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IMPACT OF ENTREPRENEURIAL ORIENTATION ON STRATEGIC ALLIANCES AND
THE ROLE OF TOP MANAGEMENT

ARTICLES

IMPACT OF ENTREPRENEURIAL ORIENTATION ON STRATEGIC ALLIANCES AND THE ROLE OF TOP MANAGEMENT

Impacto da orientação empreendedora nas alianças estratégicas e a influência da alta administração

Impacto de la orientación emprendedora en alianzas estratégicas y el papel de la alta dirección

ABSTRACT

The management literature draws attention to the gap of strategic alliances (SA) in the paradigm of entrepreneurial orientation (EO). The aim of this paper is to propose a model where EO is associated with SA, this relationship being influenced by its predecessor (top management), and EO working as a multidimensional construct. Data collected from 101 Brazilian firms were analyzed using structural equation modeling and supported those hypotheses. Improving firms' EO, particularly risk taking (RT), is important in order to promote SA. Obviously, top management can influence SA, but firms with an RT competence are more likely to promote SAs and conduct their implementation. Therefore, the present study offers the following contributions: (1) consolidating the EO construct by using it in a multidimensional way in a reflexive model, particularly the risk dimension; (2) advancing studies relating EO and SA by showing that top management has a significant influence on the EO-SA relationship; (3) the model used is robust and representative of the field of strategy and entrepreneurship as it explained 25.5% of the EO-SA relationship; (4) we suggest that EO should be used to increase SA and firm performance, which can reduce entrance barriers and business risks, particularly for small and medium-sized enterprises (SMEs).

KEYWORDS | Entrepreneurial orientation, strategic alliances, top management team, entrepreneurship, strategy.

RESUMO

A literatura de gestão chama a atenção para a lacuna de alianças estratégicas (AE) no paradigma da orientação empreendedora (OE). O objetivo deste trabalho é propor um modelo em que a OE está associada à AE, esta relação sendo influenciada pelo antecessor (alta administração), e a OE atuando de forma multidimensional. Dados coletados junto a 101 empresas brasileiras foram analisados por modelagem de equações estruturais, e suportam essas hipóteses. Melhorar a OE da empresa, em especial o risco, é importante para alavancar AE. Obviamente, a alta administração influencia a formação de alianças, mas as empresas com competência para assumir riscos são mais propensas a AE. Desta forma, esta pesquisa oferece as seguintes contribuições: (1) a consolidação do construto OE ao usá-lo de forma multidimensional em um modelo reflexivo, especialmente a dimensão risco; (2) a extensão dos trabalhos relativos à OE e AE, ao mostrar que a alta administração da empresa é importante para a relação OE-AE; (3) o modelo utilizado é robusto e representativo da área de estratégia e empreendedorismo, explicando 25,5% da relação OE-AE; (4) sugerimos que a OE deve ser usada para estimular as AEs e melhorar o desempenho da empresa, reduzindo as barreiras de entrada e riscos associados aos negócios, especialmente para as pequenas e médias empresas (PMEs).

***PALAVRAS-CHAVE** | Orientação empreendedora, alianças estratégicas, alta administração, empreendedorismo, estratégia.*

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RESUMEN

La literatura de gestión llama la atención sobre la brecha de las alianzas estratégicas (AE) en el paradigma de la orientación emprendedora (OE). El objetivo de este trabajo es proponer un modelo donde la OE está asociada a las AE, esta relación siendo influenciada por su predecesor (alta dirección), y la OE trabajando como un constructo multidimensional. Los datos recogidos de 101 empresas brasileñas fueron analizados utilizando modelos de ecuaciones estructurales y apoyaron esas hipótesis. La mejora de la OE de las empresas, en particular la toma de riesgos (RT), es importante con el fin de promover las AE. Obviamente, la alta dirección puede influenciar la AE, pero las empresas con una competencia de TR son más propensas a promover las AE y conducir su implementación. Por lo tanto, el presente estudio ofrece las siguientes contribuciones: (1) la consolidación de la construcción de la OE mediante su uso de una manera multidimensional en un modelo reflexivo, en particular la dimensión del riesgo; (2) el avance de los estudios relacionados a OE y AE, demostrando que la alta dirección tiene una influencia significativa en la relación OE-AE; (3) el modelo utilizado es robusto y representativo del campo de la estrategia y emprendimiento, ya que explica 25,5% de la relación OE-AE; (4) sugerimos que la OE se debe utilizar para aumentar las AE y el desempeño de la empresa, lo que puede reducir las barreras de entrada y los riesgos de negocio, en particular para las pequeñas y medianas empresas (PYMEs).

***PALABRAS CLAVE** | Orientación emprendedora, alianzas estratégicas, equipo de alta dirección, espíritu empresarial, estrategia.*

INTRODUCTION

Although the fields of entrepreneurship and alliances research provide valuable information on knowledge exploitation, studies relating entrepreneurial orientation (EO) potentialities to strategic alliances (SA) remain limited.

Marino, Strandholm, Steensma, and Weaver (2002) related EO (risk taking, innovativeness and proactiveness) to SA by means of the moderating effect of national culture on the EO-SA relationship. Teng (2005) conducted a theoretical study focusing on SA by examining the paradigm of EO and Institutional Theory. Franco and Haase (2013) attempted to relate SA to Miller's (1983) concept of EO. Brouthers, Nakos, and Dimitratos (2014) described SA as a moderator between Miller's (1983) EO and international performance. Bouncken, Pluschke, Pesch, and Kraus (2014) investigated how firms' EO can affect joint product innovation within a vertical alliance and how this is influenced by increasing technological uncertainty and the absorption of knowledge from alliance partners. Jiang, Yang, Pei, and Wang (2014) establish a parsimonious model that uses Miller's view to link alliance-partnering firms' EO to their performance by means of two knowledge management practices: knowledge acquisition from partners and knowledge creation within organizational boundaries. Shu, Liu, Gao, and Shanley (2014) established a framework for knowledge spillover theory of entrepreneurship in firm alliances. Talebi, Rezazadeh, and Najmabadi (2015) investigated the delivery of SME entrepreneurship promises through their performance in building alliances. However, the studies above did not consider Lumpkin and Dess' (1996) perspective on EO as a multidimensional construct, nor did they consider, despite this apparent connection, how EO and top management team (TMT) interact, despite the apparent EO-TMT connection, and how this can influence SA.

Overall, we believe that large corporations and SME which effectively integrate EO to SA are well positioned to continuously create wealth. In sum, due to resource limitations, economy instability, and environmental uncertainties, many firms with an EO have SA as their best option to get access to financial capital, international expansion, resource basis, synergies, and to compete in the increasingly challenging environment of global economy. Therefore, the main goal of this article is to advance and contribute to the literature by looking into the multidimensional nature of the EO construct (Covin & Lumpkin, 2011; Lumpkin & Dess, 1996), thus generating a conceptual mechanism that can illustrate the impact of EO on SA and the role of TMT on the EO-SA relationship, thus bringing a new perspective into the EO literature (Brouthers et al., 2014; Franco & Haase, 2013; Marino et al., 2002; Menz, 2012; Teng, 2005; Shu et al., 2014). To achieve these goals,

we chose a quantitative approach to the matter, using structural equation modeling in our analysis conducted in 2014, in order to answer the following questions: is there a relationship between EO's five dimensions and SA? Is the relation between EO and SA influenced by the antecedent of EO (TMT)? In this article, in an effort to overcome some of the limitations of the existing theory, we develop a new approach to explain how firms with an EO relate to SA in their own local environments.

