answer this question). In terms of activity, 49.9% of the sample refers to the services sector, 23.8% to trade, 16.9% to industry, and 6.9% to construction (2.5% did not answer this question). Regarding previous year's sales volume, 11.8% of firms had less than €50,000, 29.7% between €50,000 and €250,000, 28.8% between €250,001 and €1,000,000, and 29.7% of the firms achieved a sales volume of over one million euros. In terms of location, 32.9% of the sample consists of firms located in Lisboa and Vale do Tejo, 30.3% in the North of the Portugal, 23.5% in the Center, 8.6% in the South, and 4.7% in Madeira and Azores Islands. Finally, 37.1% of firms develop export activity and 29.1% are engaged in R&D activities. Sampling stratification by regional distribution of the Portuguese firms guarantees sample representativeness.

### *3.3. Construct reliability and validity*

We run a confirmatory factor analysis to assess reliability of all measurement scales. In particular, specific measurement items need to be removed as they are loosely connected to the constructs (low factor loadings), which causes poor reliability of the construct. Thus, we retained 12 items in the market orientation scale, 12 items in learning orientation scale, four items in the entrepreneurial orientation scale, three items in the competitive advantage of differentiation, four items in the competitive advantage of cost leadership; and dynamic capabilities and performance scales kept the original nine and five items, respectively. A second-order model is assumed for market orientation (Lettice et al., 2014), learning orientation (Santos-Vijande et al., 2005), and dynamic capabilities (Hung et al., 2010). On the other hand, competitive advantages of differentiation and cost leadership, entrepreneurial orientation, and performance are conceived as first-order constructs. Table 1 depicts parameter estimates of the second-order factor loadings.

==== Table 1 about here ====

Table 2 depicts indicators of reliability and validity of the measurements, namely the Cronbach's alpha, the composite reliability (CR), and the average variance extracted (AVE).

==== Table 2 about here ====

The Cronbach's alpha thresholds are good consistency, an acceptable consistency, and a weaker consistency for values greater than 0.80, between 0.60 and 0.80, and below 0.6, respectively (Hair *et al.*, 2010). CR and AVE indicators were evaluated as described by Fornell and Larcker (1981). Thus, most of the constructs have good consistency, except the entrepreneurial orientation, competitive advantage of cost leadership, information generation, innovation in R&D capabilities, and management capabilities. However, all have at least an acceptable consistency.

The scales provide satisfactory levels of CR and AVE, except for competitive advantage of cost leadership, which has a variance extracted below 0.5. The CR is between 0.6 and 0.98, while AVE, excluding competitive advantage of cost leadership, is between 0.5 and 0.92. Following Li and Zhou (2010), we chose to keep this dimension. Overall, items measure the same construct.

## 4. Results

### 4.1. Structural relationships

To test the hypotheses underlying the conceptual model (Figure 1), we estimated the structural equation model by maximum likelihood. Seven control variables were included, which were directly related to competitive advantages and performance. The fit of the structural equation model is confirmed using the chi-square test.

Results show that the model has a good fit for the observed covariance matrix:  $\chi^2(958) = 3617.032$ ,  $\chi^2/df = 3.776$ , Comparative fit index [CFI] = 0.958, Tucker-Lewis index [TLI] = 0.954, RMSEA = 0.049,  $P[\text{rmsea} \leq 0.05] = 0.810$ , IC to 90% ]0.047,0.051[. Indeed, the CFI and the TLI are well above the 0.95 threshold and the RMSEA is below the 0.05 threshold to be considered a good fit (Hu and Bentler, 1999). All items are statistically significant ( $p < 0.001$ ), and the factor loadings are greater than 0.50. Thus, these measures demonstrate adequate validity and reliability. Table 3 presents the estimated coefficients of the structural model.

