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ANALYSIS OF THE RELATIONSHIP BETWEEN THE INTERNATIONAL ENTREPRENEURIAL PROFILE OF INNOVATION MANAGERS AND THE PROMOTION OF INNOVATIONS IN ORGANIZATIONS

ANÁLISE DA RELAÇÃO ENTRE O PERFIL EMPREENDEDOR INTERNACIONAL DE GESTORES DE INOVAÇÃO E A PROMOÇÃO DE INOVAÇÕES NAS ORGANIZAÇÕES

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ABSTRACT

This study sought to identify the relationship between the international entrepreneurial profile of innovation managers and the promotion of innovations in organizations. The international entrepreneurial profile was measured concerning the knowledge of foreign languages, international experience, and general previous experiences. The promotion of innovations was investigated in terms of product, process, and organizational innovation, as well as innovative activities. A survey was conducted with innovation managers in industrial companies, and the Mann-Whitney non-parametric test was performed. As a result, the knowledge of a foreign language, the realization of previous travels abroad for work, tourism, or leisure, the professional experience in the same sector, and a family business positively impact the generation of innovations.

Keywords: Innovation; International Entrepreneurial Orientation; Innovation Managers.

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RESUMO

Este estudo buscou identificar a relação entre o perfil empreendedor internacional dos gestores de inovação e a promoção de inovações nas organizações. O perfil empreendedor internacional foi medido em relação ao conhecimento de línguas estrangeiras, à experiência internacional e às experiências anteriores gerais. A promoção de inovações foi investigada em termos de inovação de produtos, processos e organizacionais, bem como de atividades inovadoras. Foi desenvolvida uma pesquisa com gestores de inovação em empresas industriais e realizado o teste não paramétrico de Mann-Whitney. Com isso, o conhecimento de uma língua estrangeira, a realização de viagens anteriores ao exterior a trabalho, turismo ou lazer, a experiência profissional no mesmo setor e em empresa familiar impactam positivamente na geração de inovações.

Palavras-chave: Inovação; Orientação empreendedora internacional; Gestores de inovação.

1 INTRODUCTION

The exponential growth of world trade of goods with high added value and technological content (Bonelli; Lazzareschi, 2012; Anand et al., 2021) exposes organizations to technological advances, new forms of communication, and innovative processes. The need to increase production with more quality (Sá, 2016; Do; Nguyen; Shipton, 2023) leads companies to put innovation at the center of their production processes, demanding skills that for a long time were not considered relevant or even known.

Innovation has become an alternative to the challenges to create value and gain competitiveness (Pedrosa, 2017), being more than just technological advances (Meissner; Polt; Vonortas, 2016). Innovation, and all the procedures and practices it involves, can contribute to an organization's success in a sustainable way (Steiber; Alänge, 2013; Pertuz; Pérez, 2021). Hence, companies operating in rapidly changing environments should present an agile process to promote innovations, to ensure competitive advantage (Steiber; Alänge, 2013; Zhao et al, 2021). Therefore, the central axis of the strategy for competitive advantage is the act of constantly innovating (Schreiber, 2013; Bahl; Lahiri; Mukherjee, 2021).

Together with the market and the business revolution of the last decades, it was proved that the innovation model focused only on the internal environment was not enough for the innovative environment of the 21st century and the permanence in the competitive market (Chesbrough, 2003). Increasingly, organizations must seek external knowledge to adopt innovative practices (Guerrero; Urbano; Herrera, 2017; Du; Zhu; Li, 2023). The internalization of ideas and external knowledge can occur in different ways, increasing value creation by aggregating ideas from various sources (Bican; Guderian; Ringbeck, 2017). Innovations can enhance and expand competitive aggressiveness in search of new markets since they offer new products and services (Pereira et al., 2014; Papanastassiou; Pearce; Zanfei, 2020).

In this context, a business philosophy, in terms of innovation, changes the assumption that the elements for innovation do not reside only in internal sources and that knowledge from external sources can improve the innovative process or act synergistically. Mascarenhas Bisneto and Lins (2016) highlight that knowledge is one of the main elements to innovate and, thus, achieve the planned results. Implicit knowledge can have its origin in the experiences of the collaborators of a company, and professionals with an international entrepreneurial orientation become necessary in this scenario. International entrepreneurial orientation can be defined as the skills of innovativeness and proactivity, managerial vision, and competitive posture in the search for international markets (Knight; Cavusgil, 2004; Do; Nguyen; Shipton, 2023), in addition to the propensity of managers to take on new risks (Freeman; Cavusgil, 2007; Anand et al, 2021). Traditionally used to analyze the profile of organizations, international entrepreneurial orientation can measure individual aspects of employees.

The need for quick decision-making to create, conduct, and improve organizational processes and expand markets is crucial in this process. For Miller (1983), the variables that surround entrepreneurial orientation, in its essence, are related to skills such as proactivity, innovativeness, and the ability to take risks, complemented by Lumpkin and Dess (1996) with autonomy and aggressiveness. Studies on international entrepreneurship have focused mainly on born global firms and new international ventures, showing the need to study this theme in more traditional environments (Acosta; Crespo; Agudo, 2018), as the evidence obtained in these spaces is very limited (Keupp; Gassmann, 2009; Papanastassiou; Pearce; Zanfei, 2020). Studies on International Entrepreneurial Orientation traditionally seek to analyze their relationship with

international performance (Covin; Miler, 2014; Bahl; Lahiri; Mukherjee, 2021), with limited knowledge about the relationship with the promotion of innovations.

Considering that the entrepreneurial orientation of a professional can impact the generation of innovations, and the failure to identify previous studies that relate the two themes, the following question arises: What is the relationship between a manager's international entrepreneurial profile and the generation of innovation? To achieve this objective, the study includes the analysis of the characteristics of the international entrepreneurial profile of innovation managers, as well as their perceptions of innovation activities in the companies where they work, so that it is possible to analyze the impact of the international entrepreneurial characteristics of innovation managers.

