

## A POSSIBLE RELATIONSHIP BETWEEN INTERNATIONALIZATION AND INNOVATION STRATEGIES: AN ANALYSIS OF PORTUGUESE SMEs

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**Abstract:** The importance of internationalization for firm's survival and growth seems to be consensual among the researchers on this topic. Innovation is also considered a key factor for firm's development and competitiveness. Moreover, the relationship between innovation and internationalization has become a matter of increasingly interest in the literature and can be analysed according to two streams: innovation as cause or consequence of companies' internationalization. Additionally, given the great importance of small and medium-sized enterprises (SMEs) for the growth of economies, part of literature has paid special attention to this kind of enterprises. The purpose of this work is to verify the existence of a possible relationship between internationalization and innovation strategies among Portuguese firms by exploring whether Portuguese entrepreneurs consider innovation as an important factor or a motivation in the internationalization process. To achieve this goals, and based on data obtained from an online questionnaire survey, descriptive and inferential data analysis techniques are used. In particular, graphical representations, descriptive measures and also, Mann-Whitney and Kruskal-Wallis (with multiple comparisons) non-parametric tests.

**Key words:** internationalization, innovation, SMEs

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### Introduction

The development of the business world has been breaking all boundaries, being the increasing internationalization of companies taken for granted regardless of size, age, international or domestic experience, slightly contradicting the traditional theories of internationalization. It is imperative that companies find new ways to develop competitive advantages which comprises seeking and acquiring new skills,

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resources and capabilities. The determining factors in the internationalization process are the focus of several traditional theories and Lobo, Fernandes, Ferreira and Peris-Ortiz (2019) list a number of specific challenges faced by small and medium-sized enterprises (SMEs), which include lack of human, financial, technological and informational resources. The importance of innovation seems to increase in a global market context. Sapienza, Autio, George and Zahra (2006) highlight the need for companies have to continuously adapt to the dynamic changes in the environment so the innovation process is fundamental and product innovation is essential. According to Zucchella and Siano (2014), innovative resources and capabilities are essential for firms' growth in both domestic and foreign markets. By addressing the product life cycle, Genc, Dayan and Genc (2019) and Saridakis, Idris, Hansen and Dana (2019) stress that as these cycles are getting shorter, it is imperative that companies continually explore new products (or services) to offer. In addition, the authors mention the Vernon's Product Life Cycle Theory in order to link innovation and internationalization. Furthermore, there seems to be a broad consensus among the researchers that internationalization and R&D investment / innovation are two key strategic decisions for the success of businesses (Chang, Chang, Hsu and Yang, 2018; Gjergji, Lazzarotti, Visconti and Saha, 2019). Besides, their joint effect is considered vital for companies' success and survival in the global markets (Onetti, Zucchella, Jones and McDougall-Covin, 2012). This relationship is even described as a dynamic virtuous circle given that internationalization and innovation reinforce each other (Golovko and Valentini, 2011).

Therefore, this work aims to investigate the influence of internationalization on innovation, by exploring whether Portuguese entrepreneurs consider innovation as an important factor or a motivation in the internationalization process.

### Literature Review

The determining factors in the internationalization process have been addressed by several traditional theories. Czinkota *et al.* (1999) enumerate a set of key factors that influence the strategic approach to business internationalization. They group these factors into proactive factors (potential advantages in terms of profits, technology, unique products, information management, tax benefits and economies of scale) and reactive factors (competitive pressure, excess capacity, saturation of the domestic market and proximity to customers). Lobo *et al.* (2019) stress that lack of human, financial, technological and informational resources are some of the specific challenges faced by SMEs. According to Mathews (2006) companies might internationalize for relational motives (by responding to competitors, following up on customers' internationalization processes or acting upon approaches of foreign companies), access to foreign resources (finding lower production costs abroad or accessing technological knowledge through branches) or government incentives (through the support of the home or host government). Additionally, Dunning and Lundan (2008) point out four motivations for firms'

internationalization, where Resource-seeking and Strategic asset-seeking are included. Resource-seeking is defined as a search for resources, such as raw material, labour and obtaining technological, management or marketing know-how, which given the scarcity or non-existence in the country of origin, lead to a need for investment in foreign countries. Strategic asset-seeking is mentioned by the authors given that multinational enterprises (MNEs) constantly seek to exploit gains from market imperfections, or originate them for their own benefit. To do so, acquiring physical goods, specialized labour, know-how, in R&D, through mergers or joint ventures, in order to achieve long-term goals.

