ORGANIZATIONAL CULTURE AND ENTREPRENEURIAL ORIENTATION: EXAMINATION THROUGH A NEW CONCEPTUALIZATION LENS

Abstract

To enrich understanding of the causes of entrepreneurial orientation (EO), we examine whether and how EO is rooted in organizational culture. Following a new conceptualization of EO and based on data from 269 Mexican firms, we theorize and find that organizational culture is a strategic resource that firms can use to cultivate EO and this influence is more transmitted through firms' entrepreneurial behaviors than through managers' attitude towards risk. Further, this process is moderated by firms' strategic planning. We hope that our study demonstrates the promise of the new conceptualization of EO and stimulates more research towards the EO antecedent direction. We also hope that the results help improving the understanding and contextualization of EO in an under-studied area --Latin America.

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Introduction

Based on the expectation that entrepreneurship constitutes a key feature of high-performing firms, researchers have taken great efforts to confirm the positive performance implications of entrepreneurial orientation (EO) (Arzubiaga et al., 2018; Covin & Wales, 2012). Entrepreneurial orientation is viewed as a firm's decision-making tendency favoring entrepreneurial activities (Garcés-Galdeano et al., 2016; Gunawan, Jacob, & Duysters, 2016; Lumpkin & Dess, 1996). Logically, another important research step would be to investigate the antecedents that facilitate the degree of EO (Goktan & Gupta, 2013). Surprisingly, however, little knowledge has been accumulated on this topic (Rauch, Wiklund, Lumpkin, & Frese, 2009). This absence in the literature is striking because EO does not exist automatically (Covin & Slevin 1991; Da et al.2016). It is important for firms to understand how to foster EO and identify its central drivers.

Furthermore, recent scholars (e.g., Anderson et al., 2015; Wales, 2016) urge that it is time to propel EO conversation towards the antecedent direction. They speculate that the problem of nomological error in the literature of EO caused by measurement model misspecification may have unintentionally limited EO antecedent research. By assuming that all dimensions of the EO construct should share common antecedents, scholars could have unintentionally overlooked meaningful antecedents by erroneously thinking these factors to be inconsequential to the entire EO construct (Wales, 2016). Drawing from measurement theory, Anderson et al. (2015) outline an EO reconceptualization as a resolution to the likely nomological error (for a general discussion of EO measurement, see also Stambaugh, Martinez, Lumpkin, Kataria, 2017). Focusing on the debate of whether EO is an attitudinal construct, or a behavioral construct, or both, they propose a

reconstruction of EO in which the high-order EO construct is formed by two jointly necessary dimensions: the firm's entrepreneurial behaviors and its managers' attitude towards risk. They also show findings that although environmental hostility was not significantly associated with a first-order, unidimensional conceptualization of EO, a model utilizing the EO reconceptualization showed that hostility was negatively associated with a firm's entrepreneurial behaviors and unrelated to managers' attitude towards risk (Anderson et al., 2015). This new research approach has attracted attention and started to be adopted in later studies. Specifically, Eshima and Anderson (2017) has applied this reconceptualization in an attempt to examine the influence of firms' prior growth on their exhibition of future EO through the improvement of adaptive capability.

We intend to follow this emerging research path and use Anderson et al.'s (2015) valuable new lens to better understand the causes of EO. Of the various aspects that could be addressed, we focused on the influence of organizational culture, defined as a pattern of shared assumptions learned by members of a group as they solve problems (Schein, 1990, 1992). Various scholars have stressed that organizational culture could be an antecedent of EO (Dess & Lumpkin,1996). Covin and Slevin (1991) suggest that "the culture of an organization can strongly affect entrepreneurial posture" (p. 17). Likewise, Aloulou and Fayolle (2005) argue that "especially organizational culture, the nature of its climate and its practices of management" (p. 29) is a central antecedent of EO. To date, the literature, particularly empirical studies, that research this potential association has been scarce (Hayton, George, & Zahra, 2002; Fayolle et al., 2010). Under the lens of EO reconceptualization and adopting the organizational culture dimensions identified by Zahra et al. (2004), we propose that organizational culture contributes to EO and this effect is primarily through entrepreneurial behavior.

Considering that organizational culture affects EO in the context of a firm's own organizational processes, we further clarify the nature of this process by examining the moderating role of strategic planning; namely, "the process of determining the major objectives of an organization and the policies and strategies that will govern the acquisition, use, and disposition of resources to achieve these objectives" (Steiner, 1969, p. 34). Research has demonstrated that strategic planning could be an integrative device to connect the explicit and formal processes defining the organization's goals, strategy, and plans with their implicit organizational features in the form of culture (Prahalad & Bettis, 1986; Ketokivi & Castaner, 2004). We test the proposed relationships with data from a sample of Mexican companies representing various industries and with no more than 500 employees, and the majority (84%) being less than 250 employees, thus adhering to the common definition of small and mid-size companies.

Our study contributes to the EO literature in three ways. First, we are one of the first studies to use and validate the reconceptualization of EO and demonstrates its value in deepening the scarce literature about EO's antecedents. Second, we show how different organizational culture values may influence a firm's entrepreneurial behaviors, and also managerial attitude towards risk in our *post-hoc* test, in different ways and how this process could be subject to the moderating influence of strategic planning. Third, our survey data is from Mexico, a country in which EO has not yet been explored by researchers (Archibugi & Pietrobelli, 2003). Yet, as a Latin American emerging economy, Mexico's underdeveloped capital markets and weak corporate legal enforcement make EO extremely important for a firm's navigation in this developing and competitive environment (for the importance to study EO in international context or emerging economies see Rwehumiza & Marinov, forthcoming and Wales, Gupta, Marion, Shirokova,

forthcoming). Thus, the results in this study speak to an important set of firms previously ignored in the EO literature.

After introducing the reconceptualization of EO (Anderson et at., 2015), we discuss why organizational culture is more likely to be conducive to a firm's entrepreneurial behaviors than to its managerial attitude towards risk. Accordingly, we link the dimensions of organizational culture to entrepreneurial behaviors and examine the moderating role of strategic planning, while only investigating managerial attitude toward risk in a *post-hoc* analysis. After presenting the methodology and findings, we follow by a discussion of theoretical and practical implications.

Theoretical Background and Hypotheses Development

Reconceptualization of EO

Although scholars agree that firms are entrepreneurial because they exhibit entrepreneurial behaviors and demonstrate temporal consistency in this exhibition, there has been active scholarly debate on the ontological assumptions of the EO construct (Covin & Wales, 2012). A salient yet largely unexplored issue for strategic decision makers is whether EO is fundamentally a behavioral phenomenon or an attitudinal or dispositional characteristic (Covin & Lumpkin, 2011; Miller, 2011). The conceptualization provided by Miller/Covin and Slevin and the scale usually used to measure it include both behavioral and attitudinal components. In this approach, EO is defined as the shared variance between innovativeness, proactiveness, and risk taking (Covin & Wales, 2012). Measurement theory underlying this research approach suggests that commonalities exist across the components such that an antecedent should link to all three EO components (MacKenzie *et al.*, 2011). However, this assumption, could create a Type II nomological error in the identification of EO's contributing factors (Wales, 2016). "EO scholars have likely overlooked—or have incorrectly rejected—research models where a given antecedent failed to 'link up' with all of EO's

underlying components yet may be theoretically meaningful contributory factors to only one" (Anderson et al., 2015, p. 1582).