2 INTERNATIONAL ENTREPRENEURIAL ORIENTATION

Over the years, managers realized that opportunities were no longer just in the domestic environment, leading companies to internationalization (Bahl; Lahiri; Mukherjee, 2021; Knight; Cavusgil, 1996; Oviatt; Mcdougall, 1994). When it comes to results for the pursuit of competitive advantage, the human factor is involved, whether in the creation of the strategy, in the development and implementation of products and processes, or in the management of teams for the purposes of the organization. Managerial skills are sources of competitive advantage and are linked to the orientation of organizational management (Pertuz; Pérez, 2021; Silveira-Martins; Mascarenhas; Muller, 2017).

Miller (1983) points out that the entrepreneurial orientation of the manager resides in the fact of how the organization develops in terms of proactivity (market pioneering, capacity to innovate and decision making and taking risks), other empirical studies demonstrate that the belief of managers from companies that internationalize see that the target market can be any market - domestic, international, or global (Zhao et al., 2021; Hagen; Zuchela, 2014; Zhang; Tansuahaj; Mccullough, 2009). The vision and guidance of managers concerning the internationalization of these companies boost their corporate actions (Bahl; Lahiri; Mukherjee, 2021; Danik; Kowalik, 2013).

Knowledge and experience in foreign markets are significant antecedents for the performance of companies in the foreign market (Do; Nguyen; Shipton, 2023; Dib; Rocha; Silva, 2010; Knight, 1997; Knight; Cavusgil, 2005; Rialp; Rial; Knight, 2005). For Freeman and Cavusgil (2007), the international orientation refers to a wide range of demographic and psychological characteristics. The international experience and the mastery of foreign languages, for example, are less favorable to the risk and have a positive attitude towards internationalization (Dib; Rocha; Silva, 2010; Freeman; Hutchings; Chetty, 2012; Zhang; Tansuahaj; Mccullough, 2009; Du; Zhu; Li, 2023).

Knowledge about the business environment abroad can serve to increase the company's ability to understand and use the relationship between information factors to achieve certain objectives (Knight; Cavusgil, 2004; Zhang; Tansuahaj; Mccullough, 2009). Some studies focus on the personal characteristics of the international entrepreneur and the reasons why entrepreneurs develop such characteristics (Morris; Lewis, 1995; Bahl; Lahiri; Mukherjee, 2021). Other authors reinforce the importance of referring to personal life experiences such as foreign education or work experience, travel, experience abroad, and knowledge of languages (Ditch et al., 1984; Simmonds; Smith, 1968; Du; Zhu; Li, 2023). This same theory is defended by Aaby and Slater (1988), Athanassiou and Nigh (2000), Ibeh (2003), and Pertuz and Pérez (2021), adding that previous professional experiences, a high level of education and knowledge, and foreign languages are interconnected characteristics for a strong international orientation.

Among the drivers of internationalization, Zucchella, Palamara, and Denicolai (2007) and Do et al. (2023) still add that the previous experience of an entrepreneur is fundamental, especially the international one. This experience implies the development of personal and business-related contacts abroad.

3 INNOVATION, ITS MEASUREMENT, AND INTERNATIONAL ENTREPRENEURIAL ORIENTATION

Innovation depends on the association with the context of the organization, linking it to procedures that range from stimulating creativity, learning, and knowledge, to forming partnerships and organizational development aligned with the organization's strategy (Bessant; Tidd, 2009; Anand et al., 2021). In the production process, creativity and innovation are related because creativity (considered as the creation of a new combination) requires innovation (which concerns the realization of a new idea), in the same way that creativity is a prerequisite for the generation of innovation (Hammershøj, 2017). To understand the impact of innovations, a form of measurement is needed. However, there is no single way to measure it that captures the multiplicity of the innovation characteristics (Meissner; Polt; Vonortas 2016; Bahl; Lahiri; Mukherjee, 2021).

In the scales where objective data are used to measure innovation, some numbers or percentages assign value to what is intended to be measured, as a measure of profitability, sales performance, and market (Koler; Sofka; Grimpe, 2012; Lin; Che; Ting, 2012; Löfsten, 2014). Subjective scales are relevant when there is no systematic and reliable data on innovation performance (Chen et al.,2015). The use of data from the perception of managers and others involved in the performance results of the organization has been frequent in studies on innovation (Cheng; Chang; LI, 2013; Papanastassiou; Pearce; Zanfei, 2020).

Innovation indicators encompass financial and non-financial elements (Bakar & Ahmad, 2010), such as market orientation, knowledge of the host country, absorption capacity, and effective product innovation (Murray; Chao, 2005). When the objective is to measure different forms of innovation, other issues can be applied, such as the performance of new technology ventures, dysfunctional competition, institutional support, environmental turbulence, strategic alliances for product development, political network, size, origin and ownership of new technology ventures (Li; Atuahene-Gima, 2001; Anand et al, 2021), market, technical and customer performance (Manthey et al., 2016), technical and technological aspects, development time, profitability and market share (Heidt, 2008).

Greater international entrepreneurial orientation contributes to the better performance of companies (Buccieri; Javalgi; Cavusgil, 2020), as well as boosting the initial movement in the search for innovations (Slater; Narver, 1995; Bahl; Lahiri; Mukherjee, 2021). Hernandéz-Perlines, Moreno-García, and Yañes-Araque (2016) identified that there is a relationship between International Entrepreneurial Orientation and Innovation as factors that promote the best performance of companies. Observing that IEO understands the company's innovativeness, it can be seen that IEO understands the ability to promote new ideas and experimentation that can result in new products, services, or technological processes (Lumpkin; Dess, 1996; Papanastassiou; Pearce; Zanfei, 2020). It also contributes to the development of market technological skills (Jin; Cho, 2018).

