Leadership as a driver of entrepreneurship: an international exploratory study

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Abstract

Purpose – The purpose of this paper is to examine the influence of cultural leadership factors (charismatic/value-based, team oriented, participative, humane, autonomous and self-protective) on the rates of opportunity and necessity entrepreneurship.
Design/methodology/approach – The study integrates insights from institutional and cultural leadership theories to provide a fresh perspective to advance comparative entrepreneurship research. To test the hypotheses, the authors conduct a multiple regression analysis with observations from 34 countries, using data (from the year 2013) from the Global Entrepreneurship Monitor for the dependent variable and from Global Leadership and Organizational Behavior Effectiveness to create leadership factors as independent variables.
Findings – The results show that all the types of leadership considered in the study have a relevant effect on entrepreneurial activity. However, charismatic leadership has a greater effect on entrepreneurial activity, particularly on opportunity entrepreneurship. The research also shows that autonomous leadership has a negative impact on entrepreneurial activity, although, when it is moderated by the humane dimension, this relationship changes.
Practical implications – Since the alternative dimensions facilitate or inhibit the generation of new firm creation, it is critical for researchers, teachers and leaders to learn about and to foster such leadership types.
Originality/value – This research covers a gap in the cross-cultural evidence presented in the literature and suggests the integration of the concepts leadership and entrepreneurship.

Keywords Leadership, Institutional theory, Entrepreneurship, International study
Paper type Research paper

Introduction

The cross-country differences in the levels of entrepreneurship are persistent and cannot be explained by economic factors alone (Freytag and Thurik, 2010). Scholars have turned to national cultures as a possible explanation, but the results have been mixed (e.g. Hayton and Cacciotti, 2013; Stephan and Pathak, 2016). Stephan and Pathak (2016) suggested that these mixed results could be explained by cultural values being very broad and general concepts. Some authors have attempted to explore how different cultural characteristics affect entrepreneurship. For instance, Hechavarria and Reynolds (2009) approached culture through authority and well-being using information from the World Values Survey (WVS). These authors found that these two variables affect opportunity

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entrepreneurship positively but entrepreneurial activity driven by necessity negatively. Similar to these authors, Urbano *et al.* (2016) used the WVS to understand culture as a predictor of entrepreneurship. They found that those countries with a greater social progress orientation stimulate productive entrepreneurial activity (e.g. innovative and opportunity entrepreneurship). This kind of orientation contains elements such as those explored by Hechavarria and Reynolds (2009), namely voluntary spirit, survival vs self-expression values and power distance. The first two factors are beneficial for innovative and opportunity entrepreneurship and reduce necessity entrepreneurial activity, whereas the third element is harmful for productive entrepreneurship and increases necessity-driven entrepreneurship. Stephan and Uhlaner (2010) obtained parallel results, though in this case they emphasized the importance of a socially supportive culture for entrepreneurship. These works may serve to illustrate that culture can be approached from various perspectives. However, they all suggest one common factor, which can be negative or positive for entrepreneurship. Hechavarria and Reynolds (2009) explored authority as a value represented by rationality (which encourages opportunity entrepreneurship), whereas Stephan and Uhlaner (2010) and Urbano *et al.* (2016) found that the power distance in a society characterized by a strict vertical hierarchy destroys innovative and opportunity entrepreneurship. This evidence might suggest that, depending on the type of leadership that characterizes the people in a society, entrepreneurial activity could be encouraged or discouraged in a given country (Ensley *et al.*, 2006).

Considering all the coincidences between leadership and entrepreneurship (Van Hemmen *et al.*, 2013), this study links these two concepts and introduces different types of cultural leadership (e.g. charismatic/value-based, team oriented, participative, humane, autonomous and self-protective) as specific and more relevant proximal aspects of culture that explain the cross-national differences in opportunity and necessity entrepreneurship. Previous research has identified leadership as one of the most important organizational factors that influence entrepreneurial activity (Elenkov and Manev, 2005; Ensley *et al.*, 2006; Harrison *et al.*, 2018; Hornsby *et al.*, 2002); however, a few authors have specifically linked leadership and entrepreneurship (Cogliser and Brigham, 2004; Ensley *et al.*, 2006; Gupta *et al.*, 2004; Van Hemmen *et al.*, 2013; Vecchio, 2003). Drawing from institutional economics and leadership theories, this paper addresses this gap by examining the effect of cultural leadership factors on the rates of opportunity and necessity entrepreneurship across countries. On the one hand, institutional economics (North, 1990) is used, since the authors believe that both leadership and entrepreneurship emerge according to the context. On the other hand, the theory of social and economic organization (Weber, 1947) and the implicit leadership theory (ILT) are considered in the study of leadership, basically because they provide an understanding of social cognition foundations applied to leadership.

This study is based on a quantitative methodology and fundamentally uses data from international databases such as the Global Entrepreneurship Monitor (GEM) and Global Leadership and Organizational Behavior Effectiveness (GLOBE), considering a sample of 34 countries. Hence, the paper empirically investigates whether leadership has a strong effect on entrepreneurial activity. Of all the types of leadership, the charismatic dimension could have the greatest effect on entrepreneurship, especially opportunity entrepreneurship. It also establishes that the autonomous leadership dimension may have a negative influence on entrepreneurial activity; however, this relationship changes when it is moderated by the humane leadership dimension. The research contributions are expected to be both conceptual and practical for the fields of business and education. On the one hand, the findings support the idea that cultural leadership and entrepreneurial activity are linked to each other. In this regard, institutions matter for both leaders and entrepreneurs. On the other hand, the practical implications stem from the fact that the types of creative leadership

are beneficial for organizations, companies and governments and therefore should be studied and promoted. This could imply the inclusion of related topics, such as creativity, the analysis of risk, anger management and so on, in elementary and secondary school programs as well as in tertiary education.

The paper is structured as follows. The next section reviews some of the major research works into leadership and entrepreneurship; then, it explores the method followed, describes the sample and data sources and outlines the measurement of the variables used in the analysis. Afterwards, the results obtained are presented and described; finally, the main implications, conclusions and limitations of this study for future research and policy makers are discussed.

Theoretical background and hypothesis development

Institutional economics, developed mainly by North (1990), has proven to be a popular theoretical foundation on which to understand how individuals and organizations interact and make decisions. North (1990, p. 3) proposed that "institutions are the rules of the game in a society, or more formally, institutions are the constraints that shape human interaction." In this sense, institutions can be either formal – such as political rules, economic rules and contracts – or informal – such as codes of conduct, attitudes, values, norms of behavior and conventions, or rather the culture of a society.