Accordingly, recent scholars point out that "time has come for the field to embrace complementary measurement approaches to the well-established psychometric approach advanced by Covin and Slevin (1989) for assessing firm EO" (Wales, 2016, p. 12). Indeed, an increasing number of studies suggest that attitude and behavior do not always covary. Glasman and Albarracin's (2006) meta-analysis found correlations between attitude and behavior ranging from -0.20 to +0.73. Theoretical arguments and empirical evidence about innovativeness, proactiveness, and risk taking suggest that these three components of EO may exhibit differing nomological relationships (George & Marino, 2011; Lumpkin & Dess, 2001). It is unlikely that the same phenomena encouraging behaviors always causally relate to attitude or proclivity (Fishbein & Ajzen, 1975; Rosenberg & Hovland, 1960). Accordingly, consistent with Miller (1983) and Covin and Slevin (1991), Anderson et al. (2015, p. 1580) define EO as "the joint exhibition of observed entrepreneurial behaviors and a managerial inclination at the strategic decision-making level favoring actions with uncertain outcomes". However, they view EO as a second-order, firm-level construct consisting of two lower-order dimensions: *entrepreneurial behaviors* and *managerial attitude towards risk*.

Entrepreneurial behaviors refer to "the firm-level pursuit of new products, processes, or business models (e.g., innovativeness) with the intended commercialization of those innovations in new product/market domains (e.g., proactiveness)" (Anderson et al., 2015, p. 1583). Anderson et al. (2015) consider entrepreneurial behaviors as a single latent construct incorporating both innovativeness and proactiveness. This proposition is based on the notion that innovation requires the development of new products, processes, or business models and proactiveness does not exhibit

unless a firm actually enters a new market before competitors and acts with expectation of future demand (Lumpkin & Dess, 2001; Schumpeter, 1942). Essentially, entrepreneurial behaviors must be observable.

Managerial attitude towards risk refers to an inherent managerial inclination of senior manager(s) that favors strategic actions involving uncertain outcomes (Anderson et al., 2015). Anderson et al. (2015) stress that a firm's entrepreneurial behaviors are not a perfect correlate to strategic decision makers' attitude towards risk. This argument is built upon March and Shapira's (1987) observation that "attitudes towards risk are usually pictured as stable properties of individuals" (p.1406). Ajzen and Fishbein's (1977) research about the attitude-behavior linkage found that a stable property (e.g., risk taking) is distinct from the behavioral manifestations of that property. Thus, the salient point is that managers' thinking about risk, and the organizational actions that embody risk, are conceptually distinct as the employment of the latter could be caused by environmental factors. Under Anderson et al.'s (2015) reconceptualization, the three traditional components of EO are restructured into two lower-order dimensions; that is, risk taking acts as an attitudinal dimension, and innovativeness and proactiveness integrate into one behavioral dimension. Both dimensions are fundamentally necessary for EO to exist. An *a priori* expectation exists that the factors predicting entrepreneurial behaviors and those predicting managerial attitude towards risk differ (Anderson et al., 2015).

Organizational culture and EO: under the reconceptualization lens

Although no clear consensus is available about the definition of organizational culture, Schein's (1990, 1992) view, which consists of underlying assumptions that organizational members share about appropriate behaviors and values, along with artifacts, practices, symbols, and myths, is widely accepted (Detert, Schroeder, & Mauriel, 2000; Jones, Jimmieson, & Griffiths,

2005). These shared conceptions act in a normative fashion to guide individual members (Detert et al., 2000). Organizational culture takes time to develop and change as it is a tied system of artifacts, values, and underlying assumptions (Zahra, Hayton, & Salvato, 2004).

Empirical studies have commonly categorized organizational culture based on values (Detert et al., 2000), an approach employed by the few scholars who have examined the influence of organizational culture on EO. For example, Brettel et al. (2015) and Engelen et al. (2014) have drawn upon the Competing Values Framework (Quinn, 1988; Quinn & Kimberly, 1984) to link four forms of organizational culture (group, hierarchical, developmental, and rational) with EO and its three traditional dimensions (innovativeness, proactiveness, and risk taking). They found that the various forms of organizational culture influenced the dimensions of EO in different ways and did not foster EO, per se.

We re-examine the association between organizational culture and EO with uniqueness on two facets. First, we follow Anderson et al.'s (2015) reconceptualization to consider organizational culture with respect to entrepreneurial behaviors, and investigate managerial attitude towards risk in a *post-hoc* test, instead of the traditional way in which the three dimensions (innovativeness, proactiveness, and risk taking) are combined. Second, we examine organizational culture using the four dimensions that Zahra et al. (2004) derived from a thorough review of entrepreneurial-supportive culture: individual versus group orientation; internal versus external orientation; centralization versus decentralization of coordination and control; and short- versus long-term orientation. Compared to the Competing Values Framework that classifies companies according to two dimensions (flexibility versus control and internal versus external perspective), Zahra et al.'s (2004) framework adds another vital dimension: a firm's temporal horizon, which considers that entrepreneurial activities typically demand long-term investments.

Under the lens of reconceptualization, although entrepreneurial behaviors such as innovation and novel market entry involve risk, the factors that encourage those strategic actions resemble organization-level and environment-level phenomena, which could facilitate (or diminish) their employment. In contrast, managerial attitude towards risk, which is an inherent managerial inclination of top managers, is considered to be more stable, perhaps an outcome of individual personality development (March & Shapira, 1987). Douglas and Shepherd (2002) have found that individuals' attitude about risk does not perfectly correlate with subsequent entrepreneurial action. Similarly, Anderson et al. (2015) have observed that a negative relationship existed between environmental hostility and entrepreneurial behaviors; however, the relationship between environmental hostility and managerial attitude towards risk was not significant.

Anchoring our theorizing in these insights, we posit that when organizational culture is causally adjacent to EO, it should primarily influence entrepreneurial behaviors and is less likely to influence managerial attitude towards risk. By nature, culture consists of underlying assumptions that organizational members share about appropriate behaviors (Detert et al., 2000; Rousseau, 1990). The idea that these shared conceptions act in a normative fashion to guide behaviors has resulted in culture being considered the "social glue" that binds organizational behaviors (Golden, 1992). Considering this, below we center around the linkages between organizational culture dimensions and a firm's entrepreneurial behaviors. We expect that a firm's organizational culture, in general, will not cause discernible changes to senior managers' attitude towards risk, since attitude is a more stable and inherent property (March & Shapira, 1987). We only investigate this dimension of EO in a *post-hoc* test.

Individual versus group cultural orientation. This dimension refers to the firm's vision about how work is most effectively and efficiently accomplished (Detert et al., 2000). In firms

with a group cultural orientation, knowledge is shared and individuals are rewarded when they cooperate and collaborate (Engelen et al., 2014; Brettel et al., 2015). In this type of culture, the collective belief is that only through collective effort can the best solutions be identified and tested. In contrast, in firms with an individual culture orientation more work is accomplished individually and the demonstration of individual excellence is encouraged and valued (Detert et al., 2000). In this culture, rewards and recognition of individual efforts could discourage firm members from collaborating and sharing knowledge/information (Zahra et al., 2004). The resulting trust and sharing of sensitive data and innovative ideas across members at group-oriented firms should facilitate effective utilization of knowledge and efforts, thus promoting the firm's innovativeness and proactiveness (Brettel et al., 2015; Burgelman, 1983).

That said, however, entrepreneurship also requires autonomy (Lumpkin & Dess, 1996). Burgelman (2001) argues that independent spirit is necessary for venture development. When firm members have the latitude to explore, the behaviors of seeking opportunity and advantage will be encouraged (Ireland, Hitt, & Sirmon, 2003). When group orientation is too salient, adherence to harmony within the firm, which is more like a clan, could increase the hurdle for the firm to engage in entrepreneurial behaviors because doing so inevitably change what firm members have agreed upon (Brettel et al., 2015; Engelen et al., 2014).