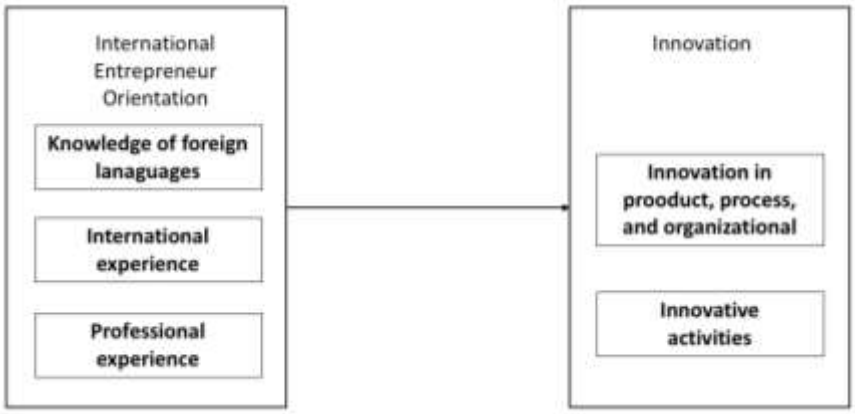
A strong International Entrepreneurial Orientation indicates a more open culture to the identification and exploitation of innovations (Zahra, 2008; Lumpkin; Dess, 1996) and, besides that, allows for better achievement of market demands (Ripollés; Blesa; Monferrer, 2012). In

this perspective, IEO would be related to the promotion of innovations by companies, both in products and processes, as well as the development of innovative activities.

To promote innovations, managers working directly in this process need to present individual skills that allow them to perceive opportunities and take advantage of them, mobilizing the necessary resources for that (Vila; Perez; Coll-Serrano, 2013; Pertuz; Pérez, 2021). In addition, Tartari et al. (2014) highlight the need for entrepreneurial skills in professionals who work directly with innovative activities. It is interesting to note that the studies related to this theme focus primarily on technical skills, as evidenced by Vila, Perez and Coll-Serrano (2013), and on personal skills, as shown in the studies by Cerinsek and Dolinsek (2009) and Santandreu-Mascarell and Garzon (2013). The professionals' personal experiences could also, in some way, influence this process, and, within the concept of IEO, it is possible to suppose that the International Entrepreneurial Orientation of professionals working in the R&D area positively impacts the promotion of innovations by companies.

To relate entrepreneurial orientation with the promotion of innovation, a framework was developed (Figure 1). The framework presents the relationship between the orientation, according to the scale applied by Zucchella, Palamara, and Denicolai (2007), and the measurement of innovations' promotion, from the application of the scales previously tested by Galão and Camara (2009) and Galão et al. (2007).

Figure 1 - Theoretical Model



Source: Elaborated by the authors

4 RESEARCH METHOD

The development of research applied through the hypothetical-deductive method was the most appropriate for the development of this research with a deductive profile. The study presents a first stage of descriptive character and a second exploratory one. The population was delimited in the investigation of professionals working in the R&D functions of industrial organizations in the footwear sector. The innovation profile was defined as the employee working in R&D, considering that, within the industrial sector, this is the traditional unit in which innovations are generated. Because the footwear sector is a traditional industrial sector, this delimitation allowed a better sample unit. As it is challenging to identify the total number of this population, we chose a sample based on convenience and accessibility.

The researchers contacted an entity in the footwear sector, focused on materials and technology, intending to obtain support for the collection directly from professionals responsible for the R&D area in these organizations. This entity was founded in 1972. It offers

technical and scientific studies in areas such as physical-mechanical, restricted substances, microbiology, and biomechanics, functioning as an extension of the R&D area for many associated companies.

For data collection, a questionnaire composed of three blocks of questions elaborated from the theoretical review was built. The first block comprised the profile questions of the respondents and aimed essentially to characterize the sample with the use of categorical variables. The second block included the analysis of International Entrepreneurial Orientation, and the third, the analysis of the generation of innovations.

The questionnaire went through a pre-test process, and, after the reviews, the collection process was started. The pre-test included the application of the questionnaire to an initial group of seven professionals in March 2019. Considering that there were no difficulties in answering the proposed questions, data collection was continued.

Data collection took place by sending the online questionnaire to professionals working in the R&D areas of industrial companies in the footwear sector that were responsible for innovative and creative activities. The questionnaire was developed on the Google Docs platform and sent to the entity along with a brief text presenting the research. The entity sent the questionnaire requesting that it be forwarded to the R&D manager. In addition to requesting the respondent's profile when forwarding the survey, a question was also included in the instrument to verify whether the respondent's profile matched the research method. The delimitation of professionals working in companies in this sector occurred due to accessibility and convenience. With the support of a business entity in the field of technology for footwear, a population of 98 industrial companies was obtained. The survey link was sent by e-mail to these companies with the support of an entity manager. The questionnaire was sent in three waves. A sample of 65 respondents was reached.

The use of the Google Docs platform allowed researchers to directly receive responses, which were exported using Microsoft Excel software. The data were then analyzed with the support of SPSS software.

The data were initially analyzed using descriptive statistics. In the next stage, the data were analyzed comparatively. Considering that one of the scales used is of concordance (Likert type), the normality of the data was not tested, which allowed the application of a non-parametric test to compare the statistically significant difference between the attributes that make up the questionnaire blocks, then that can be obtained with the Mann-Whitney test (Dancey; Reidy, 2006). In addition, non-parametric tests are recommended when it comes to small samples (Torman; Costa; Riboldi, 2012). Since the two scales used had previously been tested in scientific publications, their reliability analysis was not performed before data analysis.