Researchers have made an important endeavor to comprehend the cross-country variations of entrepreneurship by analyzing the way in which it is influenced by both formal (e.g. regulations) and informal institutions (e.g. culture) (Bruton *et al.*, 2010). In this regard, it has been proven that institutional economics is a solid foundation for understanding the dynamics of entrepreneurial activity (Bruton *et al.*, 2010; Thornton *et al.*, 2011; Urbano *et al.*, 2018; among others). Particularly, Urbano *et al.* (2018) found, through a literature review, that informal institutions, though less explored, may exert a stronger influence on entrepreneurial activity than formal institutions. Among the informal factors, these authors suggested that cognitive aspects, such as leadership, can be a worthy element for future research. Since risk and uncertainty caused by institutional differences exist, it has been suggested that leadership, as a particular institutional characteristic (Biggart and Hamilton, 1987), serves to address entrepreneurial activity better (Amrita *et al.*, 2018; Harrison *et al.*, 2016).

Although new business activity can be found in all countries, there are significant and stable differences over time in the levels of entrepreneurial activity (Acs *et al.*, 2008). There are even differences in the way in which entrepreneurship is approached and understood (Audretsch *et al.*, 2015). For instance, Shane (2012) highlighted a debate about entrepreneurship as a process or event. The former sets up conceptual bases (Shane and Venkataraman, 2000), and the latter enables a measurement (Acs *et al.*, 2008). Bosma (2013) suggested that, by understanding entrepreneurship as an event, it is possible to contribute massive evidence-based results to the field. This author, drawing on Reynolds *et al.* (2005), discussed the importance of comprehending how certain motives (i.e. opportunity and necessity) may drive the decision to become an entrepreneur and then understanding how each country is characterized in terms of entrepreneurship. Acs *et al.* (2008), by comparing entrepreneurship rates between two different data sets (the GEM and the World Bank Group Entrepreneurship Survey) concluded that an evidence-based analysis opens up the possibility to explore further the differences between developed and developing countries based on their institutional configuration. Stephan and Pathak (2016) regressed this type of entrepreneurial activity (particularly TEA) on different cultural factors, in which leadership was identified as a particular characteristic that drives individuals' decision to become an entrepreneur.

Even though Weber (1947) did not use the term "institution," his notion of cultural rules or systems is close to the current understanding of the concept of an institution

(Biggart and Hamilton, 1987). The interpretive approach of Weber highlighted the idea that action is social because the actor attaches a subjective meaning to it (Wolfgang, 2008). Weber (1947) conceptualized ideas about legitimate rule to define charismatic leadership as a form of legitimate authority derived from ecclesiastic divinity. Similar streams have also been suggested in the seminal literature. For example, Lewin *et al.* (1939) experimentally explored how groups react depending on the manner in which leaders behave in terms of authoritarianism or participative decisions. Likert and Kahn (1956) reached a similar conclusion, suggesting that firm performance increases even more when participative leaders are present. Hersey and Blanchard (1969) proposed that, as leaders become older, the leadership should engage in more inclusive and participate action rather than task orientation. Although the concept of charisma has been integrated with leadership, it did not gain noteworthy attention in the organizational discipline until Bass (1985), Bennis and Nanus (1985) and Burns (1978) drew attention to the construct. Since the late 1980s, theories of transformational and charismatic leadership have been in the ascendant. Bass (1985, 1996) suggested the version of transformational leadership theory that generates most of the research nowadays (cf. Braun *et al.*, 2013; Dionne *et al.*, 2004; Messersmith and Yi-Ying, 2017; Vaccaro *et al.*, 2012; among others). They defined transformational leadership primarily in terms of the leader's effect on the followers and the behavior adopted to achieve this effect. This theory presents leadership through three higher-order factors: transformational leadership, transactional leadership and corrective leadership (Avolio *et al.*, 1999).

It has also been suggested that most individuals have their own ideas about the nature of leaders and leadership. This approach has been studied under the rubric "implicit leadership theory or social cognition theory applied to leadership" (House *et al.*, 2004). Hence, the ILT deals with the constraints and guidance of leadership, the acceptance of leaders and the perception of leaders as influential, acceptable and effective (House *et al.*, 2004). The ILT has also been used in attempts to explain different types of leadership and perceptions (Pekerti and Sendjaya, 2010). This theory therefore extends to the cultural level by arguing that the structure and content of these belief systems will be shared among individuals in common cultures.

House *et al.* (2004) identified six global leadership dimensions. First, the team-oriented dimension emphasizes effective team building and the implementation of a common purpose or goal among team members. Second, the participative dimension reflects the degree to which managers involve others in making and implementing decisions. Third, the humane dimension stresses supportive and considerate leadership. Fourth, the autonomous dimension is characterized by an independent, individualistic and autonomous approach to leadership. Fifth, the self-protective dimension emphasizes procedural, status-conscious and "face-saving" behaviors and focuses on the safety and security of the individual and the group. Finally, the charismatic/value-based dimension reflects the ability to inspire, to motivate and to expect high performance outcomes by holding firmly onto core values. Den Hartog *et al.* (1999) supported the hypothesis that specific aspects of charismatic/transformational leadership are strongly and universally endorsed across cultures. This research focuses specifically on charismatic and autonomous leadership behaviors, believing that these types are conceptually the most closely related to entrepreneurship (Stephan and Pathak, 2016). Authors such as Coker *et al.* (2017), Gupta *et al.* (2004), Ling *et al.* (2008) and Muralidharan and Pathak (2018) conducted studies in a similar direction, as they provided evidence on the association between leadership (particularly charismatic and autonomous) and entrepreneurship. Although these authors focused their analysis on social and corporate entrepreneurship, this evidence may suggest that entrepreneurs are characterized by these types of values and therefore their outcome can be differentiated in terms of either charisma or autonomy.