Therefore, while a group-oriented culture facilitates firm members' collective participation in entrepreneurial pursuit, a cultural orientation of individualism encourages the recognition of individual firm members' radical innovation (Herbig, 1994). These two opposing cultural forces need be balanced for a firm to successfully undertake entrepreneurial behaviors such as product innovation and market expansion. This could be why previous studies using the CVF did not find a clear relationship between group culture and EO (Brettel et al., 2015; Engelen et al., 2014); that

is, the relationship may not be linear and possibly only certain components of EO are subject to the influence of individual versus group orientation. This argument is also consistent with Zahra et al.'s (2004) findings that a curvilinear relationship existed between group orientation and entrepreneurial activities in family firms. Therefore, we propose:

> *Hypothesis 1: There is a curvilinear relationship between the organizational cultural dimension of group orientation and a firm's entrepreneurial behaviors. Moderate levels of group orientation are associated with the highest levels of entrepreneurial behaviors.*

Internal versus external cultural orientation. It refers to the beliefs about the relationship between a firm and its external environment. Firms with an external orientation search actively for ideas from outside such as customers and competitors (Detert et al., 2010) and expose employees to various sources of knowledge that can be used in developing innovative solutions for emerging problems. An external orientation can help firms uncover a broader array of information, improving their ability to identify opportunities of new products and processes and to commercialize them in new markets. Thus, externally oriented firms are likely to behave more entrepreneurially (Zahra et al., 2004).

In contrast, an internal cultural orientation fosters the development of knowledge that reside within firm boundary (Büschgens et al., 2013). In this type of culture, ideas usually arise from the intellectual capital within the firm (Detert et al., 2000). Organizational inertia may over time stifle the scope and frequency of innovative ideas (Kelly & Amburgey, 1991). So, an inward orientation could reduce a firm's opportunity to explore the innovative products or new commercialization methods fostered by its external environment (e.g., rivals' moves, changes in customer demand), thus lowering its undertaking of entrepreneurial behaviors. Consistent with this argument, evidence has demonstrated that firms with an external focus tend to be more active in entrepreneurial activities (Brettel et al, 2015; Zahra et al., 2004). Thus:

Hypothesis 2: There is a positive relationship between the organizational cultural dimension of external orientation and a firm's entrepreneurial behaviors.

Decentralized control cultural orientation. This dimension pertains to the firm's coordination and control practices. Firms with centralized decision making place power in the hands of a select few. Although some authors posit that centralized cultural orientation can give management more power to implement changes (Büschgens et al., 2013), more scholars suggest that this type of culture can discourage entrepreneurial activities (e.g., Engelen et al., 2014; Fayolle et al., 2010) because formal control concentrated at the top level could create organizational rigidity and lower employee motivation. In a centralized culture, firm members may not be motivated to recognize new opportunities or tactical problems because they lack the authority to act without top-level approval (Rickards, 1985). The one-way communication associated with centralized culture may also constrain the exchange of fresh information and entrepreneurial ideas, especially those from lower level employees who are closer to markets and operational details, which serve as the stimuli for exploiting innovative ideas. The lack of rich communication reduces firms' ability to identify new product and commercialization opportunities (Zahra et al., 2004). Even for the venture ideas that have been created by lower-level firm members, centralization can slow a firm's decision making to support those ideas (Brettel et al., 2015). All these practices could constrain entrepreneurial activities.

On the contrary, organizations with decentralized orientation encourage legitimate authority at different levels. The sharing of power helps leverage employees' various expertise in idea generation and execution (Kanter, 1983). In this kind of culture, employees are expected to feel empowered and be more willing to take initiatives. The utilization of employees' individual contributions is likely to bring in more opportunities for the firm to act innovatively and proactively (Miller, 1983; Pinchot, 1985). Considering this, we propose:

Hypothesis 3: There is a positive relationship between the organizational cultural dimension of decentralization and a firm's entrepreneurial behaviors.

Short- versus long-term time orientation. This final dimension is about a firm's orientation toward time (Deal & Kennedy, 1983). The time horizon of a firm helps determine whether its members apply long-term planning or focus primarily on the short term (Quinn & Rohrbaugh, 1983; Sashkin & Sashkin, 1993). Long-term orientation refers to the "tendency to prioritize the long-range implications and impact of decisions and actions that come to fruition after an extended time period" (Lumpkin et al., 2010:241), whereas a short-term orientation reflects a concern with the more immediate consequences of decisions and actions (Lumpkin & Bringham, 2011). Firms with short-term orientation tend to employ financial controls and strategic controls are more consistent with long-term orientation (Zahra et al., 2004).

Some researchers propose that long-term orientation is associated with conservative decisions which could mitigate against entrepreneurial behaviors (Schulze, Lubatkin & Dino, 2002). However, a more common expectation is that long-term orientation is conducive to entrepreneurial activities (Zahra, 1996). Strategic controls reflecting long-term orientation entail understanding the task at hand, the risks involved, and the potential tradeoffs between alternative ideas (Zahra et al., 2004), which are important because entrepreneurial activities often are chaotic and hard to predict (Kanter, 1983). Hence, this culture that favors patient investments and facilitates risk analysis is expected to support entrepreneurial behaviors (Hitt et al., 1996).

Financial controls reflecting short-term orientation are based on pre-designed performance quotas; success or failure depend on how the firm meets established parameters (Zahra et al., 2004). In this circumstance, managers and employees can be less motivated to pursue entrepreneurial initiatives as they involve long lead times and impose uncertainty on their short-term performance evaluation. Accordingly, financial controls can reduce firm members' willingness to withstand the

risks associated with entrepreneurial initiatives. Supporting this view, some researchers have found a positive relationship between strategic controls and entrepreneurial activities in Fortune 500 companies (Zahra, 1996) and family firms (Zahra et al., 2004).

> *Hypothesis 4a: There is a positive relationship between an organizational emphasis on strategic controls and a firm's entrepreneurial behaviors.*
> *Hypothesis 4b: There is a negative relationship between an organizational emphasis on financial controls and a firm's entrepreneurial behaviors.*

The moderating role of strategic planning

Strategic planning, as an integrative effort that helps aligning firm members with organizational priorities (Ketokivi & Castaner, 2004), has been the subject of much research (e.g., Kuratko & Audretsch, 2009; Wolf & Floyd, 2017). While findings of the relationship between strategic planning and firm performance have been inconsistent (Miller & Cardinal, 1994), researchers have found that strategic planning has great potential to play a significant moderating role (e.g., Sirén & Kohtamäki, 2016; Kellermanns & Eddleston, 2006) because it determines if firm resources are utilized in an explicit or haphazard process. Studies suggest that strategic planning shapes strategy development, including how firms formulate major problems, set objectives, analyze alternatives, and allocate resources (Hopkins & Hopkins, 1997; Shrivastava & Grant, 1985). Strong strategic planning signals clear setting and communication of desired organizational goals (Lorange & Murphy, 1984). Researchers have stressed that awareness of organizational goals is a prerequisite for firm members to effectively contribute to the firm's activities because such knowledge can give purpose to members and channel their efforts toward a common big picture (Ketokivi & Castaner, 2004).

