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## **Entrepreneurial orientation and its impact on the improvement of technological capability in Colombia**

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**Abstract:** Policies that focus on micro, small and medium-sized enterprises (MSMEs) are not always effective to promote firms; moreover, these policies paid not much attention especially to the needs of micro and small firms. Entrepreneurs of these firms have to deal with the market's pressure for technological change without any governmental support. In this sense, entrepreneurs have to use their own vision to foster the technological development of the firms. MSMEs have to increase their abilities to manage and generate technology through the improvement of technological capability (TC). This paper focuses on the interplay between entrepreneurial orientation (EO) and TC, with particular reference to MSMEs in Colombia. The results show how EO acts as support for MSMEs as it contributes significantly to the improvement of TC.

**Keywords:** SMEs policies; entrepreneurial orientation; technological capability.

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## **1 Introduction**

In developing countries as well as in developed countries governments create and support policies and business environments, but these policies and environments are tailored for large-size companies' needs (OECD/UN-ECLAC, 2012). But today the largest number of firms is represented by micro, small and medium-sized enterprises (MSMEs); thus, policies which focus on large-size companies' needs leave outside of their scope a huge number of firms. Although in developing countries policies have theoretically been used to foster the development of MSMEs by governments (Hallberg, 2000; Harvie and Lee, 2003; Levitsky, 1996; Storey, 1994), these policies sometimes have not achieved great results because they do not take into account MSMEs' needs. This kind of situation can be observed within Latin American and Caribbean countries where the majority of firms are MSMEs.

Authors have pointed out the fundamental role that policies and environments play to foster the firms' performance within countries (Dana, 1990, 1993; OECD/UN-ECLAC, 2012). Policies and business environments are necessary to foster the firms' abilities to answer the market pressures for innovations. In terms of innovation which is a vital factor in today's competition, Latin American countries lag behind the development obtained by other developing countries such as China which has changed its production structure into more sophisticated and technology-intensive output (ECLAC, 2010). Firms require improving the management of technology which benefits the competitiveness of firms and consequently the countries. In this way, countries improve their opportunities in competition through the development of technology by their own. However, in developing countries governments are led by simple perception that supporting the firms' purchase of machinery and equipment is enough to facilitate the development of the countries' technological base. From such perspective, policy makers in the developing countries pay little attention to foster activities which contribute to develop technology within countries; particularly in the case of MSMEs. Thus, in the absence of effective governmental support firms greatly depend only their own capabilities to obtain technological development. Indeed, the lack of effective policies and competitive business environments makes the entrepreneurs' spirit and vision more important than ever. Therefore, this paper investigates how the entrepreneur's vision can orient MSMEs in strengthening skills that facilitate the management of technical knowledge to improve the firms' technological development. Particularly, this paper examines how entrepreneurial orientation (EO) influence the improvement of technological capability (TC) within MSMEs located in Colombia.

In developing countries, the strengthening of entrepreneurship is fundamental for economic development. Furthermore, the role played by entrepreneurship within MSMEs is not limited to economic issues; these companies also contribute to alleviate poverty and empower certain groups such as women and indigenous communities (Harvie and Lee, 2003; Peredo et al., 2004; Anderson et al., 2006). In the case of Colombia entrepreneurship helps not only in the economic performance but also in the alleviation of various social problems such as poverty, exclusion of indigenous population and displacement of population by internal conflict. Recent evidence has confirmed the relevance of entrepreneurship as engine for economic growth (Frith and McElwee, 2008; Landes, 1998), support for the development of indigenous communities (Anderson et al., 2006) and facilitator for social inclusion and the elimination of poverty (OECD, 2011). Given the important role of entrepreneurship, MSMEs require that entrepreneurship can be combined with other firms' capabilities to improve the firms' competitiveness (Shum and Lin, 2010). Among the various approaches to capture entrepreneurship, EO's approach is widely used at the firm level. Previous studies have reported the EO's significance for firms' performance (Wiklund and Shepherd, 2003; Isaksson et al., 2013; Zainol, 2013).

