

## IMPORTANCE OF INNOVATION FOR EUROPEAN SMES: PERCEPTION OF EXPERTS<sup>i</sup>

IMPORTANCIA DE LA INNOVACIÓN PARA LAS PYMES EUROPEAS: PERCEPCIÓN DE ESPECIALISTAS

IMPORTÂNCIA DA INOVAÇÃO PARA AS PMES EUROPEIAS: PERCEPÇÃO DE ESPECIALISTAS

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### ABSTRACT

This study is about innovation in small and medium-sized enterprises and is based on data collected from innovation experts based in the European Union with extensive knowledge of this target audience in that economic block. By means of variables constructed from the seven rules of innovation (Davila et al., 2006), the study measured the expert's opinion on the relevance that SMEs attribute to the factors that lead to innovation, according to the degree of development of their countries. Conversely to the formulated hypothesis, SMEs from less developed countries seem more aware of the benefits that innovation can bring to their businesses.

**Keywords:** SMEs; Innovation; Innovation in SMEs.

### RESUMEN

Este estudio tiene como tema la innovación en pequeñas y medianas empresas y se basa en datos recogidos de expertos en innovación con sede en la Unión Europea con un amplio conocimiento de la realidad de las PYME de ese bloque económico. A través de variables construidas a partir de las siete reglas de innovación (Davila et al., 2006), el trabajo midió la opinión de los especialistas en cuanto a la relevancia que las PYME atribuyen a los factores que conducen a la innovación, de acuerdo con el grado de desarrollo de sus países. En cambio, a la hipótesis formulada, se constató que PYME de países menos desarrollados parecen más conscientes de los beneficios que la innovación puede traer a sus negocios.

Palabras clave: PYMES; Innovación; Innovación en PYMES.

### RESUMO

Esse estudo tem como tema a inovação em pequenas e médias empresas e baseia-se em dados coletados de especialistas em inovação sediados na União Europeia com amplo conhecimento desse público-alvo naquele bloco econômico. Por meio de variáveis construídas a partir das sete regras de inovação (Davila et al., 2006), o trabalho mensurou a opinião dos especialistas quanto à relevância que PMEs atribuem aos fatores que conduzem à inovação, de acordo com grau de desenvolvimento de seus países. Inversamente à hipótese formulada, constatou-se que países menos desenvolvidos parecem mais conscientes dos benefícios que a inovação pode trazer aos seus negócios.

Palavras-chave: PMEs; Inovação; Inovação em PMEs.

## INTRODUCTION

Small and medium-sized enterprises (SMEs) have unique characteristics that differentiate them from large organizations. These characteristics can be determined by the inherent behavior of the owner/manager, by the size, and stage of the company's development (Gilmore et al., 2001). They are less able than large corporations to model and influence their external environment, for example, in their relationships with customers, suppliers, funding sources, and the labor market. This means that the smaller firm is usually confronted with a more uncertain external environment than a larger firm (North et al., 2001). In this scenario of constant challenges, innovation has become increasingly important for the survival of SMEs and for establishing a competitive advantage over their competitors.

SMEs innovate differently than large companies. They have fewer resources and often face more uncertainty and barriers to innovation. However, these deficiencies can be partially overcome by their integration in innovation systems (Tödting & Kaufmann, 2001). Innovation management also influences organizational design, as it forces SMEs to change their structure (Aragón-Sánchez & Sánchez-Marín, 2005). A number of practices can be adopted by SMEs to drive innovation, including: cooperation with customers (Laforet, 2011; Miotti & Sachwald, 2003), cooperation with suppliers (Eisenhardt & Tabrizi, 1995; Kaufmann & Tödting, 2002; Miotti & Sachwald, 2003; Verhees & Meulenbergh, 2004), cooperation with universities and research institutes (Doh & Kim, 2014; Jones & Zubielqui, 2016), Research and Development investment (Doh & Kim, 2014; Faber et al., 2016; Gu et al., 2016), properly manage the company's knowledge (Liao and Barnes, 2015; Maes and Sels, 2014), networks and/or alliances working (Gilmore et al., 2001; Iturrioz et al., 2015; Romijn & Albaladejo, 2002), among others.

However, it is unclear whether the innovation practices of SMEs in developed countries can be

transferred to developing country companies. Research involving this issue is scarce, especially considering differences between countries in the same region or economic bloc, such as the European Union. According to Croucher, et al. (2013), this issue is comprehensive and there is the risk of holding a simplistic dichotomy “developed/developing” simplistic dichotomy if only superficial analyzes are carried out on the topic. In most cases, existing innovation studies have been conducted in large firms in advanced countries such as the United States, Germany, and the United Kingdom. In the view of Salavou et al. (2004), few studies are found on the experiences of smaller countries at different stages of development - which would be extremely important given the differences found in national conditions that affect companies' performance and conduct in its operating environment. According to Williams & Woodson (2012), innovation in developing countries is subject to different capital and infrastructure challenges in relation to innovation in industrialized nations; therefore, can not necessarily be explained by the same concepts used to explain innovation in developed countries.