Thus, grounded on institutional economics, the intersection between leadership and entrepreneurial activity enables us to raise questions concerning, first, how these two factors are related across countries and, second, which of the different leadership types

positively and negatively relate to entrepreneurship driven either by opportunity or by necessity. Drawing on Braun *et al.* (2013) and Stephan and Pathak (2016), who applied different quantitative techniques, this paper starts by analyzing leadership and entrepreneurship as general concepts. Afterwards, supported by the extant literature, it delves into the different nuances of leadership and entrepreneurial activity. While being useful within the conceptualization of entrepreneurial leadership, the interaction between charismatic and autonomous values is broad and undefined. With the aim of addressing this issue, the paper explores theoretically how these interactions affect entrepreneurship to test empirically whether the hypotheses can be rejected across countries. The next subsections address the possible influence that leadership types might exert on entrepreneurial activity.

Leadership and entrepreneurship

Leadership and entrepreneurship have been conceived as a distinctive set of underpinning traits, behaviors and competencies (Engelen *et al.*, 2015). These fields have undergone similar development in many ways (Cogliser and Brigham, 2004; Ensley *et al.*, 2006), although the existing research has largely analyzed leadership and entrepreneurship separately (Van Hemmen *et al.*, 2013). Some scholars might argue that entrepreneurship is merely leadership in a special context (Vecchio, 2003). The underlying premise in entrepreneurship research is that it is the entrepreneur (who is at the same time the leader) who makes the difference in a new venture's success, either through his or her risk-taking propensity (e.g. Stewart and Roth, 2001, 2004) or through his or her ability to recognize opportunities that others do not (e.g. Alvarez and Busenitz, 2001). Vecchio (2003) integrated leadership and entrepreneurship to explain effectiveness in a new firm, while Gupta *et al.* (2004) suggested and defined the construct of entrepreneurial leadership. Ensley *et al.* (2003, 2006) focused on the impact of entrepreneurial leadership behavior on new venture performance. In this sense, researchers have provided a treatise on the importance of leadership by arguing that the effectiveness of a leader is a major determinant of the success or failure of a group, an organization or even an entire country (Dunne *et al.*, 2016; Fiedler, 1996). In this regard, Bass and Bass (2008) suggested that leadership and management seem to have a substantial effect on some organizational outcomes, such as innovation processes (Kang *et al.*, 2015; Norbom and Lopez, 2016), entrepreneurship (Elenkov and Manev, 2005; Ensley *et al.*, 2006; Simsek *et al.*, 2015; Zhou, 2016) and community entrepreneurs (Lyons *et al.*, 2012). Other authors, such as Harrison *et al.* (2016), Leitch and Harrison (2018) and Leitch and Volery (2017), have analyzed the existing literature on entrepreneurial leadership. They have suggested that effectively these two concepts are recursively related to each other, though few studies exist at the theoretical and empirical levels. Harrison *et al.* (2016) raised ideas related to the need to understand entrepreneurs characterized by leadership, as they constantly face uncertainty and risk. Similarly, Leitch and Volery (2017) suggested that, to identify and exploit opportunities, entrepreneurs must be equipped with leadership skills. In summary, it is claimed that leadership affects the method of achieving entrepreneurship. Accordingly, the following hypothesis is formulated:

H1. Leadership is positively related to entrepreneurship.

The prior literature has shown that leadership is an important characteristic and value with which entrepreneurs are equipped. Some seminal works, such as those by Lewin *et al.* (1939) and Likert and Kahn (1956), have suggested that participative and team-oriented leaders bring important benefits for companies, which will tend to grow faster than other firms with different leadership styles. Hisrich *et al.* (2017) stated that those strategies proposed within a company respond quite often to the type of entrepreneur and his or her

leadership paradigm toward a participative or individual view. In this regard, it is possible to think that leaders and managers vary in the way in which they deal with the dilemma of autonomous leadership at one extreme and democratic or participative leadership at the other. The distribution of power can be measured indirectly by calculating how much is delegated to the less powerful and how much autonomy and freedom leaders have to choose how to operate in the work setting (Bass and Bass, 2008). Autonomous leadership means taking full and sole responsibility for decisions and full control over followers. Although investigations use many terms with meanings that do not entirely overlap, the correlations are generally high among the descriptions of various autonomous or authoritarian ways of organizing tasks (Bass and Bass, 2008). This behavior has also been described as directive (Bass and Barrett, 1981). Autonomous or directive leadership implies that leaders play an active role in problem solving and decision making and that they expect their followers to be guided by their decisions. Stephan and Pathak (2016) provided evidence on self-productive leadership and entrepreneurial activity. According to these authors, these kinds of leaders tend to work individually and support low levels of risk and uncertainty: characteristics that ultimately affect entrepreneurial activity. Gupta *et al.* (2004) and Muralidharan and Pathak (2018) also suggested that autonomous leadership might affect entrepreneurial activity negatively, though they excluded this variable from their analysis precisely because of this negative influence and its low explanatory capacity. Coker *et al.* (2017), at the theoretical level, concluded that societies characterized by autonomous leadership tend to decrease the level of entrepreneurial activity oriented toward social purposes.

Contrary to an individualistic feature, at the other extreme, the participative, democratic and team leadership styles refer to sharing in the decision process. Participative leadership and team leadership appear to be commonly accepted as a viable way to encourage the managers and employees in organizations to work together more productively (De Jong and van Witteloostuijn, 2004). There are studies that have proposed the potential of participative management (Eisenhart, 1989), suggesting that leaders who adopt democratic or participative styles are more successful than others (Ogbonna and Harris, 2000). Although the evidence has indicated that participation is associated with positive effects, job performance and reduced turnover (Spector, 1986), the findings are not uniformly supportive, and it is expected that autonomous leadership has a lesser effect on performance and subordinate satisfaction than such team-oriented participative leadership (Bass and Bass, 2008). For instance, Van Hemmen *et al.* (2015) found that participative leadership exerts a positive influence on innovative entrepreneurship across countries. These authors suggested that synergies within new firms help them to face more easily all the issues that might arise when competing in markets, as well as offering innovative solutions when those problems appear. Similarly, Franco and Haase (2017) explored whether this leadership style explains entrepreneurship in Portugal. They provided evidence regarding the idea that participative leaders encourage collaboration within firms and therefore collaborative entrepreneurship emerges. Yan and Yan (2016) also supported this idea. These authors found that collaboration effectively leads to collaborative entrepreneurship, which ultimately affects innovation and firm performance positively. Based on these ideas, the paper proposes the following hypotheses:

H2. Autonomous leadership has a negative effect on entrepreneurial activity.

H2a. Participative styles of leadership have a positive effect on entrepreneurial activity.