SAs represent a source of competitive advantage in the marketplace both for large corporations and small and medium-sized enterprises (SME) (Das & Rahman, 2010), mainly due to the economic value generated by the SAs of entrepreneurial companies (Alvarez & Barney, 2001). The greatest contribution of alliances to organizations is to provide them with the necessary resources and capabilities to compete in the marketplace, thus reducing entrance barriers (Hitt, Ireland, Camp, & Sexton, 2001; Robson, Skarmeas, & Spyropoulou, 2006). Nevertheless, more than half of all alliances are doomed to failure (Wittmann, 2007). Given SAs' level of popularity, it is surprising that we still lack an adequate understanding of what can actually prompt SAs under the paradigm of entrepreneurial behavior (Teng, 2005). A special issue of the Journal of Business Venturing (Alvarez, Ireland, & Reuer, 2006) dedicated to entrepreneurship and SA acknowledges the importance of alliances to entrepreneurial firms, but knowledge of the role that SAs play in entrepreneurship, or vice-versa, is still limited (Montoro-Sánchez, Ortiz-Urbina-Criado, & Romero-Matinez, 2009).

The research field on entrepreneurship needs more studies and empirical results to solidify and disseminate the importance of EO (Brown, Davidsson, & Wiklund, 2001) beyond its relation with firm performance. Covin and Lumpkin (2011) hypothesize that there is a gap in entrepreneurial configurations since only a few empirical studies actually use the five dimensions of the EO construct – i.e., autonomy (A), innovativeness (I), proactiveness (PA), risk taking (RT), and competitive aggressiveness (CA) – proposed by Lumpkin and Dess (1996). Even when these five dimensions are considered, they are usually approached as a unidimensional construct. Remarkably enough, EO is a latent construct under the multidimensional conceptualization (Covin & Lumpkin, 2011; Lumpkin & Dess, 1996). Therefore, the contributions the present study aims to give are: (i) to examine the relationship between Lumpkin and Dess' (1996) EO competitive value and its effects on firm growth patterns, leveraging resources, and capabilities through SA; (ii) to empirically confirm Covin and Lumpkin's (2011) propositions that EO is a multidimensional construct.

EO has become central in today's globalized economy and, generally, a firm's EO is attributed to its top management

(TM), which is responsible for making the company sustainable, overcoming ambiguity and uncertainty. To date, however, only one study (Simsek, Heavey, & Veiga, 2010) has examined TM as a predecessor of EO based on Covin and Slevin's (1989) conceptualization. Moreover, as far as we know, no study has ever related TMT as a predecessor of EO based on Lumpkin and Dess' (1996) view and connected EO to SA. Our concern is not with the psychological characteristics of TMT, but with the various aspects of how they work. i.e., how they conceive, design and operate their systems of human activities in a firm in order to succeed as either entrepreneurs or managers (Filion, 2000).

Excelling in EO and SA dimensions is not easy, because each dimension demands many different organizational skills. However, when a firm pursues both dimensions, it may become easier for it to achieve opportunities and advantages that are necessary for firm survival in today's globalized economy (Hitt et al., 2001; Ketchen, Ireland, & Snow, 2007). The reality of firms' behavior is complex, but at the same time interesting as TMTs' efforts to lead their firms to create wealth must deal with the challenges posed by EO, alliances and strategy (Hitt et al., 2001; Ketchen et al., 2007). We argue that fine-grained process-level research and a better theory about the mechanisms and processes that allow some TMs (but not others) to exploit firms' EO in alliances is needed (Schulze, 2007). Thus, this article offers a third contribution: to show the existence of a predecessor of EO (i.e., TMT) that affects the relationship between EO and SA. This helps to connect TMT into the entrepreneurship literature (Menz, 2012).

THEORETICAL BACKGROUND

Entrepreneurial orientation

EO has received significant empirical and conceptual attention in research of entrepreneurship, of which EO represents one of the few areas where a cumulative body of knowledge has been developed (Rauch, Wiklund, Lumpkin, & Frese, 2009), and the literature suggests that organizations with higher EO tend to perform better (Covin & Slevin, 1991; Miller, 1983; Rauch et al., 2009; Wiklund & Shepherd, 2005; Zahra & Covin, 1993). Therefore, the time is now to review and evaluate the cumulative knowledge about the relationship between EO and others variables besides firm performance (Anderson, Kreiser, Kuratko, Hornsby, & Eshima, 2014). EO is a strategic process, the conceptual domain of which includes some performance indicators and managerial preferences, beliefs and behaviors expressed by firms' TMs (Covin, Green, & Slevin, 2006). Organizations with an EO have several

advantages. We highlight the fact that EO has a positive impact on financial performance and is positively associated with growth, as EO implies the ability to discover new opportunities, facilitating the differentiation and creation of competitive advantages, the reduction or elimination of uncertainties and entrance barriers, among others (Covin & Slevin, 1991; Franco & Haase, 2013; Miller, 1983; Rauch et al., 2009; Teng, 2005; Wiklund & Shepherd, 2005; Zahra & Covin, 1993).

There are two main conceptualizations of the EO construct. Unidimensional, related to Miller's (1983) and Covin and Slevin's (1989) work, and multidimensional, related to Lumpkin and Dess' (1996) view. Miller's (1983) and Covin and Slevin's (1989) concept is the dominant view of EO in the literature as two meta-analyses showed (Rauch et al., 2009; Rosenbusch, Rauch, & Bausch, 2013). We therefore focus our discussion in the Lumpkin and Dess (1996) conceptualization, which needs more development. Anderson et al. (2014) outlined an EO reconceptualization suggesting that there is a nomological error in the EO literature due to a measurement model misspecification concerning Miller's (1983) and Covin and Slevin's (1989) conceptualization, so he questions the meaning of being entrepreneurial at firm level. According to Lumpkin and Dess (1996) and Covin and Lumpkin (2011), EO is a multidimensional construct that represents real phenomena and, as such, EO should be measured with a reflexive model. EO exists as a continuous variable or as a set of variables represented by five dimensions. Exhibit 1 presents the definitions for each EO dimension. Thus, we follow the Lumpkin and Dess' (1996) definition of EO, and Covin and Lumpkin's (2011) propositions that EO is a multidimensional construct.

The bibliometric study of Su, Zhai, and Landstrom (2015), based on the Social Science Citation Index, showed that the works on EO in North America formed a connected, dense cluster, the center of which was the study of Lumpkin and Dess (1996). The bibliometric study also revealed the interest in entrepreneurship as a firm-level behavior and orientation (Covin & Slevin, 1991; Miller, 1983), with studies that used quantitative methodology, like structural equation modeling and multiple regression. In Europe, EO appeared as a sub-group in the cluster focusing in the study of Lumpkin and Dess (1996), Covin and Slevin (1991), and Miller (1983). This reinforces the importance of EO to entrepreneurial research, as well as the focus of the present study, i.e., EO (Lumpkin & Dess, 1996) as a multidimensional construct.