Fan (2003) considered that MSMEs are the engine of growth, essential for competitive markets and sources of technological innovation and new products. MSMEs are strategically important in many developing countries, particularly those located in Latin America. In the case of this region, MSMEs significantly contribute to employment and social development. It is worthy to have a look in the region's statistics to understand the importance of MSMEs. Corcuera et al. (2010) report that there exist 18 millions firms in Latin America, of which 92.2% are micro, 4% are small and 0.8% are medium-sized. This means that 97% of the firms are MSMEs. According to these statistics all firms together employ 99 million people, whereas 70% are employed by MSMEs (Corcuera et al., 2010). MSMEs are fundamentally founded by entrepreneurs from the lowest social economic class in Latin America. In this sense, these companies have many limitations, for instance, the lack of formal education which can constrain the use of technical knowledge within these firms (Corcuera et al., 2010). This paper specifically analyses the situation in Colombian MSMEs. In this country, MSMEs represent the 99.7% of the firms. Even more interesting is that the 93.2% are micro-sized companies. The Colombian situation shows that government policies which seek to boost economic growth should include strong mechanisms which support the performance of MSMEs. This paper investigates how MSMEs in Colombia in the absence of governmental support can still develop abilities to acquire technology in order to increase their opportunities in the markets. The first section of this paper will present a literature review as well as the hypotheses. It will then go on to the research methodology and results. At the end, this paper presents a discussion and conclusions from the obtained results.

## **2 Literature review and hypotheses**

### *2.1 Environment and policies in Latin America*

Environments provide resources, infrastructure, financing, and institutions which contribute to firm performance, especially for micro-sized enterprises (Deakins and Freel, 2003). Government policies are among the fundamental environmental factors of the

firms. Since 1950s, the policies, which were created for MSMEs in developing countries, have been a key factor of industrial policy and multilateral aid programmes (Levitsky, 1996). From general point of view policies for MSMEs include objectives such as employment generation, productivity increase, competitiveness and gross domestic product (GDP) growth as well as poverty reduction (Acs, 1992; Harvie and Lee, 2003; Thurik and Wenneker, 2004; OECD, 2004). Even though governments have to support business environments which facilitate the growth of small businesses, governments have to be cautious about the quality and the intensity of their intervention (Dana, 1990) in order not to discourage entrepreneurial activities. At the same time governments have to support environments which take into account the needs for all kind of firms. In this regard, OECD/UN-ECLAC (2012) reports how the governments in Latin America and Caribbean region have not targeted with their competitiveness policies the MSMEs. In Latin America, MSMEs policies have focused on the simplification of taxes regime, the distinction of labour regulations and the promotion of various aspects of the MSMEs' activities such as credit and subsidies supply to buy machinery (Ibarraran et al., 2009). These various foci have forgotten the problems within the firms such as human resources management, slow growth and technological backwardness, which manifest itself in the low share of exports and the productivity gap compared to large companies (CEPAL, 2010; Dini and Stumpo, 2011; Ferraro and Stumpo, 2010). Another factor which shows the lack of effectiveness in the MSMEs policies in Latin America is for instance the focus of national innovation systems on the promotion of formal research and development (R&D) activities in universities and larger companies. MSMEs realise innovations through informal ways and therefore formal R&D processes are not a priority for this kind of firms. This situation constrains the acquisition and development of TC by MSMEs in Latin America.

Policies and programmes have been designed thinking in the promotion of the abilities within MSMEs but they have been conducted by offices or agencies that are limited in resources and they are located within high governmental levels that cannot maintain a real contact with the entrepreneurs' needs in MSMEs. In addition, the agencies do not have enough human as well as financial resources to support small business. OECD/UN-ECLAC (2012) shows that Colombia's expenditure for institutions which support MSMEs was 0.008% of the GDP in 2005. MSMEs would need a more effective governmental support through an institutional framework which can assist in various areas concerning MSMEs competitiveness.

In Latin American, there are some cases such as Chile where the government created the institutions and the political instruments to facilitate the growth of businesses that are internationally competing. The Chilean policies mainly focus on developing backward linkages in value chains that are reported as crucial factor in economic development (Hirschman, 1958; Dornberger and Nabi, 2011).

The main complaint about policies in Latin America is that these policies are documents or declarations, which normally are presented to the public, but these policies, do not obtain palpable achievements (Ferraro and Stumpo, 2010). In the Colombian case, it is found that although there are policies, these policies are not effective at the firm level. Authors have pointed out that the Colombian legislation is the most completed body of policies in Latin America (Corcuera et al., 2010). These policies were designed to cover almost all the needs of the firms; however, when the managers or entrepreneurs are interviewed they express that they not perceive the support from the government. This means that entrepreneurs have to figure out how to develop the companies by themselves.