About SMEs in the EU member states, together, they account for 99% of all organizations, representing approximately 23 million small and medium-sized enterprises (EUROPEAN UNION, 2017). However, even in the case of a single bloc of economic cooperation, different realities are found among their countries. In this regard, there is, for example, the differences in GDP per capita, where the figures range from US\$ 77,480 (Luxembourg) to US\$ 7,480 (Bulgaria) (WORLD BANK, 2015), confirming the political and economic inequalities that exist among its member countries. Add to this the economic crises that some countries of the bloc have faced in recent years, specifically Greece, but making vulnerable countries like Ireland, Portugal, and Spain (Lane, 2012).

All these questions lead the authors of this article to believe that there are differences of perception about the importance of innovation by SMEs, according to the country in which they are located. In this sense,

the following research hypothesis was formulated: (H1) small and medium enterprises based in the most developed countries of the European Union are more aware of the importance of innovation than SMEs located in the less developed countries of the bloc. Thus, the purpose of this research is identifying the importance that small and medium-sized companies based in European Union countries attach to innovative practices, according to the degree of development of the country in which they are. To this end, experts in innovation were invited to participate the research. These are professionals with experience in the field, who work directly with small and medium-sized enterprises. This presupposes having knowledge about innovation and knows the degree of maturity of SMEs in their countries. Considering that these professionals are not tied to the companies and therefore do not represent the interests of the organizations, their answers tend to be more reliable than if they questioned directly the owners/managers. This is because, often in scientific research, respondents may omit information or points of view that go against the image organization or, it can "try to respond in a way that produces a desirable result" (Hair Jr et al., 2005, p. 142), putting in doubt the results of the study. This article is divided as follows: the next chapter is the literature review, where it focuses on innovation, small and medium-sized enterprises, and innovation in small and medium-sized enterprises. Following are explained the methodological procedures adopted for the research application. The third chapter presents the results. Finally, we have the article conclusions.

## LITERATURE REVIEW

### The importance of innovation for organizations

Innovative activity is a complex and diversified process (Cabral, 2007), and has been a dominant factor in maintaining global competitiveness. For companies seeking excellence in this era of intense competition, restructuring, cost reduction, and improvement of product or service quality are no longer sufficient (Lin & Chen, 2007). Therefore, the key issues in business management today are: how to improve and maintain innovation and how innovation relates to financial and non-financial performance (Kmieciak et al., 2012). The main challenges in the innovation management in companies can be summarized by complexity, dynamics, and costs (Bader, 2006).

Innovation indicates a company's tendency to support new ideas and to promote creative processes aimed at developing new products and services. Taking the initiative to anticipate and pursue new business opportunities and participate in emerging markets is often referred to as proactivity (Walter et al., 2006). But in general, if innovation is perceived as doing things differently or better by tapping into the creative capacity of individuals and the workforce, then many companies are not creating a culture that allows these essential processes to develop and materialize (McAdam et al., 2000). The generation of innovations, far from being an isolated and defined act, is a complex process of organizational learning in all functional areas, subject to specific decisions within the production system and dependent on various contextual factors (Martínez-Román et al., 2011). According to Davila et al. (2006), innovating is not about unveiling or developing secret formulas, but about conducting good management. For this, the authors suggest seven rules for better management of innovation in organizations, as presented in Table 1.

Table 1 – The seven rules of innovation

Rule	Definition
Exert strong leadership on the innovation strategy and portfolio decisions.	Clear direction from the top of the organization permeates throughout the organization to motivate, support, and reward the activities that encourage innovation as well as the innovations themselves.
Integrate innovation into the company's basic business mentality	Innovation is not a rabbit you pull from a hat on special occasions; it must be an integral part of the way a company operates every day.
Align the amount and type of innovation to the company's business	Innovation <i>may</i> or <i>may not</i> be the key to success for your overall business strategy; you must determine the types and amounts of innovation needed to support the business strategy—and more is not necessarily better.
Manage the natural tension between creativity and value capture	A company needs strength in both. Creativity without the ability to translate it into profits (for example, execution and value capture) can be fun but it is unsustainable; profits without creativity is rewarding but only works in the short-term.
Neutralize organizational antibodies	Innovation necessitates change, and change stimulates explicit routines and cultural norms that act to block or negate change.
Recognize that the basic unit of innovation is a network that includes people and knowledge both inside and outside the organization.	A successful organization excels at fusing its internal resources with selected portions of the vast resources of the world's capitalist economy.
Create the right metrics and rewards for innovation	People react to positive and negative stimuli, and your company's innovation is no exception. You will never achieve the level of innovation that you need if people do not have the proper rewards.

Source: Davila et al., 2006

Authors further point out that the rules are independent of each other and that effort in one or two practices listed will mean a step in the right direction. However, true success will depend on the dedication of all of them.

To improve innovation capacity and market performance, Wang et al. (2016) suggest that companies should invest in their technological capabilities or leverage the suppliers' capabilities through collaborations. A company's alliance partners are, in many cases, the most important source of new ideas and information that result in technology and innovation that improve performance (Dyer & Singh, 1998). Cooperation with suppliers, in many cases, works for many companies as a substitute for their own innovation effort (Fritsch & Lukas, 2001). Collaboration will be much more efficient and fruitful if the company has a partner with resources that complement theirs and are relevant to the innovation sought (Nieto & Santamaría, 2007).