The concept of entrepreneurship is valid for both SME initiatives and large corporations (Lumpkin & Dess, 1996). According to Brown et al. (2001), some businesses and environmental factors drive individuals and companies towards either an entrepreneurial or a purely administrative (conservative) behavior. Despite the importance of firm performance in

considering the external task environment, little is known about the mechanisms that enable large corporations and SME to benefit from a specific environmental arrangement (Rosenbusch et al., 2013) like an SA. This impairs companies' ability to create wealth, suggesting the need to identify ways to close the gap between EO and SA in order for companies to achieve strategic entrepreneurship (Ketchen et al., 2007).

Exhibit1. **Entrepreneurial orientation construct**

		Dimension	Definition
Lumpkin and Dess's (1996) construct	Miller's (1983) and Covin and Slevin's (1989) construct	Proactiveness (PA)	Related to processes, seeking to anticipate and act upon future needs, searching for new opportunities that may or may not be related to the current line of operations, introduction of new products/trademarks ahead of the competition (Venkatraman, 1989).
		Innovativeness (I)	Reflects the tendency of a company to be involved and to support new ideas, singularities, experiments and creative processes that may result in new products, services or technological processes (Lumpkin & Dess, 1996).
	3dimensions (Unidimensional)	Risk taking (RT)	Refers to the disposition to incur in elevated debts or to compromise a significant part of resources, aiming for high returns by seizing the opportunities and acting with courage even when a successful outcome is not certain (Lumpkin & Dess, 1996).
5 dimensions (Multidimensional)		Autonomy (A)	Refers to the independency of action of individuals or groups to come up with an idea or view and fully develop it (Lumpkin & Dess, 1996).
		Competitive aggressiveness (CA)	Reflects the company's willingness to challenge its competitors directly and intensively when entering a marketplace or to improve its market positioning outperforming its competitors (Lumpkin & Dess, 1996).

Entrepreneurial vision perceives SAs as a way to develop or create opportunities whether to reduce or eliminate uncertainties or entrance barriers, and those opportunities are related to new markets or product/technology innovation (Teng, 2005). The idea is that many SAs embody the entrepreneurial approach, which comprises risk taking, innovativeness, proactiveness, competitive aggressiveness and autonomy. Since an EO can mitigate many institutional pressures for conformity, it can encourage the emergence of a new business in a given field, including an SA. Obviously, having an EO does not guarantee the boosting of SAs (Teng, 2005).

Strategic alliances

SA refers to the strengthening of a company's key positions through associations with strategic third parties and suppliers, as well as to the company's ability to keep them over time as a means to reduce or eliminate uncertainties and entrance barriers (Sarasvathy, 2001). Thus, alliances can be even more important to firms with an EO than to other organizations (Alvarez, Ireland, & Reuer, 2006).

While SA theory has been used to explore the topic at different levels of analysis, a growing body of research supports the conception that alliances play an important role in influencing many outcomes and forming a competitive context for the sustaining, establishing and increasing of firms' wealth (Schulze, 2007). For example, large corporations tend to be able to set up competitive advantages, but sometimes they undermine their own ability to explore additional opportunities on an ongoing basis because their emphasis is often on operational effectiveness. On the other hand, SME opportunity-seeking capabilities can be strong, but their skills to get value from opportunities and competitive advantages are often restricted by their lack of market power and limited knowledge stocks (Hitt et al., 2001). As a consequence, SMEs may decide to establish some kind of SA with other SMEs in order to get access to the resources and capabilities of the alliance partner as a means of reducing risks, exploiting innovation, and increasing wealth (Ketchen et al., 2007).

SAs can be useful not only to large, well-established companies, but also to SMEs, providing them with opportunities to learn new capabilities in order to adapt to the technological discontinuities created by the introduction of some new technology, or to reduce the costs and risks associated with innovation (Hitt et al., 2001). Value creation is not an easy task, but it can be made easier by partners' prosperity as well as competitors' prosperity in a multi-organizational environment (Han et al., 2012). This is

particularly important to new institutions, which usually have limited access to resources. In other words, the prosperity of partners and/or competitors could increase their chances of survival and success (Hitt et al., 2001). One of the advantages of a partnership between an SME and a large corporation would be the access to financial capital or to the global market (Alvarez et al., 2006). In addition, a large portfolio allows exposition to a wider resource basis, thus providing expertise in the effects of scale on the organization's development and growth (Yli-Renko & Janakiraman, 2008).

In such a partnership, the parties can have non-economic benefits (learning opportunities, capabilities, and market development) and economic benefits (revenue). However, if a company decides to make an alliance in order to fill a strategic resource gap, then the company's performance standards must be well-developed before the alliance begins (Wittmann, 2007). Another kind of partnership that can bring benefits to a small or new company is the maintenance of a strong, close relationship with its clients (Yli-Renko & Janakiraman, 2008). Alliances can represent both risks and opportunities, particularly for SMEs with limited resources. An opportunistic behavior by one of the partners is frequently pointed as a primary cause of failure of SA purposes (Dickson, Weaver, & Hoy, 2006). Thus, an opportunistic partner is one of the main concerns in a collaborative alliance (Das & Rahman, 2010).

Despite these considerations, the association between alliances and entrepreneurship has received little attention from the academic community (Journal of Business Venturing, v. *21*, 2006). Particularly, the influence of EO on decision to enter an alliance is poorly studied (Teng, 2015; Journal of Business Venturing, *21*, 2006). In addition, EO is a key concept to entrepreneurship and should be studied within the perspective of SAs (Bouncken et al., 2014; Brouthers et al., 2014; Franco & Haase, 2013; Jiang et al., 2014; Marino et al., 2002; Shu et al., 2014; Talebi et al., 2015; Teng, 2005).

Conceptual framework and research hypotheses

The entrepreneurial orientation in strategic alliances

Research of EO in SA has used different approaches to study the relationship between EO and SA. Approaches include EO and SA (Marino et al., 2002), institutional theory and EO theory (Teng, 2005), collaborative entrepreneurship (Franco & Haase, 2013), international performance and marketing alliances (Brouthers et al., 2014), and knowledge spillover theory of entrepreneurship (Shu et al., 2014). Most of them (Brouthers et al., 2014; Franco &

Haase, 2013; Marino et al., 2002; Shu et al., 2014) found support for their hypotheses, but none of them investigated the direct effect of EO based on Lumpkin and Dess' (1996) view of EO as multidimensional construct, nor has any of them used TMT as a predecessor of firm EO.

Corroborating the theories on the importance of SA to entrepreneurial institutions, Han et al. (2012) showed that companies have significant and abnormally positive returns when their participation in collaborative innovation alliances is publicly announced. On the other hand, results by Montoro-Sánchez et al. (2009) indicate that financial resources and physical resources are not determinant in firms' decisions to make alliances. However, capabilities are the most important factors to the establishment of an alliance. Marino et al. (2002) showed that a unidimensional EO (RT, innovativeness, and proactiveness) was positively associated to SA. Franco and Haase (2013) confirmed that innovativeness was positively related with SA. Brouthers et al. (2014) affirmed that participation in research or marketing alliances had a positive moderating impact on the relationship between EO and international performance. Shu et al. (2014) found that focal firms' EO (RT, innovativeness, proactiveness and CA) was positively related to knowledge spillovers in alliances. Hence, we propose Hypothesis 1 (H1):

H1a: There is a positive association between autonomy (A) and SA.