We argue that strategic planning helps heighten the effect of cultural components on entrepreneurial behaviors. While group orientation facilitates entrepreneurial activities by motivating firm members to actively share knowledge and collaborate, strategic planning provides

individual members a better understanding of how organizational harmony would not be compromised by their autonomous actions if these actions are congruent with organizational priorities (Ketokivi & Castaner, 2004). This shared understanding will enable the firm to derive more benefits from the group-oriented culture to foster entrepreneurial activities while deferring its negative effect in terms of constraining firm members' autonomous exploration.

Similarly, while external orientation encourages firm members to search actively for new ideas from diverse sources for product and market development, clear strategic goals conveyed through strategic planning help to ensure that their information-seeking efforts are coherent (Arend, Zhao, & Song, 2017; Wolf & Floyd, 2017). This alignment would reduce unsuitable information collection so that the firm can receive more relevant and helpful information and be more effective in utilizing it to locate new product and commercialization opportunities.

In the same vein, while a decentralized cultural orientation encourages firm members' efforts in idea generation and execution, strategic planning guides individual employees to better understand where the firm is heading and reduces their personal biases (Ketokivi & Castaner, 2004). The unity of effort and involvement in idea creation and execution helps prevent the unnecessary contradiction across firm members, smoothing out the process of selecting optimal opportunities and pursuing them with actual entrepreneurial initiatives (Damanpour, 1991).

While long term orientation manifested in strategic controls favors patient investments in entrepreneurial activities, strong strategic planning helps managers and employees to ensure that those activities are selected with clear and consistent strategic intent so that the firm's limited resources are utilized in a planned manner (Chrisman, Chua, & Zahra, 2003). The efficient deployment of resources will help the firm to scale up and respond to more product and commercialization opportunities, thus strengthening the positive association between strategic

controls and entrepreneurial behaviors. The negative effect of the emphasis on financial controls, however, may be alleviated by strategic planning because the organizational priorities determined in strategic planning process would increase the firm's chance to better align short-term targets and performance quotas with its long-term desired goals (Wolf & Floyd, 2017). The enhanced alignment would reduce managers' and employees' concerns that engaging in long-term entrepreneurial initiatives will be deleterious to their short-term performance evaluations; therefore, they will be less likely to hinder the pursuit of these firm activities. Taken together, when organizational culture favoring entrepreneurial pursuit is accompanied by strong strategic planning, a firm's real entrepreneurial behaviors are more likely to occur. From this, we expect:

> Hypothesis 5: *Levels of strategic planning moderate the curvilinear relationship between the organizational cultural dimension of group orientation and a firm's entrepreneurial behaviors, such that the diminishing pattern at high levels of group orientation is weaker in firms with higher levels of strategic planning than in firms with lower levels of strategic planning.*
> Hypothesis 6: *Higher levels of strategic planning strengthen the positive relationship between the organizational cultural dimension of external orientation and a firm's entrepreneurial behaviors.*
> Hypothesis 7: *Higher levels of strategic planning strengthen the positive relationship between the organizational cultural orientation toward decentralization and a firm's entrepreneurial behaviors.*
> Hypothesis 8a: *Higher levels of strategic planning strengthen the positive relationship between the emphasis on strategic controls and a firm's entrepreneurial behaviors.*
> Hypothesis 8b: *Higher levels of strategic planning diminish the negative relationship between the emphasis on financial controls and a firm's entrepreneurial behaviors.*

Method

Sample

We used CEOs as key informants because they receive information from a wide range of departments, play a major role in molding the management process, and are therefore an informative source for assessing organizational variables (Kumar, Stern, & Anderson, 1993; Westphal & Fredickson, 2001). As the questionnaires were originally in English and translated into Spanish, a commonly utilized back translation procedure was applied (Brislin, 1980). As a

pilot test, we invited five CEOs to answer and comment on the questionnaire. The test showed that the wording was correct, and the structure of the questions was appropriate. Next, we used the online Qualtrics platform to administer the official surveys. Three different sources were used to identify firms and gather reliable information. The first was a database of firms and CEOs provided by the Entrepreneurship Institute *Eugenio Garza Lagüera* at the Monterrey Institute of Technology in Mexico (TEC). The second was TEC's business incubators at four campuses in Mexico. These institutions provided a list of companies with CEO contact information. The third was graduate students at Queretaro Campus of TEC and post-graduate students at TEC's Virtual University, who were CEOs of their firms. The total number of available contacts was 627.

Online questionnaires were delivered to each of the 627 CEOs and we received 431 replies. After removing incomplete questionnaires, 269 questionnaires were considered valid (42.90%). The sampling error is 6%[1], consistent with regular survey research (Särndal, Swensson, & Wretman, 2003; Patel & Read, 1996). We assessed potential nonresponse bias by utilizing Mann-Whitney tests to determine potential differences between early and late respondents. The assumption is that nonrespondents are more similar to late respondents than early respondents (Narasimhan & Das, 2001; Das & Joshi, 2007). No significant differences were discovered (*p-value* > 0.05) in type of industry and firm size,[2] mitigating the concern for nonresponse bias.

Measures

All constructs were measured on a 5-point Likert scale anchored by "1 = strongly disagree" to "5 = strongly agree." The Cronbach's alpha measures for every scale surpassed the threshold point of 0.7 (Nunnally, 1978). The construct items and the Cronbach's alphas of major constructs are listed in the Appendix.

[1] Confidence level: 95% (z = 1:96; p = q = 0:5).

2 Results of the Mann-Whitney test: Type of industry p-value=0.306 and firm size p-value=0.355

Dependent variables. Given that we grounded in Anderson et al.'s (2015) reconceptualization of EO, we followed their example and measured this dependent variable using the commonly employed scale designed by Covin and Slevin (1989). We performed a confirmatory factor model (CFA) to check the fit between our data and the reconceptualization. We operationalized entrepreneurial behaviors (*EB*) and managerial attitude towards risk (*MATR*) as two first-order constructs as Anderson et al. (2015) proposed. Consistent with Eshima and Anderson (2017) who applied this EO reconceptualization in their recent study, we did not model the two lower order constructs to a second-order EO construct because otherwise there is endogeneity in the structural paths between the lower order dimensions and the higher order EO. In addition, following their example, we freed the disturbance term covariance between the dimensions, reflecting their joint definition of EO's conceptual domain. CFA showed both good fit (χ^2 = 63.730(23), *CFI* = .949, *IFI* = .950, *TLI* = .920, *AGFI* = .906, and *RMSEA* = .081) and good standardized factor loadings (Hair, Black, Babin, Anderson, & Tatham, 2006), which suggests convergent validity (Kohli, Shervani, & Challagalla, 1998). Next, we compared this model where EO is operationalized in two dimensions (*EB* and *MATR*) to Covin and Slevin's (1989) original model in which EO is measured as a composite construct and all nine indicators load on the latent EO construct. The latter exhibits relatively poor fit (χ^2 = 170.948(27), *CFI* =.819, *TLI* =.759, *AGFI* =.778 and *RMSEA* =.141). This comparison suggests that our data fit better with the reconceptualization of EO that distinguishes entrepreneurial behaviors and managerial attitude towards risk.

Independent variables and moderator. Organizational culture dimensions were measured using Zahra et al.'s (2004) multi-item indexes. Group orientation (*Group*) was measured with four items but a reversed scored item dramatically reduced Cronbach's alpha. Recent studies alert that

reverse wordings could introduce ambiguities, making surveys more difficult for respondents and leading to increased levels of measurement error (Weijters & Baumgartner, 2012). Therefore, we excluded this weak item from subsequent analyses. The average value of the items for group orientation was squared to assess the hypothesized nonlinear relationship. External orientation (*External*) was measured with five items. Again, the reverse-scored item had to be dropped to improve Cronbach's alpha. Decentralized orientation (*Decentral*) was measured with four items; Cronbach's alpha was good. Strategic control (three items) and Financial control (three items) (*Strategic* and *Financial*) were used, respectively, to measure long-term and short-term orientation. Both had good Cronbach's alpha. The moderator, Strategic Planning (*SPlanning*), was assessed with Kellermanns and Eddleston's (2006) four-item scale, with satisfactory reliability.