### Small and medium-sized enterprises

Small and medium-sized enterprises (SMEs) play a key role in creating jobs, promoting innovation, maintaining competition, and generating economic wealth (Analoui & Karami, 2003). Interest in their role in the development process remains at the forefront of policy debates in different countries. Cook & Nixon (2000), listed several SMEs advantages, including: (1) incentive to entrepreneurship; (2) more likely that SMEs will use labor-intensive technologies and therefore have an immediate impact on job creation; (3) they can usually be established quickly and put into operation to produce rapid returns; (4) its development can encourage the process of inter- and intra-regional decentralization; and (5) can become a force against the economic power of large enterprises. The continuing global trend of eliminating trade barriers and expanding global trade presents opportunities for small and medium-sized enterprises in developed countries, including the possibility of increasing revenue by selling more products to end users or

intermediaries in more foreign markets (Susman, 2007).

Defining an SME and, in particular, a small business, is quite difficult, since there are differences in what is appropriate to describe it in different industries and countries (Burns, 2011; Levy and Powell, 2005). According to Ayyagari et al. (2007), efforts to compile data on the size of SME sector among countries are affected by several problems of comparability and consistency, since different countries adopt different criteria - such as employment, sales or investment - to define small and medium-sized enterprises. According to the Organization for Economic Co-operation and Development (OECD), although there is no universally accepted definition of small and medium-

sized enterprises and several criteria are used for their definition, SMEs are generally considered to be non-subsidiary companies that less than a certain number of workers (OECD, 2016). This number of employees varies from country to country. The maximum designation most often used is 250 employees, as in the European Union. However, it is possible to find a limit of 200 in some countries, while the United States considers up to 500 employees for some sectors of the economy.

The European Commission, through the Recommendation 2003/361/EC, uses three parameters to classify small and medium enterprises: the number of employees, turnover, and balance sheet total, according to data presented in Table 2.

Table 2 - Micro, small and medium enterprise classification (European Commission)

Company category	No. of employees	Annual Turnover	Total annual Balance
Medium	< 250	50 million Euros	43 million Euros
Small	< 50	10 million Euros	10 million Euros
Micro	< 10	2 million Euros	2 million Euros

Source: Prepared from Recommendation 2003/361/EC

As reported by Burns (2011), small businesses are not just reduced versions of large ones. They carry out their business in several fundamentally different ways. According to the author, the key to understanding how a small company performs its management and why and how decisions are made is to understand the personality of the owner-manager. His personality and behavioral characteristics strongly influence management. Small businesses often have fewer resources and organizational structure. Therefore, as McDowell et al. (2016) describe, their owners need to understand their own capabilities and market expectations to identify the most appropriate strategy to achieve business success.

However, while recognizing the importance of SMEs for the national economies development, most of them are resource limited and have limited possibilities for internal development of knowledge and technology (Faber et al., 2016). The internationalization of the economy, increased

competition among companies, the need for continuous innovation and the increasing use of information technologies force companies to face the challenge of improving their competitiveness. These difficulties are even greater for small and medium-sized enterprises, because their economies of scale and resources are inferior to those of large companies (Aragón-Sánchez & Sánchez-Marín, 2005). Not only large companies face several risks, but also SMEs whose survival is more easily threatened because of their smaller pool of financial and non-financial resources (Falkner & Hiebl, 2015).

**Innovation in small and medium-sized enterprises**

Small firms represent an important driving force for innovation and are as innovative as large enterprises (Laforet, 2011). However, unlike innovation studies in large companies, there is a shortage of studies

related to the type of innovations that SMEs pursue (Oke et al., 2007). In Hatten's view (2014), true innovation most often comes from independent inventors and small businesses. This is because, according to the author, the research and development departments of largest companies tend to focus on improving the products that their companies already do. This practice makes sense for companies that try to profit from their large investments in facilities and equipment. At the same time, it tends to discourage the development of entirely new ideas and products. In this sense, company size plays a critical role in the relationship between the type of innovation and its performance (McDermott & Prajogo, 2012). In general, as Tether argues (1998), counting studies of innovations have found that smaller firms introduce more innovations per thousand employees than large firms.

Recent studies show that the external environment and structural factors as well as company-specific characteristics affect innovation in SMEs (Laforet, 2011). In line with Andersson & Lööf (2012), small firms tend to have an advantage in terms of innovation, especially in the high-technology and high-intensity sectors where technology and innovation opportunities are high. According to Hottenrott & Lopes-Bento (2014), SMEs contribute considerably to the creation of knowledge and to technological progress by engaging in more basic and radical innovation projects, resulting in novelties in the product market. However, as Giudici & Paleari (2000) describe, financial constraints on the development of innovation are often considered as one of the main obstacles to high-tech companies seeking to expand and grow. As reported by Salavou & Avlonitis (2008), industry experts argue SMEs that introduce less innovative products are less successful than SMEs that introduce more innovative products. They believe that the first group of SMEs is self-limited at lower performance levels because of its persistence in imitating products already released by competitors. When small businesses sell a differentiated product in a local or regional market, they can use market intelligence more effectively.