H1b: There is a positive association between risk taking (RT) and SA, i.e., the higher the RT, the higher the SA.

H1c: There is a positive association between competitive aggressiveness (CA) and SA.

H1d: There is a positive association between innovativeness (I) and SA.

H1e: There is a positive association between proactiveness (PA) and SA.

Top management team as a predecessor of entrepreneurial orientation

TMT members are defined as the senior executives in the TMT responsible for one or more functional areas in their organizations (Menz, 2012). In the present study, we differentiate TMTs according to how they predominantly act, i.e., either as entrepreneurs or as managers (Filion, 2000). Since Hambrick and Mason's (1984) seminal article on the upper echelons perspective, research of TMT has developed into one of the most prominent areas of management, and scholars have recently begun to study

individual TMT members other than CEOs (Menz, 2012). In this context, an entrepreneur vision within TMTs plays an important role for firms, particularly firms with an EO.

Although firms encourage their employees to have an entrepreneurial behavior in their functions, it is not clear why some TMTs have an entrepreneurial behavior while others do not (Hashimoto & Nassif, 2014), or, most importantly, how TMTs can influence firms' EO (Simsek et al., 2010) and, consequently, firms' SA. In the case of SA, one of the reasons why managers choose not to make an SA is that they are focusing exclusively on private benefits (obtained by subsets of members of the alliance), aiming at value generation (e.g., shared benefits) (Dickson et al., 2006; Wittmann, 2007). The simplest reason why organizations decide not to establish partnerships is the lack of a strategy for alliances from the TM point of view. That decision is a strategic one (Wittmann, 2007). Therefore, the role of TMT is important to decisions about SA.

A superior business performance is more frequently achieved by internal leaders or groups of leaders (Burgelman, 1983; Lumpkin & Dess, 1996). Miller (1983) showed that, in the case of small entrepreneurial companies and planned companies (those which follow the path of bureaucratic structure, decision making, and planning), the high level of entrepreneurship was associated with presidents with a strong central authority who were able to act as leaders, with sound knowledge of markets and emerging technologies. Drummond and Stone (2007) complement this finding by showing that successful enterprises have management philosophies that operate through open, inclusive approaches, stressing a routine communication with no mediation between managers and workers, as well as flat hierarchy, autonomy, trust, and team work.

As Menz (2012) suggests, future studies on TMT members should focus on the nature of TMT members' work, TMT processes, TMT members' ties beyond the TMT, TMT impact, and TMT changes over time. This can involve scholars from different fields, facilitating the cross-fertilization of theories. Following Menz's (2012) suggestions, we argue that TMT is relevant to SA, but not as a moderator between EO and SA like some studies (Lumpkin & Dess, 1996; Messersmith & Wales, 2011) propose when analyzing EO and firm performance. We followed Menz's (2012) suggestion and agree with Simsek et al.'s (2010), Miller's (1983) and Burgelman's (1983) view that TM is the heart of the company, acting as a predecessor of the EO-SA relation. Although we affirm that TMT is important for decisions about SA, we argue that TMT is also important to develop and maintain an EO. Therefore, TMT is a predecessor of EO-based conditions to promote SA. Hence, we propose Hypothesis 2 (H2):

H2a: There is a positive association between TMT and autonomy (A).

H2b: There is a positive association between TMT and risk taking (RT).

H2c: There is a positive association between TMT and competitive aggressiveness (CA).

H2d: There is a positive association between TMT and innovativeness (I).

H2e: There is a positive association between TMT and proactiveness (PA).

We propose Hypothesis 3 (H3): There is a positive association between TMT and SA.

METHOD

To test our hypotheses, we conducted a quantitative survey. The present study used structural equation modeling (SEM) in order to assess the proposed model. SEM can offer significant opportunities for insights in the field of strategic management, particularly because the field's core constructs (e.g., strategy, entrepreneurship, performance) are multidimensional and the relationships among them are complex (Shook, Ketchen, Hult, & Kacmar, 2004). A key strength of SEM is that it allows concomitant psychometric and econometric analyses, being better suited to evaluate theoretical models (Fornell & Larcker, 1981). Partial least squares (PLS) modeling is particularly well suited to many of the problems studied in management (Robins, 2014). PLS is a modeling approach to SEM without any previous assumptions about data distribution. Thus, the PLS-SEM combination is a suitable alternative analysis technique whenever the sample is small, the theoretical support available is scarce (in the sense that it does not provide exhaustive explanations of dependent phenomena), the predictive precision is primary, and the specification of the correct model cannot be assured (Robins, 2014; Sarstedt, Ringle, & Hair, 2014; Wong, 2013). Furthermore, PLS-SEM plays an important role both in research and business practice (Hair, Ringle, & Sarsted, 2012). PLS-SEM has been used to estimate the conceptual model. We conducted the analysis using SmartPLS 2.0 M3 (Ringle, Wende, & Will, 2005).

Sampling and data collection

We obtained data from a cross-sectional survey with 101 firms in Brazil. The firms were randomly selected from the 1,000 largest Brazilian companies according to *Exame* magazine and the Serviço

Brasileiro de Apoio às Micro e Pequenas Empresas (Brazilian Micro and Small Business Support Service [Sebrae]) to represent companies in a range of industries, sizes, ownership structures and regions. We identified our target population, i.e., TMT members (owners, presidents, vice-presidents and/or directors). We chose to focus on this population because it is directly involved in the creation of firms' policies. We sent online survey emails to the 500 randomly selected firms containing a link to the questionnaire we designed to measure the five dimensions of the independent variable EO (A, RT, CA, I and PA), the dependent variable (SA), and EO's predecessor variable – TMT. Data collection was conducted in 2014. A total of 101 valid responses were analyzed, yielding an effective response rate of 20.20 %. The model is shown in Figure 1.

Measures

Established multiple-item scales were used and scale items were disposed at random to minimize survey method biases. Each scale item was measured using three seven-point Likert-type items.

SA was measured using three seven-point Likert-type items designed for this study based on SA theory (Dickson et al., 2006; Hitt et al., 2001; Sarasvathy, 2001): (SA1) "Usually, what my company (or business unit) uses (or focuses on) as its business strategy is: 1: strategic analysis, to a large extent (market research, long-term planning, etc.); 2: strategic analysis; 3: strategic analysis, to a small extent; 4: neither strategic analysis, nor partnerships; 5: partnerships, to a small extent; 6: partnerships; 7: partnerships, to a large extent (strategic alliances)"; (SA2) "In general, my company (or business unit) uses partnerships (alliances) as a business strategy to eliminate entrance barriers: 1: very rarely; 2: rarely; 3: more rarely than not; 4: neither rarely, nor often; 5: more often than not; 6: often; 7: very often"; and (SA3) "When establishing partnerships with other companies, my company (or business unit) seeks a relationship for: 1: the short term, to a large extent (the "partner" is just another client); 2: the short term; 3: the short term, to a small extent; 4: neither a short, nor a long term; 5: the long term, to a small extent; 6: the long term; 7: the long term, to a large extent (through a mutual, cooperative effort)".