On the other hand, in a global market context, innovation seems to be increasingly important. The importance of innovation for the survival and growth of firms have been underlined by both theoretical and empirical literature (e.g. Audretsch, Coad and Segarra, 2014; Baumol, 2002; Cefis and Marsili, 2006; Schumpeter, 1942; Zucchella and Siano, 2014). Within this framework Schumpeter's work is considered pioneer in recognizing innovation as fundamental for the growth and survival of firms competing in the market (Audretsch et al., 2014; Cefis and Marsili, 2006). The importance of innovation is related to the fact that it enables cost reduction and/or product differentiation, which is an important tool for the competitiveness of companies, ensuring them a competitive advantage (Genc et al., 2019). Consequently, innovative resources and capabilities are considered vital for firms' growth in both domestic and foreign markets. Moreover, the creation and development of SMEs is frequently based on innovations (Zucchella and Siano, 2014).

Additionally, authors as Sapienza *et al.* (2006) argue that companies have to continually adapt to the dynamic changes in the environment so the innovation process is fundamental and product innovation is essential. In this regard, the distinction between different types of innovation may be relevant for this discussion. Product innovation, process innovation, market innovation, input innovation and organizational innovation are the five types of innovations proposed by Schumpeter (1934). However, OECD (2005) consider the four types of innovation: product innovation, process innovation, marketing innovation and organisational innovation. The success of firms can differ according to innovation type. Heunks (1998), for example, distinguishes the effect of different types of innovation on small firms and concludes that any kind of innovation contributes to their growth but only process innovation increases their productivity. Nonetheless, the author emphasizes that profits tend to be low in innovating small firms due to the price of innovative investments and/or because that was the main reason for innovation. For medium enterprises, Heunks (1998) shows that the relation between innovation types and firms success is not statistically significant (at 0.05 level). Furthermore, the referred work finds that medium-sized firms exhibit higher levels of all types of innovation than small firms, which can constitute an explanation for why only in small enterprises success depends on innovation.

The classification of innovations as to the degree of novelty should also be

considered. An innovation is considered incremental when involves a low level of novelty and radical when it comprises a high level of novelty. Moreover, radical innovations imply big changes (correspond to something completely new) and incremental innovations are related to a process of continuous improvement, for example, step-by-step improvements of existing products (Eiriz, Faria and Barbosa, 2013; Sarkar, 2014; Tidd et al., 2018). Thus, radical innovations can be associated with the Schumpeterian term of 'creative destruction', that is, from Schumpeter's original view incremental innovation does not exist (Schumpeter, 1934, 1942). The contribution of innovations to business growth may differ depending on whether their strategies are based on radical or incremental innovations (e.g. Eiriz et al., 2013).

The importance of innovation for business performance can also be understood through the analysis of the product life cycle: on the one hand, as these cycles are getting shorter, it is imperative that companies continually explore new products (or services) to offer; on the other hand, according to Vernon's Product Life Cycle Theory, firms' internationalization process is related to the product life cycle (Genc et al., 2019; Saridakis et al., 2019). Furthermore, it is consensual that internationalization and R&D investment / innovation are two fundamental strategic decisions to the success of firms (Chang et al., 2018; Gjergji et al., 2019) and the combined effect of innovation and internationalization is viewed as a driving force of companies' success and survival in the global markets (Onetti et al., 2012). The relationship between these two factors is even described as a dynamic virtuous circle given that internationalization and innovation are mutually reinforcing (Golovko and Valentini, 2011). Notwithstanding, studies on this link are relatively recent and, although most of them are devoted to large multinationals analysis, a flow of literature has emerged with a special focus on SMEs. In particular, the contribution of innovation to the process of internationalization of SMEs has aroused the interest of researchers in recent years (Saridakis et al., 2019). However, the innovation–internationalization link is not a straightforward issue and the referred relationship is not a matter of consensus among researchers. If, on the one hand, internationalization can be considered in itself a process of innovation and it allows the access to diverse sources of knowledge stimulating innovation, on the other hand, the development of innovations can create or improve market opportunities (Zucchella and Siano, 2014). Some of published works address the impact of innovation on firms' internationalization while other discuss the reverse causality, and in each case can be discussed if there is a direct or an indirect influence. There are also works that explore this relationship in a bidirectional way and/or the complementary effect of these two factors for example on company's growth (Gjergji et al., 2019). In line with Genc et al. (2019) most of the existing research about this relationship investigates the influence of innovation on internationalization and only few studies considers the opposite impact. In particular with regard to the former, the lack of consensus among the literature is highlighted by recent research (e.g. Genc et al., 2019 and Saridakis et al., 2019)