Control variables. We controlled a series of variables that may influence findings but are extraneous to the research question. Since firm age (*Age*) could affect EO (Anderson et al., 2015), we controlled for it by the number of years between firm establishment and survey application. Because larger firms typically are less prone to entrepreneurship (Tsai, 2001; Zahra, et al., 2004), we controlled for firm size (*Small* = 10 to 50 employees, *Medium* = 50 to 250, and *Big* = more than 250), using *Micro* (less than 10) as the reference category. We controlled for industry type by categorizing the firms into *Manufacturing*, *Services, Retail*, or *Agriculture* and dummy-coded with Agriculture as the reference. Firm past performance (*Performance*) was controlled because prior performance can trigger either inertial processes or organizational change (Kellermanns & Eddleston, 2006; Eddleston, Kellermanns & Zellweger, 2012). Since objective measures are not available for privately held small- to mid-sized companies in Mexico, we used a subjective measure from CEOs. Subjective performance measures have been found to correlate highly with objective data (Dess & Robinson, 1984; Love, Priem, & Lumpkin, 2002; Venkatraman &

Ramanujam, 1987) and are often used in studies of emerging economies (Ling, Wei, Klimoski, & Wu, 2015). Following Obloj, Obloj, and Pratt, (2010), we asked respondents to assess their firms' position during the last two years versus their main competitors in terms of quality of products/services, market share increase, new market entry, and total profits. These four dimensions were averaged to form an overall performance score. We controlled for environmental dynamism (*Dynam*) because firms in dynamic environments need to more systematically explore opportunities (Ling, Simsek, Lubatkin, & Veiga, 2008). It was measured using five items employed in previous research (Lumpkin & Dess, 2001; Casillas, Moreno & Barbero, 2011).

To address the possibility that the organizational culture dimensions were artifacts of the *EB*, we utilized two instrumental variables, existence of the founder and number of directors in the Board, for organizational culture dimensions plus the squared term of Group. We tested for endogeneity by performing a 2SLS regression and calculating Durbin-Wu-Hausman chi-square and Wu-Hausman F (Hamilton & Nickerson, 2003). The non-significant F and chi-square test results indicated the nonexistence of endogeneity (Davidson & Mackinnon, 1983). These results show that reverse causality was not a concern (Group: $F = 0.54568$, $p = 0.46236$, and $X^2 = 0.66298$, $p = 0.37984$; Group Squared: $F = 0.63550$, $p = 0.42783$, and $X^2 = 0.77121$, $p = 0.41551$; External: $F = 0.23383$, $p = 0.63009$, and $X^2 = 0.\ 28526$, $p = 0.59328$; Decentral: $F = 0.63549$, $p = 0.42783$, and $X^2 = 0.77119$, $p = 0.37985$; Financial: $F = 0.05831$, $p = 0.80983$, and $X^2 = 0.07130$, $p = 0.78945$; Strategic: $F = 0.92464$, $p = 0.33931$, and $X^2 = 1.11786$, $p = 0.29038$).

Results

The means, standard deviations, and zero-order correlations are shown in Table 1. All correlations were under the recommended threshold of .65 (Tabachnick & Fidell, 2012). The variables were *z*-scored before creating the interaction terms (Aiken & West, 1991). The resulting

variance inflation factors (VIF) and condition indexes were well below the suggested thresholds of 10 and 30, except for the VIF of the quadratic term (Hair, Anderson, Tatham, & Black, 1999), which suggested that multicollinearity was not a concern. Following Podsakoff and Organ's (1986) suggestion, we performed a factor analysis with all items of the variables in our model including control variables. The first factor only explained 21.2% of the variance, far from the 50% threshold, and the fourteen identified factors with eigenvalues greater than 1 accounted for 67.5% of the variance. Also, we estimated a method factor of the multi-item constructs by utilizing confirmatory factor analysis (CFA). The one-factor latent model showed very bad fit (X^2 = 1759.978 (350), *CFI* = .525, *IFI* = .529, *TLI* = .487, *AGFI* = .591, and *RMSEA* = .123). All this suggested that common method variance was not likely to bias our data.

--Insert Tables 1 and 2 about here--

Hypotheses were tested using multiple regression analysis. As shown in Table 2, we entered the nine controls in Model 1. This model explains 38.7% of the variance of *EB*. To test Hypotheses 1, 2, 3, 4a, and 4b, we entered the four cultural dimensions and the quadratic term of *Group* in Model 2. This model explains 45.7 of the variance（ΔR^2 =.071) and F value was significant (p =.000). *Group* had a marginally significant influence on *EB* (b = -.609, p = .072). The effect of its quadratic term was also marginally significant (b = .599, p = .076). The literature has suggested that a validated curvilinear relationship must meet the following criteria: (1) the quadratic term must be significant and of the expected sign; (2) the slope needs to be sufficiently steep at both ends of the data range; and (3) the turning point must be located well within the data range (Haans, Pieters, & He, 2016; Lind & Mehlum, 2010). The positive sign associated with the quadratic term found in our sample differed from our expectation and was not sufficiently significant. We also found that the turning point fell outside of the range of the predictor,

suggesting that Hypothesis 1 about an inverted U-shaped relationship between *Group* and *EB* was not supported. *External* (b = .148, p = .016) and *Decentral* (b = .140, p = .017) were positively and significantly related to *EB.* These results provided full support for Hypotheses 2 and 3. The findings related to *Strategic* (b = .031, p = 0.573) provided no support for Hypothesis 4a, as *Strategic* did not have a significant effect on *EB*. Hypothesis 4b, which proposed a negative relationship between *Financial* and *EB,* was also not supported. Although the association was significant (b = .111, p = .047), the direction was not as predicted.

To test the moderating role of strategic planning, the moderator was entered in Model 3. *SPlanning*'s main effect was not significant. The interaction terms were entered in Model 4 (explaining 48.6% of variance, $\Delta R^2 = .027$, significant F value with $p = .045$). Inconsistent with Hypotheses 5, 7 and 8a, *Group, Decentral,* and *Strategic* did not significantly interact with *SPlanning*. But the interaction between *External* and *SPlanning* was significant (b = .159, p = .009), as was the interaction between *Financial* and *SPlanning* (b = -.166, p = .003). The two significant interactions were plotted in Figures 1 and 2. Figure 1 shows that the positive association between *External* and *EB* is stronger for firms with higher *SPlanning* than for those with lower *SPlanning*. A gradient test revealed that the positive slope between *External* and *EB* was significant when *SPlanning* was high (t = 3.980, p = .000), but not significant when *SPlanning* was low (t =.365, n.s.). These results were consistent with Hypothesis 6, which proposed that strategic planning strengthens the positive relationship between the cultural dimension of external orientation and a firm's entrepreneurial behaviors.

--Insert Figures1 and 2 about here--

Figure 2 shows that although *Financial* and *SPlanning* interact, the interaction pattern did not support Hypothesis 8b, which proposed that strategic planning diminishes the negative

relationship between financial controls and entrepreneurial behaviors. *Financial* had a positive effect on *EB* when *SPlanning* was low (t = 2.976, p =.003) and insignificant effect when *SPlanning* was high (t =-1.004, n.s.). In other words, *SPlanning* weakened a positive relationship between the emphasis on financial controls and a firm's entrepreneurial behaviors.