Of all the cultural leadership types, in most cultures, charismatic leadership is considered to be the most desirable (House *et al.*, 2004). The charismatic and neocharismatic types, also called the transformational leadership perspective, focus on how leaders evoke superordinate performance from followers through the transcendence of self-interested

behavior by appealing to higher needs for self-actualization, deeply held personal values and the implicit motivations of followers (Avolio, 1999; Bass, 1985, 1998). In contrast to transactional leadership, transformational leaders appeal to the ideals and morals of their followers to inspire them to reach their highest levels of achievement and to take ownership of the goals of the group. In this sense, transformational leadership may also be related to charismatic leadership (Bass and Bass, 2008; Berson *et al.*, 2001; Den Hartog *et al.*, 1999; House, 1971). As charisma is seen as a factor of transformational leadership, some authors have used the terms "transformational leadership" and "charismatic leadership" interchangeably (Van Hemmen *et al.*, 2013). Transformational and charismatic leadership through inspiration, vision and deeper meaning may promote incremental contributions (Burns, 1978) and have been linked to organizational performance (Frese and Gielnik, 2014), innovations (Kraft and Bausch, 2016) and team decision-making skills (Dionne *et al.*, 2004; Zhou *et al.*, 2017). Chen *et al.* (2014) recently found that this kind of leadership exerts an influence on product innovation and ultimately on corporate entrepreneurship. Charismatic leadership behavior has been shown to exert a positive impact on a wide range of individual and organizational outcomes in a variety of contexts, including military (Bass *et al.*, 2003; Hardy *et al.*, 2010), business (Barling *et al.*, 1996; Ensley *et al.*, 2006; Jung *et al.*, 2003), public sector (Rafferty and Griffin, 2004) and education (Koh *et al.*, 1995). Based on this evidence, it seems likely that charismatic leadership will prove to have effects on entrepreneurial behavior (Stephan and Pathak, 2016). Given this reasoning, it is hypothesized that:

H3. Charismatic leadership has a positive influence on entrepreneurial activity.

Although leadership and entrepreneurship may be related, it might be relevant to explore whether the different types of entrepreneurs are influenced by a charismatic value of leadership. Since 1999, the GEM has helped to provide evidence on the different motives that entrepreneurs have to undertake projects. In this regard, two different types of entrepreneurial activities in particular have been identified, namely necessity and opportunity entrepreneurship (Reynolds *et al.*, 2002). The differentiation focuses on entrepreneurs' motivation to start their own venture. In line with Kirzner (1973), opportunity entrepreneurs are viewed as entrepreneurs who start a business to pursue an opportunity, whilst necessity entrepreneurship occurs due to a lack of alternatives (Reynolds *et al.*, 2005) or because all other options for work are either absent or unsatisfactory (Acs *et al.*, 2005). Shane (2003) proposed differences in the discovery of opportunities that are related to better information and privileged access to information and resources that help to identify both more and better opportunities. Jung *et al.* (2003) supported a direct and positive link between a style of leadership that involves the charismatic characteristic and one of the dimensions associated with opportunity entrepreneurship (i.e. innovation). Stephan and Pathak (2016), by analyzing a sample of 42 countries, found that leader countries, such the USA, the UK, Denmark and so on, present higher rates of charismatic leadership. Although this is not conclusive, it turns out to be interesting when comparing the rates of entrepreneurial activity of these countries. According to Bosma (2013) and Reynolds *et al.* (2005), individuals in developed economies are seduced by entrepreneurship as a career choice, as they identify opportunities more easily than individuals in other countries. These authors also suggested that, given the economic situation of developing countries as well as the high barriers and lack of opportunities, people undertake entrepreneurial projects motived by necessity without any experience or leadership style. This type of motivation responds more to survival characteristics, which may partially satisfy the need for employment. Here, self-employment may increase, but high-quality jobs are barely created. In this sense, Shane (2009) commented that necessity entrepreneurship (as a result of public policy) could be harmful for the economy, as these kinds of entrepreneurs, though they create a few jobs,

tend to destroy them in the short term. Thereby, it is possible to hypothesize that charismatic leadership promotes an environment that generates entrepreneurship motivated by innovation, creativity and the perception of opportunities (Bass and Bass, 2008). Particularly, this leadership dimension provides charisma and vision (Howell and Avolio, 1993), intellectual stimulation, individual consideration and inspirational motivation (Bass and Bass, 2008), which stimulate followers to improve their capabilities and achieve personal and developmental objectives (Barling *et al.*, 1996). Accordingly, the authors pose the following hypothesis:

H4. Charismatic leadership has a more strongly positive relationship with opportunity entrepreneurial activity than necessity entrepreneurship.

The interaction effect of charismatic leadership on the relationship between autonomous leadership and entrepreneurship

The extant literature has suggested that charismatic leadership is positively associated with work attitudes and behaviors at both the individual and the organizational levels (e.g. Dumdum *et al.*, 2002). However, there is a need for greater attention to be paid to the mechanisms and processes through which transformational and charismatic leadership influence other leadership behaviors. Sharing, combining and strengthening leadership among team members have become a fundamental process through which to obtain the expected results. Pearce and Conger (2003, p. 1) defined this process as shared leadership, which is "a dynamic, interactive influence process among individuals in groups for which the objective is to lead one another to the achievement of group or organizational goals or both." The benefit of utilizing different forms of leadership is evidenced in a number of studies (e.g. Drazin *et al.*, 1999; Mumford *et al.*, 2002). Hauschildt and Kirchmann (2001) pointed out the advantage of having multiple "champions" or leaders, taking on different elements of a leadership role, for the technical and financial success of projects. In a related study, Howell and Boies (2004) showed that performance is significantly influenced by the participation of multiple leaders with unique skills. This study asserts directly not only the importance of having multiple individuals in a leadership capacity but also the importance of utilizing their diverse skills and expertise selectively (Friedrich *et al.*, 2009). Alternatively, previous research has found evidence that the effect of autonomous and transactional leader behavior is moderated by differences in organizational characteristics (Podsakoff *et al.*, 1993). Elenkov and Manev (2005) showed that a top management team's tenure heterogeneity moderates the relationship between strategic leadership and important outcomes, such as product and market innovations. Nonetheless, these authors claimed that little has been discovered about the specific effects of charismatic leadership on the connection between transactional leadership or autonomous leadership and outcomes such as entrepreneurship. Considering the effects of moderation, it is important to understand how charismatic factors can moderate different behaviors. This leads to the following exploratory hypothesis:

H5. Charismatic leadership moderates the relationship between autonomous leadership and entrepreneurship.