In the absence of effective policies, the EO is the answer to guide the firms. Entrepreneurship has to permeate all the areas of the company.

## *2.2 Entrepreneurial orientation*

Entrepreneurship has been a fundamental factor in economic development and thinkers outside mainstream economic literature have developed this concept (Deakins and Freel, 2003). The initial issues in the discussion of entrepreneurship included the analysis of the properties of entrepreneurship and its impact on the organisation of production factors (Cantillon, 1755), innovations within firms (Schumpeter, 1942) and the risk-taking of the entrepreneur (Knight, 1921). In the recent years, entrepreneurship scholars have developed numerous typologies to describe alternate perspectives of entrepreneurship (Cooper and Dunkelberg, 1986; Lumpkin and Dess, 1996; Schollhammer, 1982; Webster, 1977). In this paper, the concept of EO is applied. The EO construct has its origins in the field of strategy research. While the researches Mintzberg (1973) as well as Miles and Snow (1978) established the basis for this construct (Todorovic et al., 2011), the most used measurement for EO is provided by Miller (1983). Miller's (1983, p.771) definition is "An entrepreneurial firm is one that engages in product market innovation, undertakes somewhat risky ventures, and is first to come up with proactive innovations, beating competitor to the punch". The main contribution of Miller was that he shifted the perspective of analysis by passing from the analysis of the individual to the analysis of the entrepreneurial activity of the firm. Miller's approach to EO has been considered as a firm level construct. In this regard, EO has had various foci such as firm innovation (Wiklund and Shepherd, 2003), intra and extra-industry networks (Stam and Elfring, 2008) and financial performance (Wang et al., 2009). The characteristics of EO make this construct a fundamental factor in the study of innovative activities within firms. Thus, this paper assumes that the EO's components such as innovativeness (INNO) and proactiveness facilitate the improvement of TC within firms. Firms have to be entrepreneurial due to the needs of growth, innovation and new market opportunities. "The EO literature represents an extensive and coherent body of work that occupies itself with innovation as a central aspect" [Perez-Luño et al., (2011), p.557]. In addition, some authors have pointed out the relevance of EO on innovative activities and technological development within an organisation (Avlonitis and Salavov, 2007; Chen et al., 2012; Li et al., 2008; Wang, 2008). Shepherd and Wiklund (2005) highlighted EO's role on the performance of small business. In other words, "small businesses that are more willing to innovate in order to rejuvenate market offerings, take risks in order to try out new and uncertain products, services and markets, and to be more proactive than competitors towards new marketplace opportunities, are likely to perform better than those less entrepreneurial oriented" [Shepherd and Wiklund, (2005), p.88].

## *2.3 Technological capability*

While EO is responsible to guide the whole organisation, TC is a key element in the use of knowledge and technology as requirements to achieve innovations within the firm. Authors defined TC as "a set of functional abilities, reflected in the firm's performance through various technological activities and whose ultimate purpose is firm-level value management by developing difficult-to-copy organizational abilities" [Panda and

Ramanathan, (1996), p.562]. TC is part of the research approach that studies the concept of capabilities. This approach analyses how a specific firm's capability can foster the use of resources in a determinate organisation's functional area. To understand the concept of TC, it is necessary to clarify the difference between capabilities and resources. Helfat (2003, p.1) pointed out: "an organizational resource refers to an asset or input to production (tangible or intangible) that the organization owns and controls or has access to on a semi-permanent basis, and an organizational capability refers to an organizational ability to perform a coordinated task, utilizing organizational resources, for the purpose of achieving a particular end result". From this perspective what makes the difference between firms is how they can utilise their resources and capabilities. The firm's competitive advantage will depend on the level of capabilities which the firm possesses. In a more deeply consideration, Winter (2003, p.277) said "an organizational capability is a high-level routine (or collection of routines) that, together with its implementing input flows, confers upon an organization's management a set of decision options for producing significant outputs of a particular type". Various capabilities within a company could be marketing, networking, technological, or investment. The classification of the capability depends on its functional task; moreover, a capability contributes to the firm's performance in the market's arena.