Post-hoc Tests

We performed additional tests to evaluate our *a priori* expectation, which we did not hypothesize, that organizational culture, in general, does not significantly influence senior managers' attitude towards risk. Specifically, we performed multiple regression analysis using *MATR* as the dependent variable. As shown in Table 3, after control variables, we entered cultural dimensions in Model 2. This model explained 32.7 of the variance (ΔR^2 = .102) with significant F value (p = .000). Contrary to our prediction, two cultural variables, *Decentral* (b = .238, p = .000) and *Financial* (b = .132 p = .034), were related positively and significantly to *MATR*. In Model 3, the moderator, *SPlanning*, was not significantly associated with MATR. Model 4 included the interaction terms. Only the interaction between *Financial* and *SPlanning* had marginal association with MATR (b = -.111, p = .079); the model did not significantly explain the outcome variable (p = .633). Thus, *SPlanning* did not significantly moderate the relationship between organizational culture and managers' propensity of risk taking.

--Insert Tables 3 and 4 about here—

To add more insights, we also performed multiple regression analysis using the latent *EO* construct, which included all the nine indicators, as the dependent variable (Table 4). As shown in Model 2, organizational culture variables, along with control variables, explained 47.7 of the variance in *EO* (ΔR^2 = .097) and the F value of the model was significant (p = .000). *Group* had marginally significant influence on *EO* (b = -.591, p = .075) and the effect of its quadratic term

was marginally significant (b = .598, p = .071). These results were not significant enough to justify a validated curvilinear relationship between *Group* and *EO* (Haans, Pieters, & He, 2016). *External* (b = .146, p = .015), *Decentral* (b = .193, p = .001), and *Financial* (b = .130, p = .017) were positively and significantly related to *EO* but *Strategic* was not. In model 3, the moderator, *SPlanning*, was not significantly associated with *EO*. In Model 4, the interaction between *External* and *SPlanning* (b = .147, p = .014) and that between *Financial* and *SPlanning* (b = -.161, p = .003) were significant. The model in a whole was only marginally significant (explaining 50.4% of the variance, ΔR^2=.025, F = 2.053, p = .059). A plotting showed that the positive association between *External* and *EO* was stronger for firms with higher *SPlanning* than for those with lower *SPlanning* (figure available from authors). According to gradient tests, this positive association was significant when strategic planning was high but not significant when strategic planning was low. A plotting also showed that *Splanning* weakened a positive relationship between *Financial* and *EO* (figure available from authors) and gradient tests suggested that the association between *Financial* and *EO* was significant and positive when strategic planning was low but insignificant when strategic planning was high. Comparing these additional results with our findings about EB and MATR, we can derive that the influence of *External* on general *EO* was primarily transmitted through *EB*. The effect of *Decentral* and *Financial* on *EO* was transmitted through both *EB* and *MATR*. Finally, the moderating role of *Strategic* was mostly transmitted through its interactive effect with *External* and *Financial* on *EB*. This *post hoc* analysis essentially lent support to our core argument that organizational culture influences EO, and the influence is more through firms' entrepreneurial behaviors than through their managers' attitude towards risk.

Discussion and Conclusion

In an attempt to enrich the understanding of the causes of EO, we examine the extent to which and how a firm's EO is rooted in organizational culture. Following recent suggestions (Anderson et al., 2015; Wales, 2016), we apply a new construction of EO, in which entrepreneurial behaviors and managerial attitude towards risk are viewed as dimensions that collectively form a firm's EO. Overall, our study demonstrates that organizational culture is a valuable strategic resource that firms can leverage to cultivate higher levels of EO and that this influence is transmitted more through the firm's entrepreneurial behaviors than through managers' attitude towards risk. More generally, this study shows the promise in using the reconstruction of EO as a new research lens to expand our understanding of EO's antecedents.

Theoretical implications

Our study is one of the first to build on the recent reconceptualization of EO (Eshima & Anderson (2017) is the only other example of this effort to our knowledge). Our data show better fit with the new conceptualization than with the traditional model. This result supports the argument that when examining EO it is important to distinguish, while emphasizing the joint exhibition of, observed entrepreneurial behaviors and managerial inclination favoring risky decisions. Complementing the South Korean data Anderson et al. (2015) used to develop the reconceptualization, our sample of Mexican firms provide support to the external validity of the reconceptualization. With this new lens we find that behavioral and attitudinal aspects of EO are influenced by organizational culture differently. This cautions that theoretical consideration is needed to justify the choice of conceptualization and operationalization of EO in future studies.

Our findings suggest that all four dimensions of organizational culture are more or less linked to firms' entrepreneurial behaviors, whereas only two are linked to managerial attitude

towards risk. Although we do not find support that group orientation has an inverse U-shaped influence on entrepreneurial activities, we note that this cultural dimension tends, overall, to be negatively associated with firms' entrepreneurial activities at a marginal level. One possibility is that in our sample the upside (i.e., trust and sharing of ideas) and the downside (i.e., groupthink and reluctance to change to maintain harmony) of group-oriented culture have been linearly increasing at a similar rate, thus offsetting each other and making the net effect of group orientation only marginal. Also, there is the possibility that more significant or curvilinear influences of group-oriented culture exist in certain types of firms. Our data collection focused on small- to mid-sized firms and did not distinguish between family and nonfamily firms. Some researchers (e.g., Zahra et al., 2004) have found that while group-oriented culture does not affect corporate entrepreneurship in nonfamily firms, its curvilinear effect is significant in family firms. Future studies might build upon this idea by comparing family and nonfamily firms and examining whether this cultural dimension's influence varies between the two. Also, it would be meaningful to collect data from both small-sized and large-sized firms and compare the effect of group-oriented culture between them.

As expected, external-oriented culture that exposes firm members to diverse sources of knowledge and organizational culture with greater decentralization contribute to firms' entrepreneurial behaviors. Surprisingly, strategic controls reflecting long-term orientation appear not to have a significant influence on firms' entrepreneurial behaviors, and the effect of financial controls, which are a proxy for short-term orientation, is significant. This finding echoes some researchers' suggestions to be mindful of the possible complexity in short- versus long-term orientation's influence. They note that a long-range perspective may not necessarily promote EO, since in some firms (especially family firms) it could lead the firm to hesitate to take actions that

involve uncertain outcomes and be afraid of bringing risk to the long-term welfare of the business (and the family) (Schulze, Lubatkin & Dino, 2002). In contrast, the emphasis on quickly increasing profitability and/or growth over long-term survival may encourage the firm to prefer bold venturing activities (Lumpkin, Brigham, & Moss, 2010). But are the bold entrepreneurial initiatives induced by financial controls necessarily conducive to firms' ultimate success? This is a question we do not have data to examine in the current study. Future researchers may complement our research by investigating subsequent performance implication of the entrepreneurial behaviors fostered in each type of organizational culture.