4.1 Data measurement

International Entrepreneurial Orientation. The scale of Zucchella et al. (2007) was used in the investigation of the domain of foreign languages, international experience, and professional experiences. The variables used in this scale are dichotomous, having selected the variables used to characterize the professionals, not the company in which they work. The non-investigation of the organizations was a limitation of the research. Respondents were asked to indicate yes or no to each of the statements.

Promotion of innovations. To measure the generation of innovation, the Galão and Camara (2009) and Galão et al. (2007) scales were applied, which measure innovation in terms of product, process, and organizational management, and innovative activities. Respondents

were asked to reflect on the situation in the company where they work and indicate the degree of agreement, using a 5-point Likert scale of their perceptions about the activities presented.

4.2 Sample characterization

A sample of 65 respondents was obtained. Regarding the age of the respondents, the highest percentage corresponds to people between 46 and 55 years old (19 respondents), however, the 36 to 45 years old and 26 to 35 years old obtained very close numbers, 17 and 16 correspondents, respectively. The smallest numbers are in the range of 19 to 25 years old, with 8 respondents, and over 55 years old, with 5 respondents. There were no participants under the age of 18. Regarding gender, 38 respondents are males and 27 are females.

When questioned concerning the level of education, the complete graduation, including bachelor's and other undergraduate degrees, was the option of 24 respondents. In the sequence, there are professionals with postgraduate degrees (specialization, MBA, master's, or doctorate), totaling 20 professionals. Of the total, 11 respondents have completed high school or lower, while 10 have completed technical training.

A final issue for the characterization of the professionals is the time of experience in the company: 21 works in the company for 1 to 5 years, followed by professionals who have been with the company for more than 20 years. In the range between 5 and 10 years, there are 15 respondents. In the range between 3 months and 1 year, 7 professionals participated, and only 2 are less than 3 months old in the current company. Of the total, 25 professionals work at the levels of direction and management, 27 hold positions at tactical levels, and 13 at operational levels.

5 RESULT ANALYSIS

5.1 Analysis of International Entrepreneurial Orientation

The analysis of International Entrepreneurial Orientation begins with the investigation of knowledge of foreign languages. In this regard, the respondents were asked about three aspects: the domain of a foreign language, the domain of two or more foreign languages, and the lack of knowledge of any foreign language. The frequency, the mean, and the standard deviation for these questions are shown in Table 1. It was found that approximately half of the respondents do not speak any foreign language; 49.2% know one language only, and 10.7% of the sample speaks two or more foreign languages.

Table 1 - Knowledge Domain

Question	Yes	No	Mean	Standard Deviation
Do you speak one foreign language?	32	33	1,600	0,4937
Do you speak two or more foreign languages?	7	58	1,892	0,3124
Do you not speak any foreign languages?	32	33	1,508	0,5038

Source: Elaborated by the authors

The international experience was investigated by considering periods of residence and studies abroad, as well as taking trips for different purposes (Table 2). The number of respondents who have lived or studied abroad is relatively low, with 15.3% in the first situation and only 7.6% in the second. However, the number of professionals who have already traveled

abroad for work reached 44.6% of the sample. In international business trips, the highest percentage was obtained concerning trips to participate in fairs, conferences, and similar events (35.3%), and 24.6% have already traveled for commercial purposes. It is interesting to note that when asked about making trips abroad for tourism and leisure, the percentage found was 50.7%.

Table 2 - International Experience

Question	Yes	No	Mean	Standard Deviation
Have you lived abroad	10	55	1,846	0,3636
Have you studied abroad?	5	60	1,923	0,2685
Have you traveled abroad for work?	29	36	1,554	0,5010
Have you traveled abroad with commercial objectives (selling, prospection, and customer service)?	16	49	1,754	0,4341
Have you traveled abroad to participate in fairs, conferences, and similar events?	23	42	1,646	0,4819
Have you traveled abroad for tourism and leisure?	33	32	1,492	0,5038

Source: Elaborated by the authors

The third stage of the investigation of International Entrepreneurial Orientation comprises the investigation of the respondents' previous professional experience (Table 3). Only 23% of professionals have no experience prior to their current job. Regarding previous experience in the same sector as the current one, 50.7% indicated yes, while 64.6% have experience in companies in another sector. Previous experience in a foreign company is low, only 10.7%, while 33.8% have experience in a family business.

Table 3 - Professional Experience

Question	Yes	No	Mean	Standard Deviation
Do you have professional experience before your current occupation (another company)?	50	15	1,231	0,4246
Do you have previous professional experience in the same sector as your current employer?	33	32	1,492	0,5038
Do you have previous professional experience in another sector?	42	23	1,354	0,4919
Do you have previous professional experience in a foreign company?	7	58	1,892	0,3124
Do you have previous professional experience in a family business?	22	43	1,662	0,4769

Source: Elaborated by the authors

5.2 Analysis of the development of innovations

The analysis of the development of innovations was carried out by analyzing the data collected using the Galão and Camara (2009) and Galão et al. (2007) scale. On this scale, there is a division between “Innovation in product, process, and organizational management” and “Innovative activities”. In both groups, respondents were exposed to activities related to it and questioned, on a 5-point Likert agreement scale, about their perception regarding their development in the company where they work during the data collection period.

Regarding "Innovation in product, process and organizational management", the highest average (3,922 points) was obtained concerning the introduction and new products for the national market, which may reveal that the companies in which the respondents work are more focused to the domestic market, considering the international market a source of inspiration for the development of innovations to serve the domestic market. Additionally, it is observed that the introduction of new products by companies in the market with an average of 3,892 points. The introduction of new technological processes for the company, but existing in the sector, obtained the third average, in decreasing order, with 3,406 points. Regarding the lowest indexes, there is the implementation of new methods and management, aiming to meet the certification standards (ISO 9000, ISO 14000, etc.) with 3,062 points, followed by the introduction of new products for the international market with 3,188 points (Table 4).