TC can be found at national, industry or firm level. At the firm level TC is the result of various processes of accumulation of technology, such as routines of the personnel, acquisition of manuals, and the use of training programmes. TC can be seen as antecedent to the innovative stage. TC is accumulated and embodied in skills, knowledge, experience and organisational systems (Dutrénit, 2004). Firms with a more developed capability can ensure a better competitive advantage; thus, as EO is a firm attitude, this paper establishes that EO conduct the way in which the TC is improved within the firm. The studies about TC have been mainly based on large companies from developed countries and they have neglected the analysis of MSMEs' perspective. A fundamental issue about MSMEs is that due to their size the entrepreneur is the source of dynamism to improve the ability of the firm to be innovative. The assumption of this paper is that entrepreneurs search the increase of the firm's TC to improve the company's innovation capability.

Therefore, the main research hypothesis of this paper is:

H1 EO has a positive impact on the improvement of TC at the firm level.

Furthermore, this paper analyses the impact of each EO's components on TC:

- H1a: INNO has a positive impact on the improvement of TC at the firm level.
- H1b: Proactiveness and competitive aggressiveness (PCA) has a positive impact on the improvement of TC at the firm level.
- H1c: Risk-taking propensity (RISK) has a positive impact on the improvement of TC at the firm level.

### **3 Research methodology**

At the firm level, researchers (Miller, 1983; Covin and Slevin, 1989, 1990, 1991; Namen and Slevin, 1993; Zahra and Covin, 1995; Wiklund, 1999) have agreed that EO is based on three dimensions: INNO, PCA, and RISKY (Miller, 1983; Wiklund, 1999; Todorovic et al., 2011). INNO involves the research of new relations between existing resources and products in a way that expands the firm's resources and capabilities (Ripollés-Melia et al., 2007). Indeed, INNO deals with the searching of solutions to problems and needs (Morris and Sexton, 1996). Departing from established practices and technologies a firm become innovative if the firm supports new ideas, experimentation and creative processes (Lumpkin and Dess, 1996). PCA refers to the firm's response to market opportunities and implies an opportunity-seeking perspective (Kreiser et al., 2002; Lumpkin and Dess, 2001). In other words, proactiveness can be understood as the initiative in an attempt to shape the environment to gain a competitive advantage and to anticipate competitor's movements and market needs. RISKY denotes the willingness to make investments in projects that have uncertain outcomes (Lumpkin and Dess, 1996). Guifu and Hongjia (2009) measure TC as the combination of technology acquiring capability, technology operational capability and technology shifting capability. Technological acquiring capability (TAC) refers to capabilities to acquire new knowledge through formal and informal channels. The operating capability focuses on the capabilities to operate, use and sustain production equipment and facilities. The technology shifting capability refers to capabilities to improve greatly on products and processes depending on firm's own strength and adjust the current product and process parameters according to changing market demands.

The relationship between EO and TC was tested with a sample of 80 MSMEs located in the city of Cali, Colombia. MSMEs which are engaged in production of technology intensive products or specialised knowledge-intensive solutions acting as suppliers to large firms were included in this research. These firms are named as technology-intensive suppliers (TIS) (Dornberger and Torres, 2006). The main feature of these companies is that they supply large companies which special machinery and equipment. Another activity of TIS is the fabrication of spare parts with specific characteristics. Normally, the owners of these companies have had experience working for multinational companies. TIS are MSMEs; a relevant feature is that the owner is the person who guides the path of technological development of the company.

The Cali Chamber of Commerce contained a listing of 280 such firms, of which 114 were operating. Primarily 114 firms were contacted during the period of September to December 2010 with an invitation to fill-in the questionnaire designed for this research, 85 answered questionnaires came back. Five questionnaires were incomplete, and 80 questionnaires were retained finally which made the sample size 80, which is representing 70% of the population. The sample is made up with 59 micro enterprises, 20 small enterprises, and 1 medium-sized enterprise. Average employment size of the sampled firms was 9, while the maximum was 60. Average age of the sampled enterprises was 12 years, while the maximum was 51. Both descriptive and inferential statistics have been applied for analysing the collected data.