Advances in information technology (IT) are useful in this regard. The use of intelligence on suppliers and partners is very suitable for small companies to innovate in processes, products and services (Verhees & Meulenbergh, 2004). Small firms can also focus on product specialization and the specificity of market segments, which represent niches where large firms are inefficient due to the difficulties of learning deviations, or simply because the size of the market is too small for large companies (Giudici & Paleari, 2000). In the same way, the external market presents itself as a possibility for SMEs. In Knight's view (2001), small firms are affected by the forces of globalization, such as the fall in trade and investment barriers, as well as the far-reaching activities of multinational corporations. All these transformations and the increase of transnational competition end up putting pressure on SMEs to internationalize (Knight, 2001).

Small firms generally cannot rely exclusively on their internal knowledge and skills in their innovation processes but are forced to seek additional information in their operating environment (Varis & Littunen, 2010). Innovation-oriented SMEs should strive to develop organizational learning and externally-oriented knowledge-related skills, thereby using external knowledge to build a wider body of knowledge (Maes & Sels, 2014). In this regard, Verhees & Meulenbergh (2004) describe that small business networks can establish collective Research and Development (R&D) programs as a basis to promote innovation for their members. However, for SMEs, participation in innovation networks with large companies is not without risk and complexity. Lack of resources and low bargaining power make it difficult for SMEs to appropriate the results of innovation when collaborating with larger partners (Iturrioz et al., 2015).

## METHODOLOGICAL PROCEDURES

Educational researchers are interested in discovering how one thing is related to another, describing a set

of phenomena and establishing a basis on which to make claims, predictions and explanations (Bean, 2011). In developing a research proposal, Crotty (1998) argues that it is first necessary to devote considerable effort and answer two questions in particular. First, what methodologies and methods will we employ in the research we propose to do? Second, how do we justify this choice and the use of these methodologies and methods? The following topics are intended to answer these questions.

*Type of search.* This study is characterized as a quantitative research, of a descriptive nature. Descriptive research seeks to describe characteristics of a sample and the relationships between phenomena, situations, and events observed by the researcher (Tripoli & Bender, 2010). In relation to the scope, this is a statistical study, since it is focused on "breadth rather than depth" and attempts to "capture the characteristics of a population by making inferences about the characteristics of a sample" (Cooper & Schindler, 2003, pp. 130).

*Sample and data collection.* The participant sample of this research was made up of innovation experts linked to *Technology Innovation International (TII)*. It is an association whose purpose is to promote and provide high-quality innovation support to small and medium-sized enterprises in their countries, as well as to offer technology transfer services. Its members share experiences and good practices through conferences, trainings, and activities carried out through working subgroups. Headquartered in Luxembourg, the association brings together public and private institutions, including service providers in the field of innovation, universities, research institutions, individual consultants, incubators, and public innovation agencies. Services provided by specialists, such as support for product/service development, consultancy, mentoring, incubation, etc., are offered predominantly to small and medium-sized companies - which corroborates the authors' understanding that they are professionals with strong experience and knowledge of the reality of SMEs in their countries. The contact with the specialists was establishment through electronic mail, where he was

informed about the research objectives and requested participation in the study. In all, 146 members - all from EU member states - were contacted. At the end, 44 affiliates from 18 different countries were returned, representing 29.93% of the population: 23 private organizations (52%), 11 public organizations (25%), eight universities (18%), and two individual consultants (5%).

*Questionnaire.* According to the objective of the study, the authors carried out empirical research on the importance that small and medium-sized companies based in the European Union attribute to practices that lead to innovation. The questionnaire was based on the seven rules of innovation presented by Davila et al. (2006). The seven rules, here called variables, contemplate internal and external factors that significantly impact the innovative activities of organizations: (1) leadership, (2) incorporation of concept (innovation) into business, (3) alignment of innovation with strategy, (4) creativity management, (5) overcoming resistance and risk aversion, (6) Innovation networks and (7) performance indicators and rewards. In addition to information on the type and year of foundation of the institution to which the specialist belongs, the questionnaire presented 15 objective questions, with an interval of the Likert type, with the following response options: strongly disagree, disagree, disagree, agree, and strongly agree.

*Statistical analysis.* To confirm or deny the elaborate hypothesis, it was necessary to divide the sample between more developed and less developed countries. For this, the group of respondents was stratified according to the per capita GDP of their countries. GDP growth is considered a wide measure of an economy's growth, since GDP at constant prices can be estimated by measuring the total quantity of goods and services produced over a period, valuing them in an agreed set of prices in the base year and subtracting the cost of intermediate inputs, also at constant prices (The World Bank, 2003). In turn, GDP per capita is the gross domestic product divided by the number of inhabitants of a country. Although the use of GDP as a measure to classify a country's development is considered generic

and has received criticism in recent years (Ezrow et al., 2016), its popularity is confirmed by the frequency with which per capita GDP is used in research and in teaching economics (Vand den Berg, 2012). Data on the per capita Gross Domestic Product of the countries were taken from the World Bank website, which is based on micro data collected through surveys and population censuses conducted in various countries around the world. As a cut-off point for the definition regarding the group of more developed

countries and group of less developed countries, a per capita GDP of US \$ 40,000 was established. In this way, it was possible to achieve a relatively even distribution of the number of countries and the number of participants in the survey. As can be seen from Table 3, the developed countries average GDP per capita (US\$ 50,685) was more than 50% higher than the less developed group average per capita GDP (US\$ 20,689), demonstrating the desired heterogeneity in the stratification sample.