Table 4 - Innovation In Product, Process, and Organizational Management

Question	Mean	Standard Deviation
Introduction of new products for a company, but existing in the market	3,892	1,0174
Introduction of new products for the national market	3,922	1,1725
Introduction of new products for the international market	3,169	1,3871
Introduction of new technological processes for the company, but existing in the sector	3,406	1,2814
Introduction of new technological processes for the sector	3,365	1,2221
Implementation of advanced management techniques	3,219	1,2658
Implementation of significant changes in the organizational structure	3,188	1,1802
Implementation of significant changes in marketing concepts and/or practices	3,270	1,1942
Implementation of new methods and management, aiming to meet certification standards (ISO 9000, ISO 14000, etc.)	3,062	1,4348

Source: Elaborated by the authors

Innovative activities were measured using the same standard of scale. The development of R&D activities in the company itself obtained the highest average with 3,719 points. Considering that the lowest average, 2,656 points, was obtained concerning the external acquisition of R&D, there exists a relationship between these variables because they obtained extreme scores and opposite activities. However, it is worth noting that there is no need for duality between activities because companies that develop R&D internally can also seek external acquisition with the same proportion. Subsequent activities with higher averages reveal a concern with the management process - acquisition of machinery and equipment aiming at technological improvements with 3,594 points; and quality management and organizational modernization programs with 3,385 points. These are two more aspects focused on company activity that support the result (Table 5).

Table 5 - Innovative Activities

Question	Mean	Standard Deviation
Research and Development (R&D) activities carried out in the company	3,719	1,2658
External acquisition of R&D	2,656	1,2626
Acquisition of machines and equipment that result in significant technological improvements of products / processes or associated with new products / processes	3,594	1,2937
Acquisition of other technologies (software, licenses or agreements and transfer of technology such as patents, brands, and industrial secrets)	3,156	1,2998
Industrial project or design; or associated with technologically new or significantly improved products / processes	3,297	1,2173
Training program oriented to the introduction of technologically new or significantly improved products / processes	3,156	1,2500
Programs of quality management or organizational modernization	3,385	1,2710
New form of commercialization and distribution to the market, involving new or significantly improved products	3,277	1,1111

Source: Elaborated by the authors

5.3 The relationship between international entrepreneurial orientation and the generation of innovations

As presented in the method section, the analysis done to identify the impact of International Entrepreneurial Orientation (IEO) was conducted with the application of the Mann-Whitney non-parametric test. The sample was divided into two parts based on the responses attributed to the dichotomous variables that measured the IEO for measuring the differences between these samples in the variables referring to the generation of innovations. Thus, the analysis started with the comparison by knowledge of foreign languages (Appendix 1).

Concerning the domain of a foreign language, a significant difference was identified at the level of 5% in seven variables. Regarding “Innovation of product, process and organizational management”, the first significant difference identified refers to the “introduction of new products for the company, but existing on the market”, with $\alpha = 0,009$. Regarding the “implementation of significant changes in the organizational structure”, it was obtained an $\alpha = 0,011$. The "implementation of significant changes in marketing concepts and/or practices" presented an $\alpha = 0,044$. The “implementation of new methods and management, aiming to meet the certification standards (ISO 9000, ISO 14000, etc.)” revealed an $\alpha = 0.026$. Analyzing the impact on “Innovative Activities”, the “external acquisition of R&D” presented an $\alpha = 0,02$. The “Programs of quality management or industrial modernization” had an $\alpha = 0,028$. “New forms of commercialization and distribution to the market, involving new or significantly improved products”, obtained an $\alpha = 0,009$.

When analyzing the variable related to the knowledge of two or more languages, no variables with significant differences at the level of 5% were identified. However, when asked if the respondent “does not speak any foreign language”, four statements were identified with

$\alpha < 0,05$ at the 5% significance level. All these assertions also showed less significance when asked if they knew only one foreign language. An $\alpha = 0,006$ was identified in the analysis of the variable "Implementation of significant changes in the organizational structure". Regarding the "Implementation of significant changes in marketing concepts and/or practices, an $\alpha = 0,004$ was found. Then, it obtained an $\alpha = 0,01$ when asked about "New forms of commercialization and distribution to the market, involving new or significantly improved products". The fourth variable that showed a statistically positive difference was "Programs of quality management or organizational modernization", with an $\alpha = 0,032$.

Considering these results, it is possible to state that the knowledge of two or more foreign languages by managers does not impact the generation of innovation. However, knowledge of only one language, as well as ignorance of foreign languages, has an impact on the ability to generate innovations. The results point in the direction of what Mascarenhas Bisneto and Lins (2016) and Bessant and Tidd (2009) claim about the importance of knowledge for the generation of innovations. The survey did not investigate whether the domain of languages was, and remains, an initiative of the employees or an investment of the companies. The results found here may contribute to the identification that there is a tendency for knowledge of other languages to collaborate in this process.

Following the analysis process, samples were compared regarding innovative activities and the international experience of managers (Appendix 2). Considering all the variables and statements that made up the questionnaire, differences were identified in only one statement in each variable. Concerning "making trips abroad for work", a significant difference was noticed with the "introduction of new technological processes for the sector of activity, $\alpha = 0,045$. When asked about "making trips abroad for tourism and leisure", a significant difference was found only in the "R&D activities carried out in the company itself, $\alpha = 0,042$.