The EO construct was measured using five subdomains. The autonomy dimension was measured using three seven-point Likert-type scales adapted from Dess and Lumpkin (2005) in a reverse translation: (A1) "In general, my company's managers work at independent units, like incubators, to reinforce creative thinking: from 1 (very rarely) to 7 (very often)"; (A2) "In general, my company's managers allow autonomous groups to conduct initiatives that are still not succeeding: from 1 (very rarely) to 7 (very often)"; (A3) "In general, my company's managers implement necessary changes in the firm's structure to stimulate new ideas,

thus facilitating the decision-making process: from 1 (very rarely) to 7 (very often)".

The risk taking dimension was measured using three seven-point Likert-type scales adapted from Miller and Friesen (1982) in a reverse translation: (RT1) "In general, my company's managers have a strong tendency towards projects that are: from 1 (very conservative, i.e., normal and safe return rate normal) to 7 (high-risk, i.e., with chances very high returns)"; (RT2) "In general and due to the nature of the business environment, my company's managers assume an attitude that is: from 1 (very cautious, i.e., the best is to explore gradually) to 7 (very dashing, i.e., risk actions are necessary to achieve the company's goals)"; (RT3) "When confronted with decision-making situations involving uncertainties, my company usually adopts an attitude that is: from 1 (very cautious, i.e., "wait to see" to minimize the probability of making a hasty decision) to 7 (very aggressive, i.e., maximizing the likelihood of exploring potential opportunities)".

The competitive aggressiveness dimension was measured using three seven-point Likert-type scales adapted from Covin and Covin (1990) in a reverse translation: (CA1) "In general, when dealing with competitors, my company takes the initiative and then competitors respond: from 1 (very rarely, i.e., the company typically responds to actions initiated by competitors) to 7 (very often, i.e., the company usually takes the initiative and competitors respond to it)"; (CA2) "In general, when dealing with competitors, my company is the first to introduce new products / services / technology / management techniques, etc.: from 1 (very rarely) to 7 (very often)"; (CA3) "In general, when dealing with competitors, my company typically assumes a competitive attitude to face competitors: from 1 (very rarely, i.e., the company tries to avoid confrontation with competitors, preferring a 'live and let me live' attitude) to 7 (very often, i.e., the company typically adopts a very competitive attitude to face competitors)".

The innovativeness dimension was measured using three seven-point Likert-type scales adapted from Miller and Friesen (1982) in a reverse translation: (I1) "In general, my company's managers usually give emphasis to: from 1 (much emphasis on product or service commercialization) to 7 (much emphasis on R & D, technology leadership, and innovation)". (I2) In the last three years, my company has launched new product or service lines: from 1 (very rarely) to 7 (very often)"; (I3) "Over the last three years, my company has changed its product or service lines: from 1 (very rarely, i.e., it has made changes) to 7 (very often, i.e., it has made several changes)".

The proactivity dimension was measured using three seven-point Likert-type scales adapted from Dess and Lumpkin (2005) in a reverse translation: (PA1) "Generally, my company anticipates

trends by identifying customers' future needs: from 1 (very rarely) to 7 (very often); (PA2) "In general, my company strives to be the 'first in', thus reaping all the benefits of being a pioneer in its field: from 1 (very rarely) to 7 (very often)"; (PA3) "In general, my company seeks to offer new products / services / technologies...: from 1 (very rarely) to 7 (very often)".

The TMT construct was measured using five seven-point bipolar items that evaluated the differences in an individual's operational methods concerning his/her human activity system at work either as a manager or an entrepreneur (Filion, 2000; Menz, 2012). In other words, when a TM chooses an option higher than 4, he/she has a high degree of entrepreneurial behavior. (TMT1) "When dealing with activity systems, I seek: from 1 (very often, to work efficiently and use resources effectively to achieve goals and objectives) to 7 (very often, to establish a vision and goals and identify the resources to make

goals a reality)"; (TMT2) "For me, when dealing with activity systems, the key is: from 1 (very often, to adapt to changes) to 7 (very often, to initiate the changes)"; (TMT3) "When dealing with a system of activities, I look for a work pattern that involves: from 1 (very often, rational thinking) to 7 (very often, imagination and creative thinking)"; (TMT4) "With regard to the structure of work, I seek: from 1 (very often, to operate within the existing structure) to 7 (very often, to define the tasks and functions that create a structure)"; (TMT5) "When dealing with activity systems, I try to work with focus on: 1 (very often, processes that take into consideration the environment in which the work is done) to 7 (very often, creative processes resulting from a different view of the environment)". Data regarding firm size and sector were reported by TMs, according to the parameters of Sebrae and Dieese (2008), firm size classifications being micro, small, medium, and large, according to the number of employees.

Figure 1. **Investigated model**
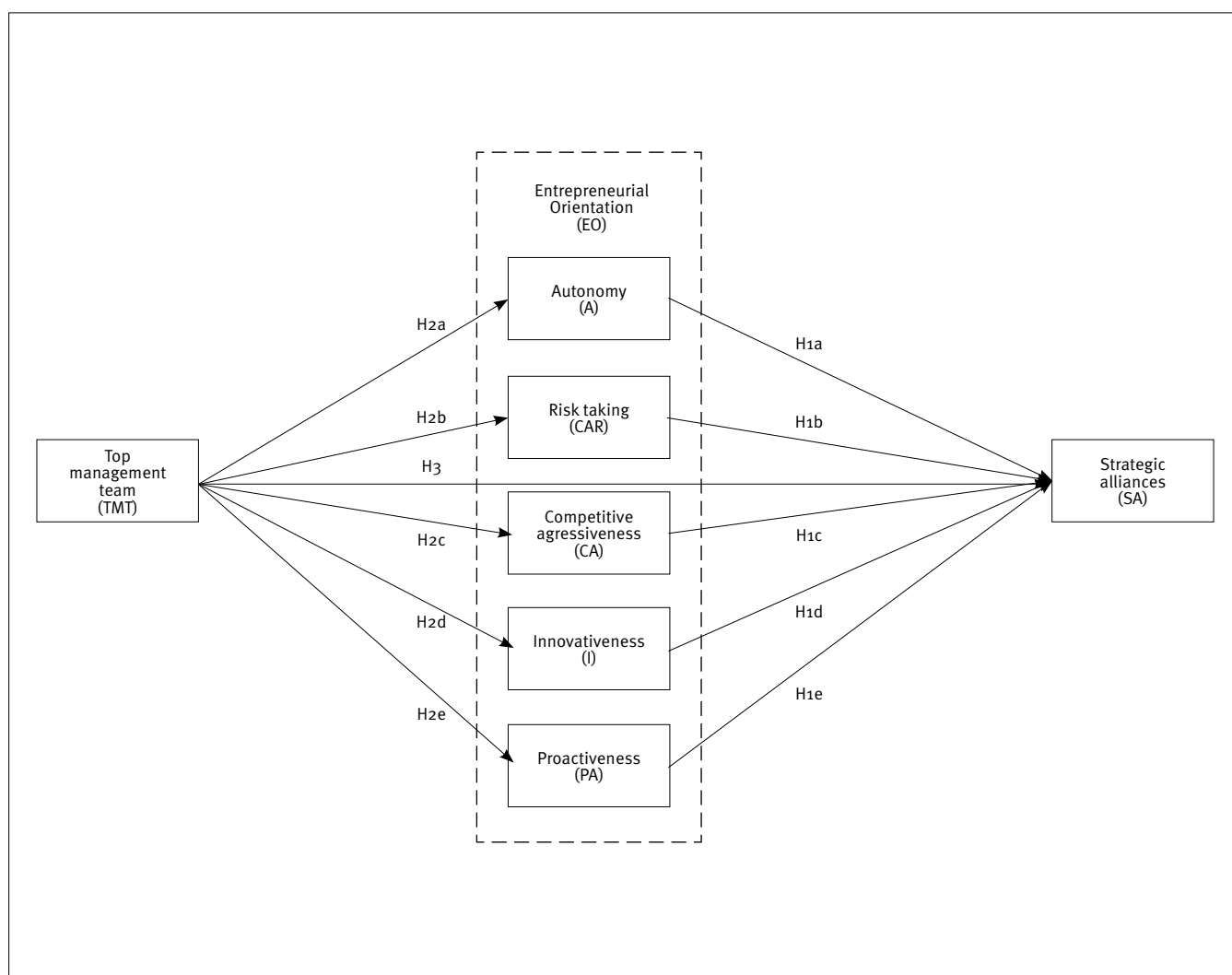
RESULTS AND ANALYSES