Table 3 - GDP per capita of the countries participating in the survey (in US\$/2015)

Group 1 – more developed			Group 2 – less developed		
Country	n.	GDP per capita	Country	n.	GDP per capita
Luxembourg	1	77,480	Italy	3	32,830
Sweden	1	59,900	Spain	4	28,380
Finland	1	48,960	Slovenia	2	22,250
Netherlands	3	48,850	Portugal	1	20,470
Austria	1	47,260	Greece	3	20,270
Germany	5	45,790	Czech Republic	2	18,150
Belgium	2	44,510	Slovakia	1	17,570
United Kingdom	5	42,700	Poland	1	13,310
France	2	40,710	Hungary	6	12,970
<b>Total and average</b>	<b>21</b>	<b>50,685</b>	<b>Total and average</b>	<b>23</b>	<b>20,689</b>

Source: World Bank (Available at: <http://data.worldbank.org/region/european-union>)

To measure the results, descriptive statistics techniques were used: frequency distribution, central tendency measures, and dispersion measures. The only accomplishment of descriptive analysis is due to the size of the research sample, which proved insufficient for the operation of more sophisticated tests.

## RESULTS

Based on the results found in the measurement of the seven indicators proposed by Davila et al. (2006), the authors calculated the mean of each variable, according to the opinion of the experts interviewed. As can be seen from Table 4, except for only one variable (innovation networks), all presented higher averages in the group of experts from less developed countries. A more detailed analysis is performed on the following topics.

*Leadership and innovation decisions* - In the leadership variable, respondents were asked if small firms in their countries are aware that strong leadership from the top (starting from the owner/manager) is key to success in innovation issues. The average found in the group of experts from the most developed countries was  $M = 3.48$ , while in the group representing the countries with the lowest per capita GDP was  $M = 4.04$ . This variable was also asked if SMEs communicate their innovation strategies to all employees of the company in order to enable managers and network members to carry out actions related to innovation. In this question, the mean reached by group 1 (most developed countries) was  $M = 2.90$  and group 2 (least developed countries) was  $M = 3.35$ . Conversely, in the opinion of the participating experts, SME leaders in less developed countries are more concerned about taking responsibility for innovation than SMEs in more developed countries - although the averages found



are not neither group. A single common perspective that integrates and motivates the members of an organization is a prerequisite for innovation in the enterprise. The willingness of a CEO to accept risks and mistakes is also probably one of the first steps in the process (Aragón-Correa et al., 2007). The owner’s innovation capacity seems to be an essential element of the entrepreneurial orientation for innovation in small enterprises (Verhees & Meulenbergh, 2004). In

small entrepreneurial companies, the entrepreneur may be the sole custodian between the company and the potential sources of innovation that matter. In this case, innovation can translate into the entrepreneur's capacity for innovation, rather than the company's capacity for innovation (Varis & Littunen, 2010).

Table 4 - Mean of the variables according to the seven rules of innovation

N. Var.	Variables	Average per category		Issues in each variable
		Gr. 1	Gr. 2	
1	Leadership	3.19	3.70	2
2	Incorporation of concept into business	3.62	3.89	2
3	Alignment of innovation with strategy	3.52	3.74	2
4	Creativity management	3.56	3.57	3
5	Overcoming resistance and risk aversion	3.14	3.46	2
6	Innovation networks	3.21	3.17	2
7	Performance indicators and rewards	2.57	2.72	2

Source: Search Data

*Integration of innovation into the business mindset* - The first statement of this variable questioned participants whether SMEs in their countries possess clarity that to thrive, innovation must be an integral part of a business mindset. The means found were  $M = 3.62$  for group 1 and  $M = 3.74$  for group 2. The other question asked the participants about the companies' awareness that innovation requires resources, skills, and experience residing in different organization parts and in external organizations. The results found were  $M = 3.62$  for group 1 and  $M = 4.04$  for the second group. Again, in this variable there is a greater concern about the culture of innovation and its incorporation in the organization's mentality by the SMEs countries with lower GDP per capita. However, although differences were observed between the groups, the averages found were higher than the center point of the scale (3), which may mean an awareness of the importance of these. Conforming to Saunila & Ukko (2013), for innovation to positively affect the performance of SMEs, companies need to recognize their importance. Innovation requires coordinated and synchronized

efforts across departments to get an idea from the world of abstraction to a tangible product (Davila et al., 2006). As reported by Cohen & Levinthal (1990), to the extent that an organization develops a broad and active network of internal and external relationships, the consciousness of individuals about the capacities, and knowledge of others will be strengthened. As a result, individual absorptive capacities are increasingly leveraged, and the organization's absorptive capacity is strengthened - which will favor the development of innovations. In addition, as Maes & Sels (2014) describe, building strong customer relationships to maintain awareness of the business environment enables SMEs to gain valuable external (customer) knowledge without taking up too many scarce resources.