Recovering the exposure by Dib, Rocha and Silva (2010), Knight (1997), Knight and Cavusgil (2005), Rialp, Rialp and Knight. (2005), Papanastassiou et al. (2020), and Bahl, Lahiri and Mukherjee (2021), experience in foreign markets is a significant antecedent for the performance of companies in the foreign market. As perceived in the results, the specific relationship with the generation of innovations is very small, and although these two relationships were found, only one possibility of trend possibility was identified. It should be noted that, considering that the international experience and the domain of foreign languages reduce the risks and have a positive attitude toward internationalization (Dib; Rocha; Silva, 2010; Freeman; Hutchings; Chetty, 2012; Zhang; Tansuahaj; Mccullough, 2009; Zhao et al., 2021), it was not possible to reach a level of responses that confirmed this in the innovation environment of companies.

The third stage of the analysis process considered previous professional experience (Appendix 3). Only two significant differences were identified at this stage. When asked about previous professional experience in the same sector as the current employer, an $\alpha = 0,031$ was obtained regarding the "introduction of new technological processes for the company, but existing in the sector'.

Regarding the "previous professional experience in a family business", there was only a difference concerning the "Acquisition of machines and equipment that resulted in significant technological improvements in products/processes or associated with new products/processes", $\alpha = 0,007$. The relationship between previous professional experiences and the generation of innovations proved to be very small, signaling only one correlation. Perhaps some competencies are not yet reflecting their full potential for impact, since the need for innovation can still be considered a recent demand in the corporate environment, requiring new skills from companies and managers. Since innovation is the central axis of a business strategy (Schreiber,

2013; Anand et al., 2021), as it allows the creation of value and competitiveness (Pedrosa, 2017; Do; Nguyen; Shipton, 2023), international entrepreneurial orientation can become increasingly important in the innovation process, not being possible to ignore it.

To make the results achieved by the study clearer, Table 6 was prepared.

Table 6 - Main results of the research

Empirical evidence	Related authors
It was found that approximately half of the respondents do not speak any foreign language; 49.2% know one language only, and 10.7% of the sample speaks two or more foreign languages.	Do, Nguyen and Shipton (2023); Papanastassiou, Pearce e Zanfei (2020)
The number of respondents who have lived or studied abroad is relatively low, with 15.3% in the first situation and only 7.6% in the second. However, the number of professionals who have already traveled abroad for work reached 44.6% of the sample.	Zhao et al. (2021); Bahl, Lahiri and Mukherjee (2021)
Previous experience in a foreign company is low, only 10.7%, while 33.8% have experience in a family business.	Anand et al. (2021); Zhao et al. (2021)
Regarding "Innovation in product, process and organizational management", the highest average (3,922 points) was obtained concerning the introduction and new products for the national market.	Pertuz and Pérez (2021); Du, Zhu and Li (2023)
Introduction of new products for companies, but that already exist in the market, obtained an average of 3,892 points. The introduction of new technological processes for the company, but exists in the sector, achieved an average of 3,406 points. Regarding the lowest indexes, there is the implementation of new methods and management, aiming to meet the certification standards (ISO 9000, ISO 14000, etc.) with 3,062 points, followed by the introduction of new products for the international market with 3,188 points	Anand et al. (2021); Bahl, Lahiri and Mukherjee (2021); Bakar and Ahmad (2010); Buccieri, Javalgi and Cavusgil (2020)
The lowest average, 2,656 points, was obtained concerning the external acquisition of R&D.	Vila, Perez and Coll-Serrano (2013); Tartari et al. (2014); Do, Nguyen and Shipton (2023)
The knowledge of two or more foreign languages by managers does not impact the generation of innovation. Knowledge of only one language, as well as ignorance of foreign languages, has an impact on the ability to generate innovations.	Rialp, Rialp and Knight (2005); Keupp and Gassmann (2009) Hernandéz-Perlines, Moreno-García, and Yañes-Araque (2016)
The international experience and the domain of foreign languages reduce the risks and foster a positive attitude toward internationalization.	Mascarenhas Bisneto and Lins (2016), Bessant and Tidd (2009)
The relationship between previous professional experiences and the generation of innovations proved to be very small, signaling only one correlation. Perhaps some competencies are not yet reflecting their full potential for impact, since the need for innovation can still be considered a recent demand in the	Dib, Rocha and Silva (2010) Freeman, Hutchings and Chetty (2012); Zhang, Tansuahaj and

corporate environment, requiring new skills from companies and managers.	Mccullough (2009); Zhao et al. (2021)

Source: Elaborated by the authors

The results of the survey indicated that, although almost half of the sample did not have command of a second language, this knowledge impacted the ability to promote innovation. It was not identified that a third language would bring any extra gain, according to the second language, the great watershed. Considering that the ability to promote innovations derives, in part, from the knowledge and experience of the managers involved in this process, command of a second language facilitates this process, facilitating it. Furthermore, it is worth noting that the respondents were able to identify that international experience, associated with knowledge of languages, reduces risks and has a positive attitude towards internationalization. Thus, it can be stated that international entrepreneurial orientation contributes to the competitiveness of organizations, supporting both the innovation and internationalization processes.

6 FINAL CONSIDERATIONS

Considering that it was not possible to identify previous studies on the relationship between the international entrepreneurial orientation of innovation managers and the generation of innovation, it is expected that this research will initiate this discussion. Even though statistically significant differences were found in some of the variables of the different constructs, the small quantity and low values found, as well as the use of an agreement scale, lead to the observation that the results can only be considered as trends, without consistency enough for their generalization. There are also some limitations in this study: the small sample size and the fact that it was obtained by convenience and accessibility criteria. If using a bigger sample, greater statistically significant differences could be identified concerning measurement by levels of agreement.