==== Table 3 about here ====

In order to measure mediating effects, we tested whether learning orientation affects market orientation (H1). From Table 3, we conclude that learning orientation positively affects market orientation ( $\beta=0.834$ ,  $p<0.001$ ); thus, H1 is confirmed. This finding confirms results in Al Idrus *et al.* (2019), who also concluded that there is a positive and significant effect of organizational learning on market orientation. Then, we tested firms' learning orientation with entrepreneurial orientation (H2) and the relationship between learning orientation and dynamic capabilities (H3). Results show that learning orientation has a positive impact on both entrepreneurial orientation ( $\beta=0.601$ ,  $p<0.001$ ) and dynamic capabilities ( $\beta=0.394$ ,  $p<0.001$ ); thus, H2 and H3 are also confirmed. These findings support Hernández-Linares *et al.* (2018), who concluded that learning orientation increases entrepreneurial orientation; and Lee *et al.* (2011), who verified that learning orientation promotes dynamic capabilities. Then, H4 and H5 were tested: the relation between market orientation and dynamic capabilities ( $\beta=0.292$ ,  $p<0.001$ ), and between entrepreneurial orientation and dynamic capabilities ( $\beta=0.395$ ,  $p<0.001$ ). This confirmation of H4 and H5 is in agreement with Menguc and Auh (2006), who found that market orientation promotes the deployment of dynamic capabilities; and Lim and Kim (2019), who concluded that dynamic capabilities result from entrepreneurial orientation. The same conclusion can be drawn from the relationship between dynamic capabilities and competitive advantage of differentiation ( $\beta = 0.675$ ,  $p < 0.001$ ) and of cost leadership ( $\beta = 0.412$ ,  $p < 0.001$ ), confirming H6 and H7. There is an overall agreement that dynamic capabilities are linked to the firm competitive advantage (Eisenhardt and Martin,

2000). Finally, we conclude that competitive advantages linked to differentiation ( $\beta=0.609$ ,  $p<0.001$ ) and cost leadership ( $\beta=0.106$ ,  $p<0.001$ ) have a positive impact on firm's performance; thus, H8 and H9 are also confirmed as in Naidoo (2010), Li and Zhou (2010), and Harrison *et al.* (2010).

Based on the tested hypotheses, we conclude that learning orientation promotes market orientation and entrepreneurial orientation, and are all antecedents of dynamic capabilities. The latter may mediate the relationship between the three antecedent constructs and competitive advantages of differentiation and cost leadership. From the model (Figure 1), competitive advantages may mediate the relationship between dynamic capabilities and firm's performance. Market orientation and entrepreneurial orientation may be also mediators in the relationship between learning orientation and dynamic capabilities. These results are further strengthened against estimates of indirect relations, in which we found that learning orientation ( $\beta=0.259$ ,  $p<0.001$ ), entrepreneurial orientation ( $\beta=0.048$ ,  $p<0.001$ ), dynamic capabilities ( $\beta=0.291$ ,  $p<0.001$ ), and market orientation ( $\beta=0.043$ ,  $p<0.001$ ) have a positive impact on performance. On the other hand, we found that learning orientation has a positive impact on both competitive advantages ( $\beta = 0.522$ ,  $p < 0.001$  for differentiation; and  $\beta = 0.292$ ,  $p < 0.001$  for cost leadership), in the relationship between market orientation and both competitive advantage of differentiation ( $\beta=0.087$ ,  $p<0.001$ ) and of cost leadership ( $\beta=0.049$ ,  $p<0.001$ ), and in the relationship between entrepreneurial orientation and differentiation ( $\beta=0.097$ ,  $p<0.001$ ) and cost leadership ( $\beta=0.054$ ,  $p<0.001$ ).

#### 4.2. Effects of control variables

The estimates of the impact of control variables on both competitive advantages and performance are given in Table 4.

==== Table 4 about here ====

We conclude that firms with sales volume higher than €50,000 have higher performance than the reference class (firms with sales volume lower than €50,000). For the same reference, we also found that firms with sales volume exceeding €250,000 present better differentiation and firms with sales volume between €50,000 and €250,000 have lower competitive advantage by cost leadership. Regarding the type of activity (reference: services), industrial firms show lower rates of differentiation and firms from the construction sector show a lower firm's performance. In terms of location, island firms (Madeira and Azores) are better in terms of cost leadership, taking firms from Lisboa and Vale do Tejo as reference. Finally, R&D activities lead to greater competitive advantage in terms of differentiation.

## 5. Discussion and conclusions

### 5.1. Managerial implications

The concept of dynamic capabilities is very important in strategic management. This study conducts the first empirical analysis of dynamic capabilities as mediator between strategic orientations – learning, market, and entrepreneurial –, the development of competitive advantages – cost leadership and differentiation –, and firm's performance in Portugal. It highlights the need for further research and how firms can improve management style in order to create customer value. In particular, it helps understand how firms deal with markets by means of their own resources. The dimensions of the dynamic capabilities construct (strategic, R&D innovation, and management capabilities) form a set of distinctive competencies for firms. Results give support that learning orientation fosters market orientation (Nikoomaram and Ma'atoofi, 2011) and entrepreneurial orientation (Hernández-Linares *et al.*, 2018). These strategic orientations were confirmed as antecedents of dynamic capabilities. In addition, dynamic capabilities lead to firm's competitive advantage of differentiation and cost leadership, and ultimately improve firm's performance (Wu, 2010; Makkonen *et al.*, 2014).