The demographic characteristics of the sample are shown in Table 1.

Table 1. **Sample**

Items	2014
Total number of companies	101 (100%)
Large companies	37%
Mid-sized enterprises	15%
Small and micro-enterprises	48%
Industry	13%
Commerce	22%
Services	66%

Sample and statistical power

An a priori analysis is conducted to determine the necessary sample size N for a test, given a desired α level, a desired power level (1 - β), and the size of the effect to be detected (Mayr, Buchner, Erdfelder, & Faul, 2007). To that end, the following values were considered: α = 0.05, average effect = 0.15, six predictors and statistical power of 80% (Hair, Hult, Ringle, & Sarstedt, 2013). According to G*Power software (Faul, Erdfelder, Buchner, & Lang, 2009), the minimum required sample amount is 98 cases. In this study, the sample contains 101 cases, which meets the a priori test requirement. A post hoc analysis is normally performed after a study has been conducted, once the sample size N is already a fact. Given N, α, and a specified effect size, this type of analysis returns the power (1 - β), or the β error probability of the test (Mayr et al., 2007). We performed a post hoc analysis of the sample. The effect of the population was 0.15, α = 0.05, N = 101 and 6 predictors. The value of the statistical test (1 - β) is 0.8183, therefore within the agreed value of 0.80 (Cohen, 1992).

Reliability of measures

Reliability results are presented in Table 2. Data indicate robustness in terms of internal consistency, as seen in the reliability formed by different measures ranging from 0.71 to 0.88, which exceeds the recommended value of 0.7 (Fornell & Larcker, 1981). Moreover, in line with Fornell and Larcker's guidelines, the average variance extracted (AVE) for each measurement exceeded 0.50.

Table 2. **Measurement model assessment**

Constructs	AVE	Internal consistency
SA	0.55	0.71
A	0.66	0.79
RT	0.64	0.84
CA	0.62	0.83
I	0.72	0.84
PA	0.71	0.88
TMT	0.72	0.84

Discriminant validity

Table 3 shows the results of discriminant validity evaluation of the scales. In all of the cases, the diagonal elements of the matrix, which represent the square root of AVEs, are greater than the elements out of the diagonal line, which supports the scales' discriminant validity.

Table 3. **Discriminant validity (correlations) of the construct variables**

Latent variable	SA	A	RT	CA	I	PA	TMT
SA	**0.74**						
A	0.39	**0.81**					
RT	0.40	0.51	**0.80**				
CA	0.26	0.45	0.43	**0.79**			
I	0.26	0.49	0.43	0.60	**0.85**		
PA	0.19	0.28	0.47	0.71	0.51	**0.84**	
TMT	0.37	0.32	0.34	0.27	0.18	0.21	**0.85**

Convergent validity

Convergent validity was evaluated by extracting the factors and factor loadings of each item for their respective latent constructs. Results (Table 4) indicate that every loaded item exceeded both the inferior (0.70) and superior (0.95) limits, i.e., for each item, the construct(s) corresponding to a specific item was/were the largest one(s).

Confirmation of sample validity

According to Hair, Anderson, Tatham, and Black (2009), factor loadings above 0.70 assure significance in samples in which the

number of records is above 60, which corroborates the sample size of 101 companies. Chin, Marcolin, and Newsted (2003) suggest that the desired sample size should be 10 times the number of constructs assessed. Considering that seven constructs were used in the present study, the minimum sample size would be 70 companies, and since our sample includes 101 companies, the sample size is suitable to the purposes of our study.

Table 4. **Factor loading (bold) and cross loading**

	SA	**A**	**R**	**CA**	**I**	**PA**	**TMT**
SA1	**0.78**	0.28	0.29	0.09	0.09	0.09	0.35
SA2	**0.71**	0.30	0.30	0.30	0.31	0.19	0.19
A1	0.35	**0.83**	0.38	0.34	0.42	0.26	0.25
A2	0.28	**0.79**	0.45	0.39	0.38	0.19	0.27
RT1	0.32	0.40	**0.80**	0.27	0.42	0.35	0.24
RT2	0.29	0.41	**0.80**	0.52	0.44	0.54	0.23
RT3	0.35	0.42	**0.80**	0.28	0.22	0.28	0.33
CA1	0.23	0.38	0.36	**0.91**	0.51	0.59	0.34
CA2	0.18	0.33	0.40	**0.73**	0.54	0.71	0.10
CA3	0.20	0.36	0.29	**0.70**	0.39	0.43	0.09
I2	0.18	0.36	0.34	0.62	**0.84**	0.53	0.20
I3	0.26	0.47	0.40	0.41	**0.86**	0.36	0.11
PA1	0.08	0.23	0.37	0.61	0.39	**0.82**	0.15
PA2	0.17	0.22	0.44	0.66	0.44	**0.90**	0.23
PA3	0.20	0.26	0.37	0.53	0.47	**0.80**	0.13
TMT2	0.32	0.31	0.28	0.23	0.19	0.18	**0.87**
TMT4	0.31	0.23	0.29	0.22	0.11	0.18	**0.83**

Variance inflation factor (VIF) was also calculated using the SPSS, to evaluate cases of multicollinearity. When VIF is above 5.0, there are problems of collinearity (Hair et al., 2013). In Table 5, we can see that VIF values – and all values – are below 5.0, and their tolerance values are higher than 0.2, so there are no collinearity problems (Hair, Ringle, & Sarstedt, 2011).

Table 5. **Collinearity of Indicators**

Constructs	Tolerance	VIF
Total number of companies	101 (100%)	
A	0.898	1.114
CA	0.923	1.083
RT	0.959	1.043
TMT	0.934	1.071
I	0.962	1.040
PA	0.949	1.053

Note: Dependent variable: SA

With regard to normality, studies and laboratory tests (Maroco, 2010) show that even results without a normal distribution may be acceptable provided that the ordinal element is greater than, or equal to, five points, and the distribution of frequencies approaches the bell curve, giving a continuous character to variables without major distortions in the adjustment. Thus, Maroco (2010) recommends that the kurtosis measures (ku) and univariate asymmetry (sk) approach zero and be no higher than 2 and 7, respectively. In the tests with this sample, although results are not normally distributed, none of the variables or the constructs alone has $|sk| > 2$ and $|ku| > 7$. Therefore, there is no extreme violation of normality.