given that different results can be found in empirical studies: they find a positive, negative or even a not significant effect between these two factors. Among the justifications given for these different results are the industry context, the innovation measurement, especially when the analysis focuses on SMEs, and how the studies address the type of innovation. As reported by Gjergji et al. (2019) it is possible to identify the main empirical findings about the relationship between internationalization and innovation distinguishing the different branches of research that have addressed this relationship. These authors mention that most works evaluate the direct impact of one factor on the other, the influence of innovation on internationalization and the reverse direction of the relationship. Nevertheless, regarding the sign of the relationship they conclude that while there is broad consensus that innovation has a positive effect on internationalization, the results on the reverse causal influence are controversial. Empirical studies on innovation-internationalization reciprocal causal relationship as well as on innovation-internationalization complementarity and simultaneity impact on firm's performance and/or growth find a positive sign. It is, however, important to note that most of the studies considered measure internationalization through exports (in particular, export propensity).

Focusing on the literature that studies how innovation contributes to internationalization, it is possible to highlight some works. O'Cass and Weerawardena (2009) explore the role played by international entrepreneurship and innovation in SMEs internationalization. Among other aspects, the authors note that innovative firms are better equipped to exploit international market opportunities and perform better in such markets. Meliá, Pérez and Dobón (2010), for example, examine Spanish SMEs within the service sector and they conclude that an innovative orientation contributes for an early foreign market entry and allows them to choose higher-control entry modes. Williams and Shaw (2011) discuss the innovation-internationalization relationship in tourism sector, emphasizing, for instance, that successful internationalization requires innovation. Zucchella and Siano (2014) investigate SMEs in the textile and clothing industry in the Campania Region (Italy), analysing the role played by innovation in driving export performance. Using data from SMEs in the United Kingdom, Saridakis et al. (2019) study the importance of innovation to SMEs internationalization paying special attention to innovation's degree of novelty and the different types of innovation. They find that although innovative SMEs are more likely to internationalize than non-innovative ones, the results differs according to the type of innovation (for example, the propensity to export is higher in case of goods innovation than in case of service or process innovation) and the degree of novelty of innovation (for example, radical innovations or the combination of radical and incremental innovations have a higher effect on the probability of SMEs exporting than incremental innovations). Lecerf and Omrani (2020) examine the effects of innovation on SMEs internationalization based on a sample of 612 German companies of different industries. The results found by them suggest that

developing innovation can improve internationalization.

Considering now the branch of the literature that investigate the influence of internationalization on innovation, with a sample of ten Eastern European and Central Asian transition economies, Boermans and Roelfsema (2015), examine how innovation can be affected by different internationalization modes. In a similar way, Abubakar, Hand, Smallbone and Saridakis (2019) study the impact of internationalization modes on SME innovation in Sub-Saharan least developed countries. Chang et al. (2018) and Genc et al. (2019), for instance, analyse the effect of internationalization on innovation considering multinational enterprises and SMEs, respectively. The latter conclude that, in general, there is a positive influence of internationalization on innovation and demonstrate that this impact is indirect through market orientation and entrepreneurial orientation, which are considered by the authors as key factors to internationalized SMEs obtain better innovation performance. Using a sample of 2420 Spanish private firms, Gjergji et al. (2019) find a positive effect of the level of exports on the number of innovative products of firm as well as a positive influence of family management on innovation. However, they underline that family firms have particular characteristics that can boost the impact of internationalization on innovation. Elia, Kafouros and Buckley (2020) focus on the role of internationalization in enhancing the innovation performance of firms. To this end, the authors use a sample of 173 Chinese Emerging Multinational Enterprises and demonstrate that the ability of this kind of Chinese firms to increase innovation performance is driven by how and where they choose to internationalize over time.

Authors such as Bagheri, Mitchelmore, Bamiatzi and Nikolopoulos (2019) and Golovko and Valentini (2011) highlight the importance of combining innovation and international activities. In that regard, Lee and Hemmert (2021) emphasize the need to better understand whether innovation and internationalization are complements or substitutes to improve the performance of SMEs. By analysing data from 579 South Korean manufacturing SMEs in an exploration–exploitation perspective on the two strategies, they conclude that firms should balance explorative and exploitative orientation within and across the innovation and market scope domains to enhance financial performance. Additionally, the study of Boermans & Roelfsema (2016) show that internationalization has a positive impact on innovation. Internationalization increases firm performance directly and indirectly through innovation, while the direct impact of innovation on firm performance is insignificant.