We have to acknowledge that although we found difference in the parameter estimates for the relationships between organizational culture dimensions and EO's two lower order dimensions (i.e., entrepreneurial behaviors and managerial attitude towards risk), the difference was not as significant as we anticipated. In addition to being associated with entrepreneurial behaviors, we find that two of the four culture dimensions (i.e., decentralization and short-term orientation manifested as financial controls) promote managers' propensity to take risk as well. One explanation for this unexpected finding is that while managers' orientations have been assumed to be relatively stable (Chen, Gully, Whiteman, & Kilcullen, 2000), recent research suggests that they might be invoked or reinforced via experience and feedback (DeRue & Wellman, 2009; Hirst, Van Knippenberg, Chen, & Sacramento, 2011). Accordingly, we speculate that when decentralization is high, managers' work experience associated with high levels of legitimate authority and the feedback they receive about their autonomous decisions might, over time, encourage their willingness to favor risky decisions. Similarly, financial controls emphasizing short-term outcomes may gradually elevate managers' risk inclination, as they see the necessity of taking an aggressive stance to respond quickly to competitive threats and achieve the temporary competitive

advantage emphasized in financial control system. Another explanation is that the Anderson et al. (2015) perspective might have imposed a stricter assumption about the behavioral versus attitudinal distinction than warranted. Eshima & Anderson (2017) pointed out this possibility when explaining the unexpected non-significant difference in the strength of the paths between firms' adaptive capability and the two lower order EO dimensions suggested by Anderson et al. (2015). In a whole, our findings show that both entrepreneurial behaviors and managerial attitude towards risk are subject to the influence of organizational culture; although the difference is less significant than anticipated, the former appears to be sensitive to more cultural dimensions than the latter.

We also discuss and demonstrate that strategic planning could play a moderating role when firms use organizational culture to cultivate higher levels of EO. Two of the three culture dimensions that display significant influence on entrepreneurial behaviors are moderated by strategic planning. The influence of external orientation is particularly salient in firms with high levels of strategic planning, implying that diverse sources of information accompanied by information-seeking efforts with clear strategic goals appear to be most beneficial for the firm's entrepreneurial actions. We also find that strategic planning weakens the positive relationship between financial controls and entrepreneurial behaviors, suggesting that clear objectives and roadmaps conveyed through strategic planning process can possibly help managers, who feel urged by financial controls to act boldly, to be more selective in entrepreneurial activities. With their intent to avoid the recklessly aggressive moves that are inconsistent with the firm's strategic goals, the association between financial controls and the firm's entrepreneurial behaviors can be alleviated. But the influence of decentralization is not moderated by strategic planning. Perhaps firms in which autonomy is viewed as legitimate and power is shared are so sensitive and responsive to product and market opportunities that the value of this cultural dimension persists

whether or not firm members have a common understanding of the firm's strategic goals. Again, future researchers may expand our study by examining whether the entrepreneurial initiatives fostered by decentralization-oriented culture are always of true value to the firm.

Practical implications

Our research suggests to firm managers that EO within their firms is manageable. A firm is not, per se, entrepreneurial or not entrepreneurial and organizational culture can be a useful lever in influencing EO. Our findings indicate that certain cultural values, particularly emphasis on decentralization and short-term orientation manifested in financial controls, can positively influence EO by facilitating both the firm's entrepreneurial behaviors and its managers' attitude towards risk. The dimension of external orientation can promote EO by enhancing entrepreneurial behaviors of the firm. It follows that managers wanting to increase EO should assess and adapt their firms' cultures based on our findings. They also need to establish or strengthen the firm's strategic planning. This way, the cultural dimensions' influence on EO can be more synchronized with the ultimate direction that the firm desires to achieve.

This implication might be particularly valuable for Mexican firms, which composed our sample. Mexican companies' involvement in entrepreneurial activities has, unfortunately, been relatively low and improved slowly. This is supported by the global innovation index (GII) in which Mexico was ranked 72nd in 2018, 74th in 2017, and 76th in 2016. Apparently, Mexican small and mid-size companies are still lagging in terms of being entrepreneurial oriented. In this situation, they need to identify and work on key factors to enhance their EO. Our study suggests that even if the managers' attitudes towards risk may be more stable and harder to change, the firm can still utilize appropriate organizational culture to promote EO by stimulating and intensifying the firm's entrepreneurial behaviors. They can further strengthen this influence through setting up the firm's

clear strategic planning. In addition, our study may provide insight to the policymakers at Mexico about considering ways to facilitate EO among businesses in the country. Providing assistance or training to small business managers about how to effectively develop and manage organizational culture may allow them to understand the best approach to leverage organizational culture to improve on EO. In fact, the Latin America region – an important world player among emerging economies (Martin & Javalgi, 2016) – in general has low propensity to undertake risky entrepreneurial and R&D activities in-house (Archibugi & Pietrobelli, 2003). In this line, our analysis of Mexico can also be useful for the policymakers and small and mid-size companies in other Latin American countries, given their similar institutional framework characteristics (Calderón-Martínez & García-Quevedo, 2013).

Limitations

We used the CEO as the key informant. Future researchers are encouraged to use multi-informant designs since CEO might perceive organizational culture differently than other firm members. Since our study was one of the first to apply the reconceptualization of EO, and given the scarcity of research, we focused on main effects. Future researchers might consider more fine-grained interactions among the culture dimensions specified in our model. While our theoretical model implies causality, it should not be inferred because our study is correlational. We cannot rule out the possibility of reverse/reciprocal causality (e.g., greater participation in entrepreneurial behaviors might have made it necessary for the firm to adopt greater decentralization). Well-designed longitudinal studies would help test for it. We examined four dimensions of organizational culture, possibly overlooking other cultural dimensions. Furthermore, it would be interesting to examine other contextual factors (e.g., family shareholding), which may moderate the influence of organizational culture on EO. At last, our data was generated in a single country:

Mexico. The results could have been limited to this particular country's situation and caution should be exercised in attempting to draw equal generalizations to other contexts.

Conclusion

To advance the literature of the antecedents of EO, our study applies a reconstruction of EO and examines the association between four organizational culture dimensions and the two components that collectively form a firm's EO; that is, entrepreneurial behaviors and managerial attitude towards risk. Our results largely, even though not fully, support our arguments that organizational culture contributes to EO and that the dimension of entrepreneurial behaviors is more sensitive to this influence than the dimension of managerial attitude towards risk, with strategic planning playing a moderating role in the process. We demonstrate the promise of the new EO conceptualization and how our understanding of EO antecedents can be enriched by it. This study also fills in a gap of an under-understood area of EO from Latin American emerging economies.

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Table 1
Means, standard deviations, and correlations

	Mean	*SD*	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1. *EB* [a]	3.217	.735																
2. *MATR* [a]	3.266	.819	.616**															
3. *Group*	4.052	.683	.316**	.319**														
4. *External*	3.953	.611	.436**	.369**	.461**													
5. *Decentral*	3.788	.649	.401**	.428**	.483**	.489**												
6. *Financial*	3.799	.835	.359**	.278**	.245**	.292**	.225**											
7. *Strategic*	3.885	.754	.274**	.189**	.288**	.243**	.266**	.440**										
8. *SPlanning* [a]	4.066	.709	.373**	.319**	.439**	.420**	.389**	.420**	.341**									
9. *Age*	23.70	22.82	.156*	-.006	.023	-.004	-.038	.153*	.160**	.013								
10. *Small*	.30	.460	-.009	.044	.005	.031	-.010	-.023	.065	.043	-.177**							
11. *Medium*	.22	.415	.084	.025	-.040	-.040	-.014	.013	.025	-.028	.078	-.348**						
12. *Big*	.16	.364	.226**	.044	.017	.042	.026	.280**	.166**	.161**	.533**	-.282**	-.228**					
13. *Manufacturing*	.28	.451	.092	.041	-.012	.015	-.075	.115	.063	.127*	.175**	.002	.086	.299**				
14. *Services*	.41	.493	-.027	-.003	.059	.031	.120*	-.054	.070	.103	-.219**	.031	-.112	-.191**	-.522**			
15. *Retail*	.27	.444	-.057	-.050	-.030	-.008	-.058	-.042	-.130*	-.187**	.078	-.067	.065	-.075	-.379**	-.503**		
16. *Performance*	3.853	.520	.535**	.385**	.415**	.535**	.409**	.320**	.227**	.454**	.029	-.017	.065	.114	.001	.039	-.041	
17. *Dynam* [a]	2.974	.755	.243**	.274**	.127*	.040	.124*	.008	.009	-.108	.050	.093	.009	-.067	-.102	.069	.024	.038

n = 269, ***p*<.05, ****p*< .01**

[a] EB = Entrepreneurial behaviors; MATR = Managerial attitude towards risk; SPlanning = Strategic planning; Dynam = Environmental dynamism.