Hypotheses testing (H1)

Results of the structural model without the influence of EO's predecessor variable (TMT) indicate that the beta coefficients of RT (beta = 0.280; $p < 0.10$) are positive and moderated significant. The other EO variables, i.e., A (beta = 0.173), CA (beta = 0.045), I (beta = 0.049) and PA (beta = -0.075), did not show a significant influence on SA. Therefore, the dimension RT of the EO construct had a positive influence on SA. Therefore, the Hypothesis H1b was accepted, considering Lumpkin and Dess' EO definition that in order for a firm to be considered entrepreneurially orientated, it needs to have at least one of the five dimensions of EO. The results of the structural model are shown in the Figure 2, where all beta values for all path coefficients are shown, and beta values for the significant paths are indicated.

Hypotheses testing (H2)

With regard to the effect of EO's predecessor variable (TMT), the results show that, except for innovativeness (beta = 0.180), all beta coefficients of the dimensions of EO are positive and significant: A (beta = 0.321; $p < 0.01$), RT (beta = 0.337; $p < 0.01$), CA (beta = 0.268; $p < 0.01$), PA (beta = 0.210; $p < 0.05$). As expected, virtually all of EO's dimensions (A, RT, CA, and PA) associated with TMT showed a positive relationship with SA. Thus, Hypothesis H2 was almost fully accepted. Therefore, TM's entrepreneurial behavior can be considered the company's heart, acting as a predecessor of the EO-SA relationship, as suggested by some authors (Burgelman, 1983; Menz, 2012; Miller, 1983; Simsek et al., 2010).

Hypotheses testing (H3)

Considering the direct effect of TMT on SA, results show that the beta coefficient of TMT has a positive and significant effect: TMT

(beta = 0.372; p < 0.01). Thus, the role of TMT is relevant to decisions on SA, and such decisions are strategic choices, since the simplest reason why firms do not make partnerships is the lack of a strategy for alliances from the TMT point of view (Dickson et al., 2006; Wittmann, 2007). Hypotheses H3 was supported.

Evaluating model fit

The present model explained 25.5% of the EO variance in SA. The model's explanatory power makes it representative of the strategy and entrepreneurship fields, since according to Cohen (1988) a $R^2 > 26\%$ indicates a large effect size and an excellent explanatory power.

Figure 2. **Structural model results**
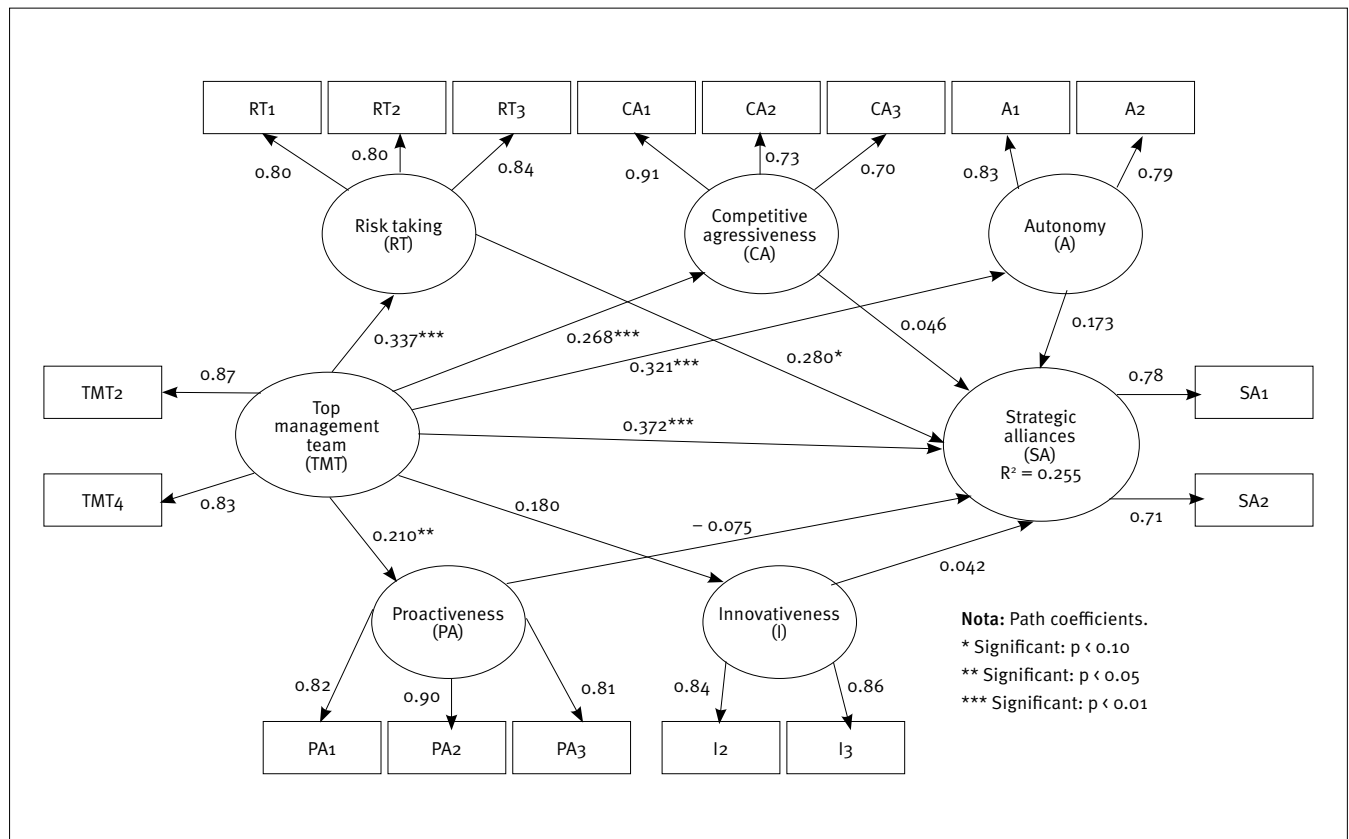
CONCLUSION AND IMPLICATIONS

The present study assumed the existence of a relationship between Lumpkin and Dess' EO (1996) concept and SA as a means to decrease business-associated risks. This relationship would be affected by firms' TMT, and EO would work as a multidimensional construct. In line with what was suggested by Marino et al. (2002), Teng (2005), Franco and Haase (2013), Bouncken et al. (2014), Jiang et al. (2014), Shu et al. (2014), and Talebi et al. (2015), the present study found a relationship between EO and SA as the RT dimension of EO showed a positive relationship with SA, although a moderate significant one. Results for the relationship between one dimension of EO (RT) and SA were affected by the TMT. In fact, four of the five EO dimensions (A, RT, CA, and PA) worked as mediators

between TMT and SA. Moreover, our findings corroborate Covin and Lumpkin's (2011) argument that EO is a multidimensional construct and would be influenced by the company's TMT.