Methodology

Data and variables

As noted earlier, this paper analyses the relationship between leadership and entrepreneurship. The source of data to measure the dependent variable is the GEM database for 2013, and the independent variables come from GLOBE.

Variables utilized

Dependent variable. The GEM data provide an indicator of a country's entrepreneurial activity in the form of total early stage entrepreneurial activity (TEA) at the individual and national levels. Regarding the latest version, the TEA measures the percentage of the adult population members of a country (18–64 years old) who either are actively involved in starting a new venture or are the owner/manager of a business that is less than 42 months old (Reynolds *et al.*, 2002). Reynolds *et al.* (2005) provided empirical support for the validity of the TEA index. The GEM's classification differentiates between "necessity" and "opportunity" motivations (Reynolds *et al.*, 2002). These subtypes of TEA rates are used to assess the influence of different types of leadership on new business creation. As mentioned before, the opportunity and necessity TEA rates differentiate between entrepreneurs who are motivated to pursue perceived business opportunities and those who are driven to become entrepreneurs as a last resort, when other options for economic activity are absent or unsatisfactory (Urbano and Aparicio, 2016).

Independent variables. Over time, GLOBE has developed an empirically based theory to describe, understand and predict the impact of cultural variables on leadership, organizational processes and the effectiveness of the leader and the processes (House *et al.*, 2002). This study revealed 21 characteristics of leadership; therefore, a second-order maximum likelihood exploratory factor analysis was conducted. As a result, six factors with eigenvalues greater than 1 were obtained (i.e. average internal consistency reliability $= 0.84$; and average interrater reliability $y = 0.95$). The factors identified are: charismatic (visionary, inspirational, self-sacrifice, integrity, decisive and performance-oriented), team oriented (emphasizing effective team building and the implementation of a common purpose), participative (the degree to which others are involved in making and implementing decisions), humane (supportive and considerate leadership, including compassion and generosity), self-protective (ensuring the safety and security of the individual and group) and autonomous (individualistic, independent attributes) (see House *et al.*, 2004 for details).

According to the literature analyzed in the previous section, the first four factors listed above have been associated with transformational leadership and the last two with transactional leadership. Drawing on the ILT, it is possible to suggest that people within cultural groups agree in their beliefs about leadership such that there are statistically significant differences among cultures in leadership beliefs. This agreement within cultural groups validates the aggregation of individual ratings to the organizational and societal levels of analysis. Even though the information used to measure values in terms of leadership is from the year 2004, as this is the last available cross-cultural study, the broad cultural heritage of a society leaves an imprint on values that endure despite modernization (Inglehart and Wayne, 2000).

Control variables. The paper includes the gross domestic product (GDP) at purchasing power parity (PPP) and the control of corruption as control variables, given that the level of development of countries is a key factor in explaining entrepreneurial activity (Carree *et al.*, 2007). Hence, the natural logarithm of the gross domestic product (lnGDP) at PPP per capita is included. The data source used for the GDP PPP variable was the International Monetary Fund World Economic Outlook database for 2013. Control of corruption was obtained from the Worldwide Governance Indicators project. This variable captures the perceptions of the extent to which public power is exercised for private gain, including both petty and grand forms of corruption as well as the "capture" of the state by elites and private interests. Here, it ranges from −2.5 to 2.5, with higher scores corresponding to better outcomes of the institutions. The final sample contains 34 countries, because those countries that were not included in the survey's data for the research were eliminated.

Statistical techniques and models

All the hypotheses were tested using regression analysis by estimating two equations separately. The first one tests *H1–H4*, whereas the second one tests *H5*. The equations are as follows:

$$Y_i = \alpha + \beta_1 L_i + \beta_2 C_i + \varepsilon_i,\ i = 1, 2,\ \ldots,\ 34 \text{ countries}, \tag{1}$$

where Y_i is the total early stage entrepreneurial activity of country i, α is a constant term, β_n is a vector of parameters to be estimated for the nth independent variables, L_i collects the leadership dimension of country i, C_i represents the control variables of country i and ε_t is a random disturbance. The following equation assesses the remaining hypotheses:

$$Y_i = \alpha + \beta_1 LCH_i + \beta_2 LAuto_i + \beta_3 LCH_i \times LAuto_i + \beta_4 C_i + \varepsilon_i, i = 1, 2,\ \ldots,\ 34 \text{ countries}, \tag{2}$$

where Y_i is the total early stage entrepreneurial activity of country i, α is a constant term, β_n is a vector of parameters to be estimated for the nth independent variables, LCH_i collects the dimension related to the charismatic leadership of country i, $LAuto_i$ collects the autonomous leadership dimension of country i, C_i represents the control variables of country i and ε_t is a random disturbance.

Results

The summary statistics and the correlation matrix of the variables used in this analysis are reported in Table I. As can be seen, almost all the variables considered are significantly correlated with entrepreneurship. The charismatic, humane and self-protective types of leadership have a positive and significant correlation with entrepreneurship, and autonomous leadership is negatively and significantly correlated with entrepreneurship, which meets the authors' expectations. Although team-oriented leadership has the expected sign, there is no significant correlation with entrepreneurship. Additionally, participative leadership shows a negative and non-significant correlation. The correlation matrix also indicates that the GDP PPP and control of corruption have a negative and significant relationship with entrepreneurship. Several authors have identified a negative relationship between the level of new business activity and economic development, as measured by income per capita (Carree *et al.*, 2007; Wennekers *et al.*, 2005). In line with these results, the literature has also suggested that the control of corruption can help entrepreneurship and economic growth (e.g. Aparicio *et al.*, 2016; Dreher and Gassebner, 2013).

Table II shows the results of the regression analysis. This table shows six models testing the factors of leadership that determine entrepreneurial activity. Given the correlations among the several independent and control variables, the study tested the problem of multicollinearity through variance inflation factor (VIF) computations. The maximum VIF found within the models is 3, which is below the commonly used standard of 10 (Cohen *et al.*, 2003). Thus, this indicates that multicollinearity is not problematic in the analyses.