*Alignment of innovation with company strategy* - The first issue of this variable concerned the owners' awareness of their responsibility to decide which innovation strategy best fits the external competition situation, the market, and the internal conditions of the company. The average found when the respondents from the most developed countries were

interviewed was  $M = 3.57$  - values lower than those presented by group 2, with a mean  $M = 3.74$ . The second question asked whether it is noticeable to SMEs that the chosen innovation strategy should fit the business and be very clear to the whole organization. The two groups again presented results above the central point (group 1,  $M = 3.28$  and group 2,  $M = 3.74$ ), although results from less developed countries show a greater connection between innovation and company strategy. For Johnston Jr. and Bate (2013), while innovation strategies may be critical to success (and survival) in dynamic markets, they can also be a source of competitive advantage in more stable markets. Regarding employees' contribution to innovation success, Morris et al. (2010) describe that if employees do not have a clear understanding that innovation is essential to the achievement of the company's goals, their daily actions will not contribute to innovation; as at work employees make choices daily, strategy could provide direction to these choices.

*Creativity management* - The importance of creativity for innovation was measured through three statements. The first questioned the need for processes, structures, and resources to manage levels of creativity and transform creative concepts into marketable products. This understanding was corroborated by experts from both countries with higher GDP per capita and smaller countries, presenting averages  $M = 4.48$  and  $M = 4.35$  respectively. These were the highest averages found in the research. On the other hand, in the following statement, which questioned whether SMEs knew how to manage the creative components of the innovation process, we had the lowest averages (group 1 with  $M = 2.29$  and group 2 with  $M = 2.52$ ). Still, about creativity, it was questioned whether the owners of SMEs are aware of which managerial practices work as stimulus to creativity and which inhibit it. Again, the highest average was found in the answers of experts from the countries with the lowest GDP per capita, with group 1 with mean  $M = 2.38$  and group 2 with mean  $M = 2.87$ . Based on the measured results, it is noticed that, although SMEs

are aware of the importance of creativity for the innovation process, they do not have the capacity to manage it - which can compromise the dynamism of the company against its competitors. This finding is in line with Walter et al. (2006), when they describe that innovation indicates a company's tendency to support new ideas and to promote creative processes aimed at the development of new products and services. To succeed in today's global business environment, businesses need the knowledge, ideas, energy, and creativity of every employee, from front-line workers to top-level managers (Spreitzer, 2008). In this sense, adequately managing the levels of creativity of the organization is a fundamental factor to leverage innovations.

*Risk management* - Innovation inevitably involves taking risks. In this variable, innovation experts were asked if SME owners in their countries know that only by taking risks is innovation can occur. In this respect, a very traditional mentality was perceived by small companies, with a strong aversion to risk, according to the respondents. The averages found were  $M = 2.76$  for the group that represented the most developed countries and  $M = 3.22$  for the group with the lowest GDP per capita. The results found may suggest that small and medium-sized enterprises in the less developed countries tend to take greater risks in their business environment, often as a result of the economic factors that their countries are experiencing. Small business owners have multiple roles and are usually responsible for all the details of daily operations, which can reduce their ability to take risks (Acar & Göç, 2011). But a CEO's willingness to accept risks and mistakes is also probably one of the first steps in the innovation process (Aragón-Correa et al., 2007). As for the capacity and courage to change, exploit and innovate as a way to achieve innovative processes, the averages presented were more significant, that is, SMEs are aware that it takes enthusiasm and daring to realize the innovations (group 1 with  $M = 3.52$  and group 2 with  $M = 3.70$ ). According to Liao & Barnes (2015), SMEs are generally characterized as having the ability to

respond more quickly to changing needs, which has significant implications for innovation.

*Innovation networks* - Networking is a naturally inherent aspect of the decision-making process of small and medium-sized business owners (Gilmore et al., 2001). Regarding this variable, it was asked whether SMEs are aware that innovation requires the development and conservation of an internal and external network for open relationships and for mutual collaboration. Small and medium-sized enterprises in developed countries do not seem to have the necessary awareness of the importance of networks for innovation, since the average of the experts' responses was only  $M = 2.95$ . On the other hand, an average above the central point was verified in the responses of the group with the lowest GDP per capita ( $M = 3.17$ ). Networks provide access to information, resources, markets, and technologies with learning advantages, scale, and economies of scope; they also allow companies to achieve strategic objectives, such as risk sharing and outsourcing of value chain and organizational functions (Gulati et al., 2000). Network capacity enables small businesses to make the most of relationships to create more opportunities and improve innovation performance (Parida & Örtqvist, 2015). The second question asked whether small and medium-sized enterprises have partnerships with customers, suppliers, consultants, and/or other institutions with some capacity to help them stay innovative. The highest mean was identified in the answers of the experts from the best developed countries ( $M = 3.48$ ), while in the other group the value found was  $M = 3.17$ . The value above the center point of the scale demonstrates that SMEs use partnerships to develop their innovative products and services, even a group not realizing the importance of networks for the development of innovations, as is the case of SMEs in countries with the highest GDP per capita, as verified in the first question. Partnerships in the supply chain influence small business innovation. Thus, companies with innovative channel partners are more likely to be innovative than companies that lack innovative partners (Hausman, 2005). In addition, according to