Table 2
Results of Regression Analysis of Entrepreneurial Behaviors (EB)‡

	Entrepreneurial Behaviors (EB)			
Variables	Model 1	Model 2	Model 3	Model 4
Controls:				
Age	.014	.024	.028	.032
Small	.087	.079	.076	.096†
Medium	.128*	.138*	.138	.139*
Big	.222**	.188**	.186*	.206**
Manufacturing	.031	-.018	-.034**	-.050
Services	.004	-.060	-.076	-.069
Retail	-.016	-.063	-.071	-.064
Performance	.493***	.325***	.319***	.319***
Dynam [a]	.233***	.221***	.228***	.221***
Independent variables:				
Group		-.609†	-.607†	-.391
Group Squared		.599†	.588†	.364
External		.148*	.143*	.162*
Decentral		.140*	.136*	.142*
Financial		.111*	.103†	.074
Strategic		.031	.029	.052
Moderator:				
SPlanning [a]			.044	.059
Interaction Effects:				
SPlanning*Group				.202
SPlanning*Group Squared				-.121
SPlanning*External				.159**
SPlanning*Decentral				-.076
SPlanning*Financial				-.166**
SPlanning*Strategic				.038
ΔR^2	.387	.071	.001	.027
R^2	.387	.457	.458	.486
Adjusted R^2	.365	.425	.424	.440
F	18.133***	5.495***	.547	2.189*

n = 269, † $p < .10$; * $p < .05$; ** $p < .01$; *** $p < .001$
‡ Standardized regression weights
[a] SPlanning = Strategic planning; Dynam = Environmental dynamism.

Table 3
Results of Regression Analysis of Managerial Attitude Towards Risk (MATR)‡

	Managerial Attitude Towards Risk (MATR)			
Variables	Model 1	Model 2	Model 3	Model 4
Controls:				
Age	-.062	-.047	-.043	-.042
Small	.033	.035	.031	.045
Medium	.022	.039	.038	.038
Big	.048	.017	.014	.026
Manufacturing	-.006	-.044	-.063	-.074
Services	-.079	-.136	-.155	-.156
Retail	-.074	-.111	-.121	-.117
Performance	. 371***	.168*	.160*	.158*
Dynam [a]	.270***	.241***	.250***	.243***
Independent variables:				
Group		-.406	-.404	-.336
Group Squared		.443	.429	.349
External		.106	.100	.110
Decentral		.238***	.233***	.234**
Financial		.132*	.123†	.106
Strategic		-.011	-.013	.000
Moderator:				
SPlanning [a]			.053	.061
Interaction Effects:				
SPlanning*Group				-.141
SPlanning*Group Squared				.190
SPlanning*External				.088
SPlanning*Decentral				-.025
SPlanning*Financial				-.111†
SPlanning*Strategic				.002
ΔR^2	.225	.102	.002	.012
R^2	.225	.327	.329	.340
Adjusted R^2	.198	.287	.286	.281
F	8.351***	6.408***	.634	.721

n = 269, † $p < .10$; * $p < .05$; ** $p < .01$; *** $p < .001$

‡ Standardized regression weights

[a] SPlanning = Strategic planning; Dynam = Environmental dynamism.

Table 4
Results of Regression Analysis of Entrepreneurial Orientation (EO) ‡

	Entrepreneurial Orientation (EO)			
Variables	Model 1	Model 2	Model 3	Model 4
Controls:				
Age	-.015	-.002	.003	.006
Small	.074	.070	.066	.086
Medium	.099	.113†	.112†	.113*
Big	.176*	.140*	.137*	.156*
Industry	.020	-.030	-.049	-.065
Services	-.028	-.096	-.115	-.110
Retail	-.040	-.089	-.098	-.092
Perform	.495***	.296***	.288***	.288***
Dynam[a]	.271***	.251***	.260***	.252***
Independent variables:				
Group		-.591†	-.589†	-.409
Group Squared		.598†	.585†	.395
External		.146*	.141*	.158*
Decentral		.193**	.188**	.193**
Financial		.130*	.122*	.094†
Strategic		.018	.016	.037
Moderator:				
SPlanning[a]			.052	.066
Interaction Effects:				
SPlanning*Group				.087
SPlanning*Group Squared				-.011
SPlanning*External				.147*
SPlanning*Decentral				-.063
SPlanning*Financial				-.161**
SPlanning*Strategic				.027
ΔR^2	.381	.097	.002	.025
R^2	.381	.477	.479	.504
Adjusted R^2	.359	.446	.446	.459
F	17.677***	7.781***	.792	2.053†

n = 269, † $p < .10$; * $p < .05$; ** $p < .01$; *** $p < .001$
‡ Standardized regression weights
[a] SPlanning = Strategic planning; Dynam = Environmental dynamism.

Figure 1

Interaction between external orientation (External) and strategic planning (Splanning) for entrepreneurial behaviors

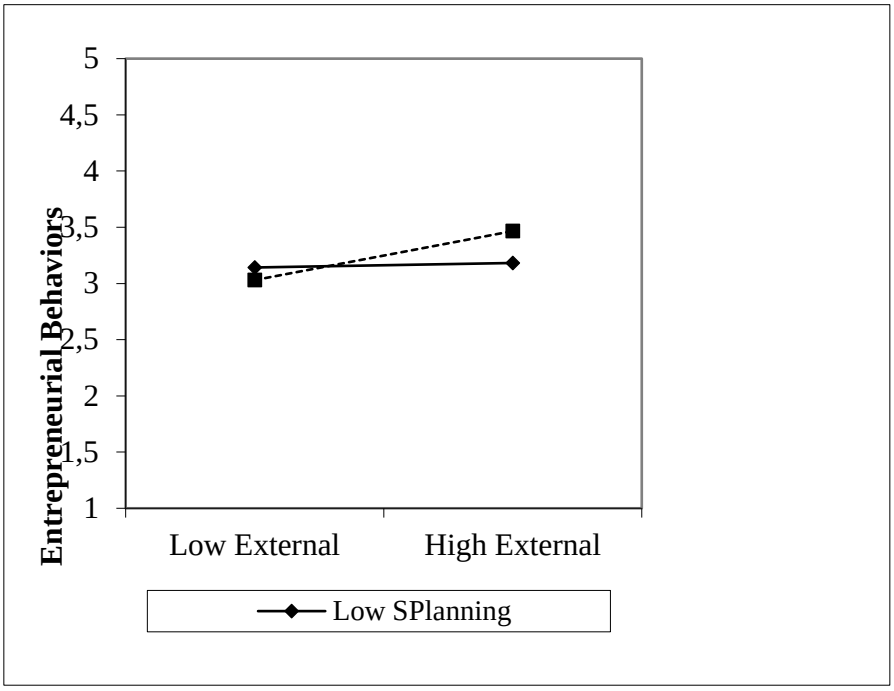

Figure 2

Interaction between financial control (Financial) and strategic planning (Splanning) for entrepreneurial behaviors