With regard to Model 1, the control variables were entered. This model explains 29 percent of the entrepreneurship variation across countries. The estimated coefficients are consistent with the existing literature, which has indicated negative and significant correlations between entrepreneurial activity and development indicators. Research using GEM data has consistently revealed a particular pattern in the association between the GDP per capita and the level and nature of entrepreneurial activity in an economy (Urbano and Aparicio, 2016). In economies with a low GDP per capita, the TEA rates tend to be high, with a relatively large proportion of necessity-motivated entrepreneurship. High-income economies, instead, are characterized by the greater availability of resources and more affluent markets, which may stimulate an increase in opportunity-motivated entrepreneurship. This negative

Variables	Mean	SD	1	2	3	4	5	6	7	8	9	10
1. Total entrepreneurial activity	12.42	10.13	1									
2. Opportunity entrepreneurship	8.60	6.61	0.98***	1								
3. Necessity entrepreneurship	3.30	3.62	0.94***	0.88	1							
4. Charismatic leadership	5.87	0.26	0.30*	0.32*	0.26	1						
5. Team-oriented leadership	5.80	0.21	0.27	0.27	0.26	0.77	1.00					
6. Self-protective leadership	3.39	0.38	0.34*	0.27	0.40*	−0.03	0.20	1.00				
7. Participative leadership	5.41	0.38	−0.06	0.02	−0.1	0.21	0.09	−0.71***	1.00			
8. Humane leadership	4.86	0.40	0.52***	0.51***	0.51***	0.42**	0.35**	0.50***	−0.15			
9. Autonomous leadership	3.79	0.45	−0.32*	−0.33*	−0.29*	−0.06	−0.30*	0.01	−0.25	−0.14	1.00	
10. lnGDP-PPP	27.42	1.59	−0.35*	−0.34**	−0.36**	−0.32*	−0.40**	0.10	−0.15	−0.01	0.00	1.00

Notes: *$p < 0.10$; **$p < 0.05$; ***$p < 0.01$

Table I.
Descriptive statistics and correlation matrix

Table II.
Regression results for entrepreneurial activity

	Dependent variable: TEA						Dependent variable: TEA opportunity		Dependent variable: TEA necessity		Dependent variable: TEA	
	Model 1		Model 2		Model 3		Model 4		Model 5		Model 6	
	Coef.	SE	Coef.	SE	Coef.	SE	Coef.	SE	Coef.	SE	Coef.	SE
Charismatic/value-based leadership			22.8020**	9.7961	28.8690***	8.4639	14.9301**	6.5921	7.3045**	3.4408	2.6437	94.6457
Team-oriented leadership			−34.3159***	12.069	−36.3344***	11.5369	−22.2266**	8.1216	−11.7021**	4.2391	−80.023	82.7582
Self-protective leadership			3.8778	7.375			1.5749	4.9629	2.2592	2.5904		
Participative leadership			2.1813	5.1523			2.1514	3.4671	1.2296	1.8097	−2.3496	30.5188
Humane leadership			5.9816	4.4288			4.4332	2.9803	1.8672	1.5556	119.4207**	49.5153
Autonomous leadership			−9.2734***	3.252	−10.2160***	3.0272	−5.9846**	2.1884	−2.9291**	1.1422	24.7617	84.6843
Autonomous leadership × charismatic											3.3933	24.4841
Autonomous leadership × team oriented											12.7852	21.3633
Autonomous leadership × participative											0.9606	7.8309
Autonomous leadership × humane											−28.7572**	12.6296
Control variables												
lnGDP-PPP	−2.3838**		−3.0539***	0.8684861	−2.8943***	0.8687	−1.8974***	0.5844	−1.1279***	0.3051	−2.5941***	0.9224752
Corruption	−4.3608***		−4.2091**	1.915403	−5.8361***	1.2897	−2.7164*	1.2889	−1.5549**	0.6727	−3.7395***	1.6884
Constant	79.6773***		144.3422*	69.18779	174.3506***	60.1198	87.2667*	46.5586	47.6337*	24.3016	25.4710***	300.1459
F	7.69		5.59		8		5.08		5.88		4.95	
Prob. $> F$	0.0019		0.0004		0.0001		0.0008		0.0003		0.0007	
R^2	0.3315		0.6414		0.5881		0.619		0.653		0.7124	
Adj. R^2	0.2884		0.5267		0.5146		0.4971		0.542		0.5685	
Root MSE	8.544		6.9683		7.0567		4.6892		2.4476		6.6531	

Notes: Coef.: coefficient. *$p < 0.10$; **$p < 0.05$; ***$p < 0.01$

association could be explained by people usually starting their own business by necessity in less developed countries (Reynolds *et al.*, 2001). As mentioned before, Aparicio *et al.* (2016) and Dreher and Gassebner (2013) found that corruption is beneficial in highly regulated economies (specifically those with a higher number of procedures required to start a business and a larger minimum capital requirement). Their conclusion was that corruption has a positive impact on entrepreneurship in countries with bad business climates.

Leadership as an antecedent of entrepreneurship

In Model 2, the authors added the independent variables (i.e. six leadership factors), finding that they significantly increase the ability to explain entrepreneurship. This model explains 53 percent of the entrepreneurship variation across countries. The results obtained support *H1*, which proposes that leadership has a significant relationship with entrepreneurial activity. Cogliser and Brigham (2004) pointed out that leadership makes a difference (despite those few studies to the contrary). This could suggest that effectively being characterized by a type of leadership induces an individual to create a new venture that may be different from those of other entrepreneurs with different leadership styles. Similar to Gupta *et al.* (2004) and Stephan and Pathak (2016), the paper's findings serve as evidence for the discussion regarding whether leadership is a conducive factor for entrepreneurship. In such a case, as shown, this is a type of characteristic that needs to be promoted. However, further research is needed on the mechanisms by which leaders influence, challenge and inspire people to achieve the best results and the best performance, specifically in entrepreneurship.

Byrne and Bradley (2007) supported the hypothesis that leadership needs to be pluralistic. Nonetheless, only three types of leadership show a significant relationship with entrepreneurial activity. As expected, charisma has a significant and positive coefficient. On the contrary, being team oriented and autonomous shows negative and significant signs. The participative, self-protective and humane leadership styles are positive but do not show a significant relationship with entrepreneurship. These findings can potentially be attributable to the lack of statistical power in the sample rather than the absence of a true relationship between different forms of leadership and entrepreneurship. Similar results can be found in Dunne *et al.* (2016).