Relevant managerial implications can be derived from this research. It shows that organizational orientations and capabilities impact competitive advantages and performance.

First, we confirmed that learning orientation is able to provide market-oriented and entrepreneurial behaviors and the emergence of dynamic capabilities. Thus, firms must learn how to adapt to environmental changes to minimize market uncertainty (March, 1991). Firms reduce market uncertainty through the learning orientation process, i.e., by content-intensive interactions with stakeholders (Tamayo-Torres *et al.*, 2014). Learning orientation boosts firm's strategic flexibility by its continuous streaming of accumulated experience and new knowledge. This creative process helps achieve competitive benefits based on the implementation of efficiency-based and quality-based operations. In line with Villar *et al.* (2014), good practices of learning are important tools, but not a sufficient condition to boost firm's performance. Managers should provide mechanisms to create, disseminate, and retain knowledge, and to establish systems to implement and reconfigure the relevant knowledge. In this regard, market orientation is an extension and consequence of the learning experience. Thus, it is essential to promote the employees' commitment to learning. In particular, managers must foster organizational learning by investing in employees' training, involving them in the organization purpose, goals and management, and promoting an open-minded culture, in which they have an active saying. This management practice will enhance the generation and dissemination of market information within the firm and boost its effective response capability.

Second, this learning environment can help the organization to reinforce innovativeness, risk-taking and proactiveness, which are embedded in the entrepreneurial orientation. These values are critical to anticipate competitors' moves, understand the competitive environment, and promote the factors leading to firm's performance. Thus, employees' commitment towards learning is required as cultural means to develop entrepreneurial attitudes and behavior. Therefore, managers have to understand that entrepreneurial and market orientations are complementary and will open up strategic options to create sustainable and distinctive capabilities.

Third, the three strategic orientations enhance (internal) dynamic capabilities, namely the awareness of new business opportunities, timing and paths to R&D, and coordination, which contribute to the development of sustainable competitive advantages.

Fourth, the mediating role of dynamic capabilities and competitive advantages (differentiation and cost leadership) between the strategic orientations and firm's performance shows the importance of having an effective internal policy to develop dynamic capabilities, facilitate competitive advantages, and positively affect firm's performance. These results suggest a new strategic chain that leads to higher firm's performance. Thus, managers should embrace this new conceptual framework by exploring the benefits of each strategic orientation in its role to trigger competitive advantages – cost leadership or differentiation – and superior firm's performance.

## *5.2. Limitations and direction for further research*

This cross-sectorial study pools together all firms. Future research can compare heterogeneous groups of firms (e.g., based on industry or region) regarding the structural relations between constructs. Additionally, this research can be extended in order to collect longitudinal data to study the dynamic relation between constructs and potential impact of endogeneity. Indeed, exogenous factors can change quickly market conditions. Thus, a full understanding of dynamic strategic adaptation requires panel data and we leave this extension for further research.

The conceptual model results from theoretical decisions based on the literature. For instance, factors such as marketing capabilities or innovation may be defined as antecedents of dynamic capabilities (Mariadoss *et al.*, 2011). However, other conceptual models can be proposed based on other theoretical views, such as testing the strategic orientations as mediators or moderators of the relationship between dynamic capabilities and competitive advantages, and/or firm performance. Moreover, other dynamic capabilities may be used in future studies, such as the propensities for detecting opportunities and threats (Barreto, 2010), for adaptation (Wang and Ahmed, 2007), and reconfiguration (Jantunen *et al.*, 2012).

Another extension can result from adding new roles to control variables. For instance, the development of export activity and R&D may moderate the relation between constructs.

Model testing of these conceptual models has been mostly based on attitudinal data, reflecting respondents' opinion. Moreover, firm's employees were the exclusive source of data and no other market players, such as customers, were surveyed. Nevertheless, this limitation was mitigated by targeting the top manager with the highest responsibility and best knowledge about the firm. We notice that most of the firms are small and medium size.

This study was conducted in Portugal, whose economy has been under financial stress. This context provides a unique opportunity to test conceptual frameworks in an adverse environment. Indeed, the COVID-19 pandemic crisis has added relevance to our conclusions; as the sample was mostly composed of small and medium size firms, it provided the ideal context to understand the role of organizational capabilities in facing environmental changes. Important insights are relevant to managers on how to enhance strategic tools – learning, entrepreneurship, and market knowledge – to improve organizational effectiveness and efficiency.

Finally, these results can be particularly relevant for policy makers dealing with post-COVID-19 economic recovery. In particular, as part of digitalization strategies, knowledge-based strategies should be promoted to support the recovery of SME.

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