**Table 1** Descriptive statistics

<i>Variables</i>	<i>Measured items</i>			<i>Aggregated value</i>			
	<i>Mean</i>	<i>Mode</i>	<i>S.D.</i>	<i>Mean</i>	<i>Mode</i>	<i>S.D.</i>	<i>Cronbach's alpha</i>
<i>Entrepreneurial orientation (EO)</i> <sup>1</sup>				4.59	5	1.34	0.860
Innovation				5.33	6	1.35	0.809
• Emphasis on research and development, technology leadership, and innovation.	5.63	7	1.39				
• Entered new businesses and marketed new products during the past 5 years.	4.51	5	1.75				
• Make significant changes in lines of products or services regularly.	4.73	6	1.79				
Proactiveness				4.48	4	1.69	0.824
• Initiate actions in the sector rather than responds to competitors.	4.45	5.00	1.92				
• Be the first to introduce new products or services, administrative techniques, operating technologies, etc.	3.26	1.00	1.92				
• Prefer the competitive posture.	4.70	5.00	1.93				
Risk taking				3.76	2	2.00	0.909
• Eager to explore into new market.	3.90	3	1.95				
• Prefer high-risk projects with chances of very high returns.	3.15	1	2.23				
• Make decision with an aggressive posture in order to exploit potential opportunities.	3.15	1	2.26				
<i>Technological capability (TC)</i> <sup>1</sup>				4.88	5	0.99	0.794
TAC	2.69	2	1.33				
TOC	5.08	5	1.12				
TSC	6.04	6	1.32				

Notes: <sup>1</sup>All items are measured by seven-point Likert-scale ranging from 'totally disagree' (1) to 'totally agree' (7). The semantic description of the scale is as follow: 1 – totally disagree, 2 – disagree, 3 – partially disagree, 4 – indifferent, 5 – partially agree, 6 – agree, 7 – totally agree.



## 4 Results

Table 1 presents the descriptive results for the constructs. The Cronbach's alpha values satisfactory passed the criteria of 0.70 for each of the constructs (Hair et al., 1998). EO showed a mean and mode value of 4.59 and 5, respectively. The interviewed entrepreneurs demonstrated an understanding of the EO concept as well as its implications. Among the components of EO, INNO presented a mean of 5.33. The indicators applied asked about emphasis on R&D, technology leadership and innovation, marketed new products, and if the firm makes significant changes in its line of products or services regularly. This behaviour contributes to the improvement of the firm's abilities to apply knowledge in its products and process. In summary, the entrepreneurs showed a clear tendency to be innovative in their vision of the business. Table 1 presents that RISKT had the lowest mean value of 3.76. Indeed, MSMEs companies in Colombia are averse to new investment, because of the uncertainty of country's economic situation as well as the lack of political stability. According to Table 1 TC's mean value was 4.88 and the mode value was 5.00. This component demonstrated the firm's ability to use the knowledge to upgrade products and process. The relatively high value shows that the firms perceive to have the ability to change the technology that they already possess and to use the knowledge to upgrade products and processes. TC had three components: TAC, technological operational capability (TOC), and technological shifting capability (TSC). From Table 1, one can see that within these components TAC has the lowest values with a mean of 2.69, however, the TOC and the TSC presented relatively high values of 5.08 and 6.04 respectively. These results point out that entrepreneurs can identify the various levels of TC as well as entrepreneurs can orient the firms' activities to pass from one level to a superior one. The relatively low level of TAC was explained during the interviews because of the world economic crisis in 2008 and the lack of governmental support. These results ratified the negative perception of entrepreneurs about their own ability to take risk after the world crisis. The world economic crisis created an uncertain panorama for investments in new technologies. Entrepreneurs were not sure if the crisis was over in 2010/2011 or a new crisis could be come. At the same time, entrepreneurs expressed that the absence of governmental support makes that they have to be highly cautious when they try to invest. Although entrepreneurs achieve the improvement of TC, they have to realise these results based on they own financing resources. TIS' managers reported the urgent need for governmental support, specially, in areas such as the acquisition and purchasing of machinery.

The regression analysis in Table 2 demonstrates that EO has influence in the TC improvement of TIS. EO can explain the improvement of TC with an  $R^2$  equal to 0,270. This means that EO can predict 27% of the variance in the sample and there should be other factors that influence the level of TC in the investigated firms. Moreover, Table 2 shows that the components with significant impact on TC were INNO and PCA. This means hypotheses H1, H1a, and H1b are accepted. Interestingly RISKT is not significantly correlated with TC. Therefore, H1c is rejected.

**Table 2** Results summary of multiple regression analysis

<i>Dependent variable</i>	<i>Independent variables</i>	$R^2$	$F$ (sig)	$\beta$	$t$ (sig)
TC		0.308	11.292 (0.000)*		
	Innovation			0.209	2.536 (0.013)*
	Proactiveness			0.185	2.602 (0.011)*
	Risk taking			0.038	0.710 (0.480)
TC		0.270	28.915 (0.000)*		
	EO			0.388	5.377 (0.086)*

Note: \*Significant at the 1% level.