Explaining entrepreneurship through autonomous and participative leadership

H2 predicts that autonomous leadership has a negative impact on entrepreneurial activity. The results support the proposed *H2*. Warren (1998) argued that a leader finds greatness in the group and helps members to find it by themselves. Contrary to expectations, participant leadership is positive but not statistically significant, but team-oriented leadership is negative and significant. These results may be interpreted as relating to those teams in which the skills of cooperation and diplomacy and, above all, the consideration of all the team members affect the entrepreneurship decision-making process. There are also teams that are resistant to change and decision making to avoid affecting their organization's status quo. Research on teams has presented contradictory findings regarding the effects of diversity on team and performance (cf. Williams and O'Reilly, 1998). Heterogeneous teams can contribute to solving complex problems because of the existence of diversity in perceptions, skills and knowledge (Stasser *et al.*, 1995). Nevertheless, heterogeneity can produce relationship conflicts among team members, resulting in poor performance. Amason and Sapienza (1997) and Dunne *et al.* (2016) found that a collaborative style is negatively and not significantly related to innovativeness. This result could be aligned with the idea that, in general, entrepreneurs have a greater need for autonomy and independence (Knörr *et al.*, 2013). Entrepreneurs value individualism and freedom, and they can experience

difficulty relating to others (Kirby, 2004). Given this ambiguity, *H2a* is not supported. Zhou and Rosini (2015) pointed out that, although the volume of entrepreneurial team research has been increasing, the empirical results are often controversial and inconclusive. Those outcomes may stem from the variety of theoretical frameworks as well as methodological problems.

Charismatic leadership and entrepreneurial activity

In Model 3, only the significant independent variables were introduced. Compared with Model 2, the R^2 shows a slight reduction, suggesting that Model 2 is better than Model 3. Through this estimation, the study finds that *H3*, which predicts that charismatic leadership has a positive influence on entrepreneurial activity, is supported. The findings obtained in previous research have also shown a positive relationship between transformational leadership and performance (Sparks and Schenk, 2001) and charismatic leadership and entrepreneurship (Stephan and Pathak, 2016). Complementarily, other findings have indicated the importance of leadership for entrepreneurship as a moderator variable; regardless of the national setting, transformational behavior, such as articulating a vision, providing an appropriate model, having high performance expectations and showing supportive leader behavior, positively affects the relationship between entrepreneurial orientation and firm performance (Engelen *et al.*, 2015).

Models 4 and 5 analyze opportunity entrepreneurship and necessity entrepreneurship as the dependent variables, respectively. In Model 4, which explains 50 percent of the opportunity entrepreneurship variation across countries, all the leadership styles were introduced. Here, only charismatic leadership shows a positive and significant influence on the dependent variable, and autonomous leadership and team-oriented leadership have a significant and negative influence on opportunity entrepreneurship. Similarly, in Model 5, the authors introduced all the kinds of leadership analyzed throughout this paper. In this case, autonomous leadership and team-oriented leadership again demonstrate a significant and negative relationship with necessity entrepreneurship. Charismatic leadership, as in previous models, shows a positive and significant relationship with opportunity entrepreneurship, which may indicate that this relationship is highly robust. According to *H4*, charismatic leadership has a positive and greater effect on opportunity entrepreneurship than necessity entrepreneurship, which is totally supported by the paper's findings. This result is in line with other empirical findings, such as those of Van Hemmen *et al.* (2013), who confirmed that charismatic leadership has a significant and positive impact on the number of entrepreneurs driven by opportunity. Moreover, this result is aligned with Bass's (1998) study. The relative prevalence of opportunity-motivated vs necessity-motivated entrepreneurial activity can provide useful insights into the quality of early stage entrepreneurial activity in a given economy. The GEM 2010 Global Report (Kelley *et al.*, 2011) highlighted a number of factors that can have a marked impact on the level of improvement-driven opportunity motivation within an economy. It seems that innovation-driven economies can require more transformational leadership to generate opportunity entrepreneurship.

The last model (Model 6) presents the interaction effect between autonomous leadership and all the characteristics related to transformational leadership. As mentioned before, the charismatic, team oriented, participative and humane factors are related to transformational leadership. It is apparent that the only moderation effect that is significant in the relationship between entrepreneurship and transformational leadership is humane leadership. In this regard, it can be seen that a change in the level of humane leadership (from low to high) produces a decrease in the differential effect exerted by autonomous leadership on entrepreneurship. According to these results, *H5* is only partially supported.

Discussion and conclusions

Although the extant research has shown the importance of leadership and entrepreneurship, there is little evidence showing how the leadership dimension influences entrepreneurial activity across countries. Using data from the GEM and GLOBE research projects, the paper analyzed the influence of leadership on entrepreneurship in the light of institutional economics (North, 1990), the theory of social and economic organization (Weber, 1947) and the cultural ILT as conceptual frameworks. The institutional approach argues that the beliefs, values and attitudes of a society determine the behavior of its members, which can significantly affect decisions, such as the decision to become an entrepreneur (Aldrich and Zimmer, 1986; Steyaert, 2007; among others). Leadership seems to be an influential process between individuals, and, in a more advanced conceptualization, leadership is the shared property of a social system including interdependencies among individuals and organizations (Day and Harrison, 2007).

The study finds general support for the main thesis that all the leadership styles have a strong effect on the total national entrepreneurial activity of countries, indicating that charismatic leadership has an effect on entrepreneurial activity, which turns out to be greater than other leadership types, and even more on opportunity entrepreneurship. This study also shows that autonomous leadership has a negative impact on entrepreneurial activity, although, when it is moderated by the humane dimension, this relationship changes. This study provides evidence that differences in the level of entrepreneurship across countries could be attributable to cultural leadership and offers a framework to enable a better understanding of this essential aspect of opportunity and necessity entrepreneurship. Considering that charismatic leadership is widely endorsed across cultures, this study suggests incorporating the role modeling of charismatic behaviors into entrepreneurship training (Stephan and Pathak, 2016). With regard to other styles, tailoring research and training to specific cultures may be useful, since the relative acceptance of leadership varies greatly across cultures, particularly if those cultures differ markedly in their endorsement of charismatic and autonomous styles. Some of the results also appear to be counterintuitive and therefore raise intriguing questions, which the authors hope will encourage additional work on the dynamic links between leadership and new business activity in various types of economies and in different cultural settings.

Entrepreneurs are an important type of strategic leader. Understanding entrepreneurship and leadership as drivers in different cultural contexts is essential for the development of societies. This work demonstrates the complexity of entrepreneurship, highlighting important connections between culture and leadership styles. In this way, this study challenges others to develop and test further contextual leadership models, using a more complete spectrum of personal, social and cultural variables. This is a modest study but an important research effort to help leadership and entrepreneurial scholars as well as strategic leaders to grapple with the enormous uncertainty posed by a varied and competitive global market. In short, this study contributes to a better understanding of the mechanisms through which cultural leadership values influence entrepreneurship.