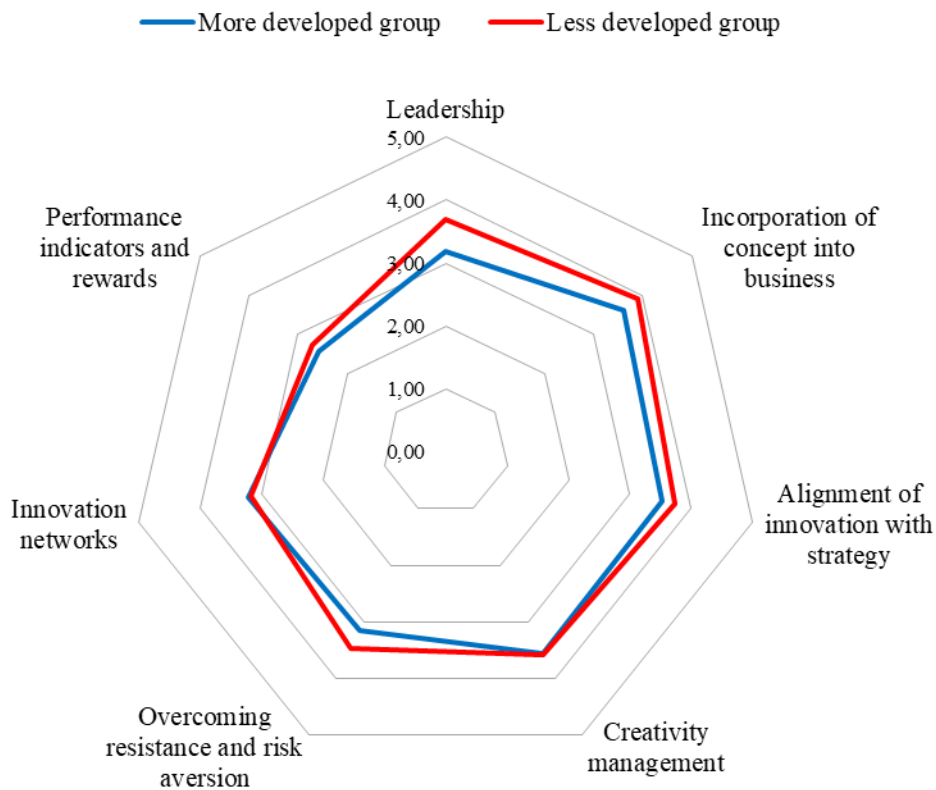
Laursen & Salter (2004), suppliers and customers continue to be the main sources of knowledge in companies' innovation activities. Corroborating these findings, Romijn & Albaladejo (2002) describe that interaction with suppliers, clients, public assistance agencies, industrial associations, and foundations can provide external inputs that are absent in the learning process that the company itself cannot (easily) provide.

*Performance indicators and rewards* - Finally, the variable related to performance indicators and rewards programs, respondents were asked if SME R&D departments receive the funding needed to develop their best and most radical ideas. In this regard, although the averages presented similar results, their results were not significant. Specialists from the most developed countries had an average of  $M = 2.76$  and those with the lowest GDP per capita averaged  $M = 2.78$ . This demonstrates that the sectors responsible for leveraging innovation in small and medium-sized enterprises have not received the necessary financial support, compromising their innovative performance. A common indicator of a company's scientific and technological capacity refers to its R&D expenditures (Laursen & Salter, 2004). Effective R&D management can help a company to gain and maintain competitive advantages ranging from incremental improvements in product quality or cost to breakthroughs that create new market opportunities (Roussel et al, 1991). However, due to financial constraints, many SMEs do not have formal structures and sectors for research and development. As Ortega-Argilés et al. (2009) point out, it should be borne in mind that small firms mainly perform informal R&D and that this determines a downward tendency in estimating their innovative propensity when only formal R&D expenditures are considered. Regarding rewards for innovation, experts were asked whether SMEs rely on systems that provide ratings, motivation, incentives and rewards that go hand in hand with the innovation strategy. Again, the averages found were not significant (group 1,  $M = 2.38$ , group 2,  $M = 2.65$ ), demonstrating that the small and medium enterprises of the European Union do not

have, for the most part, formalized systems that evaluate, promote or reward the best innovation practices in the company. As Saunila & Ukko (2013) point out, small and medium-sized enterprises traditionally have few resources to measure their

performance or issues related to innovation capacity. Figure 1 graphically shows the seven rules of innovation and the average obtained for each variable, according to the group of experts.

Figure 1 - Average, by group, variables that make up the seven rules of innovation



Source: Search Data

## CONCLUSIONS

The aim of this research was to identify the importance that small and medium-sized companies based in European Union countries attribute to practices that lead to innovation, according to the degree of development of the country in which they are located. To this end, experts with experience in innovation and working directly with small and medium-sized enterprises in Europe were invited to participate in the research. The sample was stratified into two groups according to the per capita GDP of their countries and the questionnaire was based on

the seven rules that, according to Davila et al. (2006), lead companies to innovation.