Not all dimensions of EO affected SA, but that does not indicate that EO is not relevant to SA, considering Lumpkin and Dess' (1996) definition of EO, i.e., that in order for a firm to be considered entrepreneurially orientated, it needs to have at least one of the EO dimensions. Thus, TMT influenced four EO dimensions (A, RT, CA, and PA) and only RT moderately affected SA. One must also consider that, depending on real-life situations (social context, sector, company-size, country, etc.) other dimensions of EO could be present, as some studies have indicated. For example, Saxton (1997) showed that partnerships and features of the relationships between firms are relevant, and

that alliances are economic outcomes in a social context. Dickson et al. (2006) suggest that the resource base of a SME, measured by its size, can moderate the relationship between technology and the prevailing culture in its domestic market, raising concerns about opportunistic behaviors in a partnership with a SME. Lumpkin and Dess (1996) and Covin et al. (2006) indicate that industry and firm size can influence EO dimensions of interest.

In today's globalized world, where social, economic and political structures have been continuously shaken, acquiring new knowledge is increasingly necessary. In this perspective, the power to anticipate the future or minimize the risks associated with a business can be understood as one of the key factors for organizations' sustainability. This includes questions related with EO and SA, more specifically partnerships between firms (SA) driven by a TMT with an EO. As any firm ultimately relies on the strength, capacity and skills of the people that form it, knowing the key roles of TMT and EO, particularly RT, can be an advantage for SAs in the real business world.

Contribution to theory

This study empirically assessed cooperation as a means to put entrepreneurial concepts into practice and connected two areas of study, i.e., EO and SA, thus filling a theoretical and empirical gap that we identified in the literature. In order to find a relationship between Lumpkin and Dess' (1996) EO competitive value and its effects on companies' growth patterns, leveraging resources, and capabilities by means of SA, this article showed that RT is moderately associated with SA. This result reinforces the importance of Covin and Lumpkin's (2011) propositions that EO is a multidimensional construct. A full relationship between EO and SA was not found. However, this does not mean that no such relations were found. By using a multidimensional construct (Lumpkin & Dess, 1996), we showed that EO's RT can be relevant to decisions concerning SAs. This supports the view of Lumpkin and Dess (1996) that EO dimensions would be present in certain situations but not in others, depending on internal and external factors (Lumpkin & Dess, 1996; Saxton, 1997; Covin et al., 2006; Dickson et al., 2006), and that EO works in a multidimensional, reflexive way (Covin & Lumpkin, 2011).

This result indicates that investing in EO, particularly its RT dimension, could become important in order to promote SA. Obviously, TMT affects SA, but companies with well-developed RT capabilities could be more likely to support a decision to establish an SA and proceed to implement it. In this perspective, the present study contributes to consolidate the EO construct by using it in a multidimensional way and in a reflexive model in line with the work of Lumpkin and Dess (1996) and as suggested by Covin and Lumpkin (2011), since EO represents real phenomena. Lumpkin and Dess (1996) pointed out that researchers have failed to find consistency in relations with/perceptions of RT concerning entrepreneurship, whether in the form of creation of new businesses or as misleading relations between RT and performance. Furthermore, most enterprise-related studies refer to individual rather than company risks.

RT primarily resides at the individual level and is then carried to company level. Companies' RT can be shaped by the influence of individuals' risk perception, attitude, intention, and behavior. This applies to both large corporations and SMEs. Thus, the firm-level RT that seems to contribute to high performance in SA are: (1) a strong tendency to risky projects with a chance of high returns; (2) a bold approach in which big actions are necessary to achieve the company's goals; and (3) adopting an aggressive attitude to maximize the likelihood of exploring potential opportunities.

The present study aims to draw attention to TMT as a predecessor of the EO effect on the relationship between EO and SA. TMT affects SA, being associated with EO dimensions (A, RT, CA, and PA) related to SA; if only one EO dimension (I) is not associated with TMT, others aspects of our results for TMT are still relevant. These results can encourage firms to develop TMT in order to have an EO. If RT is moderately associated with SA, other dimensions could be associated with other corporate or business strategies (Covin et al., 2006; Dickson et al., 2006; Lumpkin & Dess, 1996; Saxton, 1997). Although views and approaches about the entrepreneur can differ, there are many points of convergence among them. This study provides evidence and insights on the potential benefits associated with closer connections between TMT and firms' EO and SA.

Implications

TMT is frequently faced with the difficult task of deciding whether to adopt an EO and establish an SA to reduce entrance barriers and business risks to prompt the sustainability of the firm. EO's main assumption is that companies with that attitude are more effective in recognizing opportunities and overcoming adversity. Moreover, in times of uncertainty, they tend to show a better performance over time. In this perspective, TMT plays an important role both in EO and SA, considering that the decision to establish a partnership is a strategic one from the TM point of view. A firm's first reaction to certain business environments can be to keep the same approach it has been using over the years. However, the evidence we gathered in our survey with 101 companies in various industries and our SEM analysis lead us to conclude that several firms show skills associated with various dimensions of the EO construct, although not necessarily all of the skills, and that EO

is related with SA and, therefore, OE and SA can and should be used as an approach to strategic management.

For academics, our ideas imply a new way of thinking strategic entrepreneurship, given our view of integrating two different subjects, i.e., EO (from the RT perspective) and SA. Our ideas also imply the need to approach research design from a broader perspective than has been applied by researchers so far. For example, there is a vast literature on EO and SA covering related diversification strategies, but this literature has ignored the opportunity of wealth creation that can emerge from linking RT and SA within a firm. Thus, our integration of EO and SA suggests a different approach to strategic entrepreneurship, which ensures that academics interested in explaining the relationship between EO and SA can capture both opportunity and competitive advantages within a particular research design.

For practitioners, given their interest in making their organizations sustainable and successful, the ideas presented here can provide a better, easier way to achieve their goals. A firm can benefit from partners with a strong EO through the sharing of knowledge that can lead to an alliance that can enhance performance. This implies that companies must assume RT in the pursuit of a partnership. As a means to promote an EO, we have two suggestions. Firstly, TMTs must cultivate a good relationship with team members in order to encourage them to generate ideas and identify opportunities. Secondly, TMTs must protect their entrepreneurs from punishment, should the latter's efforts fail, considering that employees with an autonomous entrepreneurial behavior already have an EO (Hashimoto & Nassif, 2014).

Limitations and future research

A few general reservations in this study should be considered. Firstly, our scales relied on subjective measures, although we took great care in our data analysis (by applying robustness checks) and biases reduction. Future research could verify the EO-SA relationship by using secondary data or combining survey and secondary data.

Secondly, while on the one hand, theoretical guidance on EO effectiveness suggests that EO-related outcomes should present moderation by internal organizational variables (Covin & Slevin, 1991; Lumpkin & Dess, 1996; Rauch et al., 2009), on the other hand, these variables could influence EO. However, we do not consider this limitation a critical one. We argue that EO is influenced by TMT's practices and philosophies, which can help explain SA. Thus, we believe that our framing is appropriate and sheds light on a theoretically meaningful EO-SA relationship, as it has long been advocated in the EO literature (Alvarez, Ireland, & Reuer, 2006).

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