Contribution to theory and practice

From a conceptual perspective, this study reinforces the idea of the importance of understanding cultural leadership and entrepreneurship as a collaborative process for the development of societies. This study is in line with the increasing research that explicitly acknowledges the socio-cultural context in which leadership and entrepreneurship exist (Lewis, 2015). The results confirm what scholars have long pointed out, which is the importance of socio-cultural factors in the decision to create new businesses (Hofstede, 2001), arguing that entrepreneurship is embedded in a social context (Aldrich and Zimmer, 1986).

Additionally, in line with the recent literature, this study's results may serve as evidence of entrepreneurial leadership. According to Harrison and Roomi (2018), Leitch and Harrison (2018), and Leitch and Volery (2017), leadership and entrepreneurial activity are recursively linked. These authors suggested that entrepreneurs should learn leadership and the other way around (i.e. entrepreneurs should be leaders). Stephan and Pathak (2016) provided similar evidence on the basis that leadership, as a cultural value, explains entrepreneurial behavior. Roomi and Harrison (2011), by thoroughly comprehending the extant literature about the broad area of entrepreneurial leadership, analyzed the way in which different approaches have been used to build up a landscape to understand the interaction between these concepts. Among the approaches identified in the literature, these authors suggested that the analysis of the (institutional) context must be taken into consideration to explore and understand better the charismatic and related types of leadership influencing entrepreneurial activity. Following this line of thought, Stephan and Pathak (2016) offered evidence in the sense that leadership may belong to those values that characterize a society. With the modest intention to complement this view, the findings might be relevant to the debate in which leadership is considered not only to be an important characteristic of entrepreneurial activity in a traditional way but also to embrace diversity in entrepreneurship (e.g. opportunity and necessity TEA).

Practical implications can be drawn for business and education. These may concern the style of leadership that will be better received in organizations, companies or governments and must therefore be studied and promoted. Harrison and Roomi (2018), Harrison *et al.* (2016) and Roomi and Harrison (2011) claimed that perhaps the lack of consensus regarding the concept of entrepreneurial leadership led to both theory and practice being barely encouraged in British universities and the Islamic context. These authors provided a complete set of material aiming at the promotion of leadership and entrepreneurship. The results might serve as an example of such material while complementing the idea that the national context matters for leaders, entrepreneurs and the intersection between them. On a similar line, Ulrich (1996) argued that future leaders will need to be pioneers who take risks, create new paths, shape new approaches, have strong values that drive their actions and master the art of forming teams. Bass (1998) argued that parents should teach their children to accept responsibility for their own actions, to be confident and willing to accept challenges and to question authority when necessary. Although Maslow (1954) postulated that there is a hierarchy of needs, it seems to be important now to move beyond this idea. It could mean that a charismatic and transformational stage can be achieved as well as transcendental organizational behavior, such as altruism, conscientiousness, collectivism and civic virtues. Along the same lines, Humphrey (2013) pointed out the importance of empathy and the emotional intelligence that leaders must develop for entrepreneurship.

Limitations and directions for future research

This study should be interpreted in light of its key limitations. It is evident that the charismatic and transformational leadership concepts provide important insights. However, some conceptual weaknesses need to be addressed to make the perspectives more useful (Yukl, 1999). Although the literature has consistently supported charismatic and transformational leadership's positive impact on attitude and performance, less is known about how this leadership factor actually achieves the transformation of followers (Sparks and Schenk, 2001). This study uses GLOBE items that rate the degree to which each behavior contributes to "outstanding leadership behavior" in organizations and societies. Further, the effectiveness of leadership attributes reflects the perceptions of the respondents rather than performance data or observed behaviors. Nevertheless, despite its limitations, the GLOBE instrument is robust, as it has been validated extensively for cross-cultural relevance of the leadership items included. The data are cross-sectional in nature, so causality is theoretically implied. It would perhaps be necessary to test the results with

samples from other countries or with samples that might permit the period of analysis to be widened. This analysis was conducted at the country level, so future research might motivate an integrative multilevel analysis (Day and Harrison, 2007). Stephan and Pathak (2016) filled this gap by analyzing a wide sample of individuals and countries, which allowed them to apply a multilevel approach. In line with these authors, this paper also suggests that there is still more room to enhance the analysis. In this regard, future avenues motivated by these types of data sets might consider the differences between developed and developing countries (Harrison *et al.*, 2016) as well as the interaction between leadership factors to explain entrepreneurial activity across individuals and countries.

Furthermore, future studies may provide more knowledge by studying the impact of leadership not only on the total entrepreneurial activity of a country but also on other types of entrepreneurship, such as social entrepreneurship, intrapreneurship or corporate entrepreneurship and female entrepreneurship. In the latter regard, for instance, Dean and Ford (2017) and Harrison *et al.* (2015) analyzed qualitatively how entrepreneurial leadership differs between female and male entrepreneurs. These authors claimed that further developments should be conducted to hypothesize whether leadership and entrepreneurial activity are equally linked regardless of the country or region, industrial sector, gender, ethnicity and so on. The exploration of leadership as an antecedent of diversity in entrepreneurship from a quantitative point of view might generate new opportunities for scholars to contribute to the research field. For example, future research should explore the complex effects of social culture and entrepreneurship as well as the way in which leadership can drive social economic development, such as jobs, innovation and social value. Leadership research will be advanced by a continued focus on how leadership behaviors operate in very different cultures and by identifying the optimal leadership profiles that are specific to particular cultures (Brodbeck *et al.*, 2000). While research on leadership has identified an extensive list of key leadership styles, it is proposed that exploring the context of leadership by explicitly incorporating the role of social culture will be a more appropriate way of searching for effective leadership factors than trying to identify attributes that may (or may not) be universally endorsed or effective. Further, cross-cultural research is thus imperative to gain an improved understanding of leadership as a global concept and its effects on entrepreneurship. Future studies could be considered in the light of institutional economics, analyzing the relationships among the normative factors (Scott, 2007) and leadership and entrepreneurship. Given the importance of leadership development, it is critical that leadership models are as comprehensible, complete and coherent as possible (Cox *et al.*, 2003).

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