It is also worth highlighting the limitations of the study's external validity. Because it was constituted by accessibility and convenience criteria, and by the absence of studies that would allow us to characterize the population, it is not possible to state how much this sample effectively reflects the characteristics of the population. Besides that, as it is a small effort to analyze the relationship investigated here, it is considered that the results obtained, when treated as trends, may support the development of future studies on the subject, as well as the improvement of management functions in organizations.

Despite these limitations, some points can contribute to organizational managers, as well as guide the development of new studies on the topic. The first one is that knowledge of two or more foreign languages did not generate any difference between the samples, whereas knowledge of only one, or total ignorance of foreign languages, differentiates the samples. Within this aspect, it is important to highlight that there are four variables that present a significant difference when analyzed in the two constructs. An expanded sample could verify this fact, as well as complementary studies could seek to better understand the relationship between these two constructs and their four variables. There was a great imbalance in the analysis of the number of respondents who speak two or more languages, with only seven in a sample of 65, which may also have had an impact on the analysis.

It is also important to highlight a limitation in the analysis process. The theoretical framework only supported the analysis of the relationship between the two research dimensions. However, as the data were analyzed and the relationships were confirmed, an opportunity was realized to deepen the knowledge about these relationships. In this sense, future studies could

apply a Multiple Linear Regression Analysis that can help quantify the impact of multiple independent variables (such as knowledge of foreign languages and international experience) on the promotion of innovations. In addition, another opportunity is to use an Analysis of Variance (ANOVA) to compare the means of different groups of managers, such as those with different levels of international experience, verifying significant differences in the promotion of innovations. These additional techniques can offer a more robust and comprehensive analysis of the data, providing valuable insights into the individual contribution of each variable and the differences between different groups of managers. These results can contribute not only to the advancement of scientific knowledge but also to organizations in their search for greater competitiveness.

Research results offer, as practical contributions, for professionals who are engaged in international trade, to improve their competencies to innovate, recommendations to seek opportunities to increase time spent abroad, working, studying, establishing a network, learn more languages, and an open mind to new experiences. For companies that desire to innovate and invest in the internationalization of their operations, this research offers, as a practical contribution, suggestions to invest more in the development of new competencies of the team workers, through training and providing opportunities to study and learn new languages, time to exercise creativity and brainstorm to foster innovation.

International experience and professional experience, in turn, were dimensions in which significant differences were found only in two constructs, with two variables in each. Observing the descriptive analysis, they have the greatest balance of respondents among the different groups. Once again, the possibility of weakness in the analysis is highlighted due to this difference in the number of respondents in each group. The attempt to identify whether international travel for different purposes could have different impacts has not been confirmed. It is understood that trips abroad for work have an impact on the generation of innovations, and it is not possible to specify the purpose of the trip. At the same time, trips abroad for tourism and leisure tend to have an impact on innovative activities. Regarding professional experience, the balance between the number of respondents was found in only one of the constructs (previous experience in the same sector), which showed a significant difference between the analysis, because even with a difference of 22 and 43 respondents, another construct (experience family business) also showed a difference in one variable. It is suggested that the data presented here be considered as behavioral trends and that further studies be carried out to expand knowledge on the topic.

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APPENDIX

	Do you speak a foreign language?		Do you speak two or more foreign languages?		You don´t speak any foreign language	
	U of Mann-Whitney	Significance Assint. (Bilateral)	U of Mann-Whitney	Significance Assint. (Bilateral)	U of Mann-Whitney	Significance Assint. (Bilateral)
Introduction of new products for the company, but existing in the market	321,5	**0,009***	138,5	0,153	407	0,096
Introduction of new products for the national market	374	0,083	150	0,559	416	0,173
Introduction of new products for the international market	405	0,163	126	0,096	503	0,737
Introduction of new technological processes for the company, but existing in the sector	480	0,844	171,5	0,953	495,5	0,82
Introduction of new technological processes for the sector	391	0,196	144,5	0,99	406,5	0,205
Implementation of advanced management techniques	427,5	0,35	169,5	0,915	441	0,327
Implementation of significant changes in the organizational structure	312,5	**0,011***	156	0,669	312,5	**0,006***
Implementation of significant changes in marketing concepts and/or practices	341	**0,044***	106,5	0,12	291,5	**0,004***
Implementation of new methods and management, aiming to meet certification standards (ISO 9000, ISO 14000, etc.)	344	**0,026***	184,5	0,689	383,5	0,053
Research and Development (R&D) activities carried out in the company	480,5	0,847	150,5	0,572	475	0,604
External acquisition of R&D	328,5	**0,02***	131	0,309	389,5	0,091
Acquisition of machines and equipment that resulted in significant technological improvements of products/processes or associated with new products/processes	416,5	0,273	97,5	0,068	511	0,989
Acquisition of other technologies (software, licenses or agreements and technology transfer such as patents, brands, industrial secrets)	409	0,234	146,5	0,517	399,5	0,122
Industrial design or design or associated with technologically new or significantly improved products/processes	415	0,304	182,5	0,706	456,5	0,443
Training program oriented to the introduction of technologically new or significantly improved products/processes	480,5	0,85	157	0,688	481,5	0,674
Quality management or organizational modernization programs	347,5	**0,028***	202,5	0,991	369	**0,032***
New forms of commercialization and distribution to the market, involving new or significantly improved products	318	**0,009***	203	1	339	**0,01***