The results found by measuring the average of each statement, although they have exceeded (at most) the center point of the scale, do not demonstrate a great concern with the innovative practices by the small and medium companies based in the European Union. This is because none of the variables presented a result higher than 4.00. Even more worrying is the low average found in the variable indicators of performance and rewards, revealing little implementation of these measures in the day to day of SMEs. Measurement helps managers establish whether they will reach their intended destination (Neely & Adams, 2005), and provides the basis for an

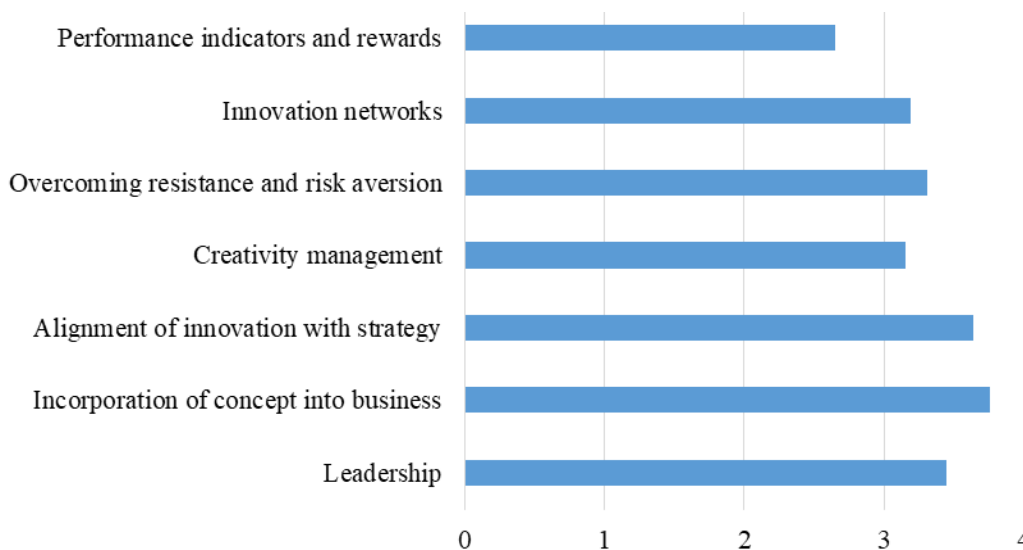
organization's assessment of how it achieves its objectives, helps identify areas of weakness, and decides on future initiatives (Saunila & Ukko, 2013). Thus, it is essential for SMEs to implement performance indicators as a means of identifying their current position and defining where to reach them. In relation to rewards systems, they help motivate employees, which inevitably has influence on the innovative results of companies.

The management of creativity also did not present significant results. According to expert's opinion who participated in the research, SMEs do not always know how to manage the creative components of the innovation process and how they can stimulate creativity within companies. This issue is of concern since, to a large extent, successful innovations begin with the insights of creative employees. In this sense, one way to boost the generation of new ideas (which can become marketable products and services) is to systematize people's creative capacity. After all, as described by Kmiecik et al. (2012), innovation reflects a company's tendency to participate and support new ideas and creative processes that can result in new products, services or technological processes.

On the other hand, the best average variable was the incorporation innovation concept into the business of companies. This variable measured the awareness of SMEs about the importance of making innovation an integral part of the business mindset, as well as the need for resources, skills, and experience (both internal and external) to drive innovation. This result can be justified by the importance that the innovation theme has received in recent years as a fundamental factor for the financial performance of organizations. That is, there is a general awareness that, without innovation, there is no way to compete in national and global markets - although this awareness does not always translate into the effective incorporation of innovation rules into companies' daily routine. The general averages obtained in all variables (including the group of experts from more developed and less developed countries) can be visualized in Figure 2.

Regarding the hypothesis formulated in this study, the authors conclude that it **was not corroborated**. Contrary to what was believed, the awareness of the importance of innovation is lower in countries with higher GDP per capita than in those located in less developed countries - according to the experts participating opinion. As can be seen from Table 4 and Figure 1, except for the innovation networks variable, all the others contradicted the formulated hypothesis and indicated superior results in group 2. The greatest difference was found in the leadership variable (0.51 percentage points) followed by risk aversion (0.32), and incorporation of the concept into the business (0.27). One possible explanation of these results can be explained because, in less developed countries, the difficulties faced by SMEs to stay in the market are larger than in more developed countries, where the economic stability and government incentives favor commercial transactions and performance. With this, awareness of the need for innovation for business survival is evident in more hostile and unstable environments. In addition, it should be borne in mind that the survey found the opinion of a relatively small sample of people and that the results found may not adequately reflect the awareness of small and medium-sized enterprises on the subject. However, the research contributes as an indicator we need to deepen the studies on innovation in SMEs, as well the implications the degree of development countries has in the awareness of its importance to the results of the business.

Finally, the authors highlight as the main study limitation the small number of questionnaires obtained - which compromised the statistical analyzes. They also suggest, for future research, that more experts (from the various areas of science) be invited to contribute to academic research. This will reduce the possible outcome bias when the respondent has an interest in preserving the image of their companies.

**Figure 2** - Average variables applied research (including group 1 and group 2)

Source: Search Data

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## NOTES

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