## 5 Discussion

Although there exists several agencies and programmes to promote MSMEs in Colombia, these institutions are not effective. One of the reasons can be the limited financial support that is designated to MSMEs in Colombia. The lack of effective support for MSMEs, especially to those characterised by being providers of technology in local value chains, can generate a vicious cycle which consists in low demand for sophisticated products and lack of knowledge transfer between firms (Altenburg, 2011).

Firm's competitiveness lies on how well it responds to market needs. In developing countries, it is expected that public policies play a fundamental role in the competitiveness of MSMEs; however, policies for MSMEs are neither effective nor perceived relevant by entrepreneurs in Colombian case. Policies have paid much attention to concepts which are more suitable to the large companies' needs. The promotion of technological capabilities for the small firms, TIS in this case, is still outside of the policies' scope. TC is a fundamental concept for MSMEs which have to respond to the market pressure for introducing innovative product and services. Entrepreneurs have to be innovative and proactive in their activities in order to confront the limitations of the country's economic structure. This paper presents results that can explain this reality. EO, specially its components INNO and PCA have shown its relevance to stimulate and encourage the firm's ability to obtain more upgrading in its processes and/or products. In Colombia because of the lack of effective governmental support MSMEs can find solutions for their limitations through the strengthening of the entrepreneurial attitude of the firm. TIS can materialise innovation both in the creation of new resources and in new ways of combining available resources. These firms have to deal with national as well as international competitors. In this sense the proactiveness of these firms is fundamental to respond to market opportunities. Thus, Colombian TIS can use technological knowledge as a functional task to generate a competitive advantage. This also means that MSMEs can be source of technological progress within the national economy.

Another very important aspect to be discussed in this paper is the role that policies should play in the promotion and fostering of MSMEs in Colombia. Evidence from developed countries indicates that there is no such country which does not have a strong MSME sector in its economy (Gonzales, 2012; Gonzales Rocha, 2012). Policies must aim the enhancement of MSMEs in developing countries. In the case of Colombia, our research demonstrates that entrepreneurs are able to identify the ways to improve the technological capabilities in their firms. However, when governments create policies to promote and enhance either performance or competitiveness within MSMEs, they do normally not take into account the experience and knowledge that entrepreneurs have. Governments must create coordination mechanisms between various actors, such as local firms, international firms, institutions and private business organisations to develop competitive policies (Altenburg, 2011). A complementary activity to create suitable policies for MSMEs is the incorporation of entrepreneur's experience into the formulation process of policies. Entrepreneurs can give a valuable feedback which contributes to the creation of policies, which are finally more consistent with the reality faced by MSMEs.

In the specific case of TIS, these companies have demonstrated that they can develop innovations and they can serve as technology providers for other sectors in different value chains. TIS could play a more significant role for the country's competitiveness as well as in the development of technology. From the interviews conducted for this research one can conclude that especially the communication between the TIS and policy makers does not exist, representing an important barrier for sustainable economic growth in Colombia. In the literature has been questioned if "governments should provide more support for many, or a little support for few?" [Autio, (2007), p.40]. We argue that in the case of developing countries is necessary to support those sectors that can create impact to several players in the economy. "The focus on industrial policy should shift from promoting established firms in traditional industries" [Altenburg, (2011), p.84], in this line of thought it is possible to support the raise of TIS which represent innovative new sectors in developing countries.

## **6 Conclusions**

This paper contributes to the theoretical framework to guide entrepreneurs of MSMEs in the improvement of their technological abilities. It shows that the improvement of TC is directly explained by EO. The Colombian case presents a lack of effective support for MSMEs. In this regard the primary way to address improvement of TC in MSMEs is by intervening into EO. In developing countries, EO acts as the primary stimulant for capability development and improvement. In this sense, this paper illustrates the need in Colombia for effective promotion policies to MSMEs that support the entrepreneurship at this level. These results show that the strengthening of the entrepreneurial spirit can allow governments to foster economic growth and technological improvement in MSMEs. This paper argues that policies for MSMEs must take into account the current barriers that MSMEs confront in their entrepreneurial activities for enhancing technological development and competitiveness.

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