*Statistical significance at 5%

APPENDIX 2

	Have you lived abroad?		Have you studied abroad?		Have you travelled abroad for work?		Have you travelled abroad with commercial objectives (selling, prospection and customer service)?		Have you travelled abroad to participate in fairs, conferences and similar events?		Have you travelled abroad for tourism and leisure?	
	U of Mann-Whitney	Significance Assint. (Bilateral)	U of Mann-Whitney	Significance Assint. (Bilateral)	U of Mann-Whitney	Significance Assint. (Bilateral)	U of Mann-Whitney	Significance Assint. (Bilateral)	U of Mann-Whitney	Significance Assint. (Bilateral)	U of Mann-Whitney	Significance Assint. (Bilateral)
Introduction of new products for the company, but existing in the market	215	0,253	94,5	0,153	468	0,456	378	0,823	480	0,966	491,5	0,616
Introduction of new products for the national market	165	0,092	103	0,24	442	0,375	356,5	0,854	447	0,823	454	0,415
Introduction of new products for the international market	250	0,642	139	0,782	428	0,205	334	0,367	399,5	0,242	488,5	0,596
Introduction of new technological processes for the company, but existing in the sector	158	0,076	91	0,147	449	0,445	346	0,726	404,5	0,404	505	0,929
Introduction of new technological processes for the sector	212,5	0,537	131,5	0,724	345,5	**0,045***	329,5	0,818	355	0,197	405	0,198
Implementation of advanced management techniques	220,5	0,592	104,5	0,268	449	0,444	352,5	0,807	444	0,793	509	0,972
Implementation of significant changes in the organizational structure	213	0,493	122	0,511	451,5	0,464	303	0,293	457,5	0,948	481,5	0,678
Implementation of significant changes in marketing concepts and/or practices	195	0,332	109	0,346	437	0,45	303,5	0,348	410,5	0,549	465,5	0,666
Implementation of new methods and management, aiming to meet certification standards (ISO 9000, ISO 14000, etc.)	269,5	0,919	106,5	0,274	519	0,968	273,5	0,065	438,5	0,533	399	0,084
Research and Development (R&D) activities carried out in the company	223	0,622	118	0,442	471,5	0,646	342,5	0,679	446,5	0,819	366	**0,042***
External acquisition of R&D	180	0,18	147	0,99	444	0,404	338,5	0,637	441	0,76	484	0,704
Acquisition of machines and equipment that resulted in significant technological improvements of products/processes or associated with new products/processes	206	0,407	141	0,886	470,5	0,639	318,5	0,422	419,5	0,534	431	0,263
Acquisition of other technologies (software, licenses or agreements and technology transfer such as patents, brands, industrial secrets)	192	0,273	133,5	0,72	453	0,48	364	0,955	419,5	0,539	474,5	0,611
Industrial design or design or associated with technologically new or significantly improved products/processes	268,5	0,977	124	0,545	412	0,185	349	0,576	435	0,599	476	0,623
Training program oriented to the introduction of technologically new or significantly improved products/processes	215	0,52	132	0,691	479,5	0,734	362,5	0,935	424,5	0,586	471,5	0,581
Quality management or organizational modernization programs	259,5	0,772	104,5	0,25	441	0,272	388	0,95	451,5	0,657	443,5	0,254
New forms of commercialization and distribution to the market, involving new or significantly improved products	212	0,237	91,5	0,137	432	0,22	347	0,479	438	0,523	442,5	0,246

*Statistical significance at 5%

*Statistical significance at 5%

APPENDIX 3

	Do you have professional experience prior to your current occupation (another company)?		Do you have previous professional experience in the same sector as your current employer?		Do you have previous professional experience in another sector?		Do you have previous professional experience in a foreign company?		Do you have previous professional experience in a family business?	
	U of Mann-Whitney	Significance Assint. (Bilateral)	U of Mann-Whitney	Significance Assint. (Bilateral)	U of Mann-Whitney	Significance Assint. (Bilateral)	U of Mann-Whitney	Significance Assint. (Bilateral)	U of Mann-Whitney	Significance Assint. (Bilateral)
Introduction of new products for the company, but existing in the market	327,5	0,439	497,5	0,675	472,5	0,88	189	0,756	412	0,376
Introduction of new products for the national market	332	0,552	472,5	0,575	435	0,687	151	0,576	443,5	0,782
Introduction of new products for the international market	366,5	0,892	508,5	0,794	469	0,844	167	0,436	390,5	0,243
Introduction of new technological processes for the company, but existing in the sector	338,5	0,637	356	**0,031***	434,5	0,69	127	0,266	354	0,117
Introduction of new technological processes for the sector	309,5	0,569	440,5	0,432	428	0,845	160,5	0,8	371	0,235
Implementation of advanced management techniques	279	0,149	456,5	0,443	408,5	0,436	132	0,32	419	0,532
Implementation of significant changes in the organizational structure	336	0,607	443	0,34	456	0,93	172,5	0,972	388,5	0,285
Implementation of significant changes in marketing concepts and/or practices	322	0,528	458,5	0,595	430	0,755	106,5	0,12	388	0,426
Implementation of new methods and management, aiming to meet certification standards (ISO 9000, ISO 14000, etc.)	362,5	0,842	525,5	0,973	462	0,769	196,5	0,888	390	0,24
Research and Development (R&D) activities carried out in the company	363,5	0,947	439	0,307	433	0,669	173	0,981	389,5	0,285
External acquisition of R&D	357	0,864	469,5	0,557	422,5	0,566	129	0,287	416,5	0,508
Acquisition of machines and equipment that resulted in significant technological improvements of products/processes or associated with new products/processes	366	0,98	484	0,697	448	0,838	128,5	0,278	276,5	**0,007***
Acquisition of other technologies (software, licenses or agreements and technology transfer such as patents, brands, industrial secrets)	327	0,511	441	0,329	430,5	0,649	117,5	0,183	345	0,091
Industrial design or design or associated with technologically new or significantly improved products/processes	334	0,789	502	0,89	405	0,407	126,5	0,106	413,5	0,48
New forms of commercialization and distribution to the market, involving new or significantly improved products	294	0,192	519	0,903	397,5	0,225	185	0,694	374	0,156

*Statistical significance at 5%