Regardless of the different results achieved, it seems to be consensual that one of the advantages provided by internationalization is the access to/acquisition of new resources (Bagheri et al., 2018; Genc et al., 2019; Saridakis et al., 2019). For instance, the study of Zonta and Amal (2018) shows that, the internationalization to a country with stable institutions affects positively the innovation of the firm, providing the possibility of exploring resources, resulting in financial growth, superior knowledge and capabilities. Aiming to corroborate the positive effect of

internationalization on innovation, Gjergji et al. (2019) emphasize the importance of the resources acquired and developed during the internationalization process, especially the access to new technological know-how and knowledge achieved from new alliances (resulting from interaction with foreign partners). Therefore, these authors believe that the resources and skills acquired and/or developed by exporting firms can be essential for innovation. As SMEs often lack resources and capabilities (Bagheri et al., 2018; Genc et al., 2019), it may be difficult for them to invest in research departments (Sarkar, 2014). In this context, sharing innovation activities can be essential and partnerships developed in international market can play an important role.

Drawing on the literature review that we have conducted, we can broadly define the research questions as follows: is innovation an important motivation towards internationalization? Is it even more important to SMEs? Furthermore, as several previous empirical studies also focus on the effects of internationalization on innovation in very specific sectors, we decided to ascertain whether there are differences between sectors, in the Portuguese internationalized firms.

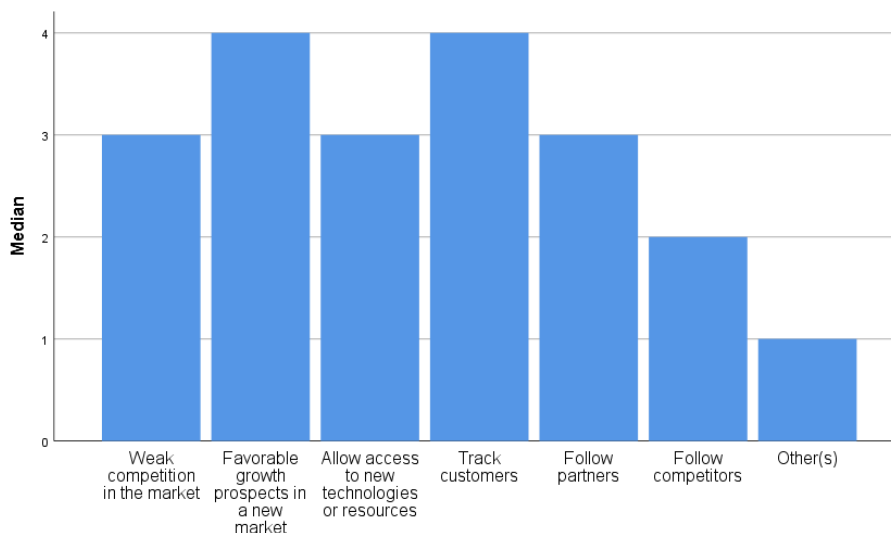
### **Methodology and Results**

The data used in this research was gathered through an online questionnaire survey. The questionnaire was built taking into account the literature review and included several variables related to firm's internationalization. It was sent to all companies registered in the AICEP database of Portuguese internationalized firms, by sending a link via e-mail and using the Google Forms tool. Answers were collected between May 2019 and January 2020. From the data collected, 238 valid responses (Portuguese internationalized firms) were obtained, which were then processed by IBM SPSS Statistics 26.0 software through a quantitative approach based on descriptive and inferential analysis. In particular, graphical representations, descriptive measures and also, Mann-Whitney and Kruskal-Wallis (with multiple comparisons) non-parametric tests, since they are the appropriate tests for variables measured on a Likert scale.

This 238 Portuguese firms are from different sectors (mostly firms are from sectors Manufacturing industries / Wholesale and retail trade; car and motorcycle repair / Consulting, scientific, technical and similar activities) and different sizes. In terms of size: 36.1% are micro firms (< 10 persons), 40.3% small (10-50 persons), 17.6% medium (50-250 persons) and the remaining are large firms (>250 persons) - classification according to Commission Recommendation of 6 May 2003 available at <https://eur-lex.europa.eu/legal-content/PT/ALL/?uri=CELEX%3A32003H0361>.

Aiming to explore the relationship between innovation and internationalization within Portuguese firms, in particular to analyse whether Portuguese entrepreneurs consider innovation as an important factor in the process of internationalization, special attention was paid to answers about the determining factors of internationalization. In particular, entrepreneur was challenge to register "how much importance he attaches to each of the following factors, as a determinant for

the decision to internationalize his firm”, being that these factors are divided into two categories: factors related to Internal Market (Need to win new markets / customers, Need to exploit own resources, Need to reduce / diversify risks, Need to take advantage of economies of scale) and factors related to External Market (Weak competition in the market, Favorable growth prospects in a new market, Allow access to new technologies or resources, Track customers, Follow partners and Follow competitors). In the specific case under study the focus is on the External Market Characteristics. The various determining factors of internationalization of this category have been classified on a 5-Likert point scale: "1-not important", "2-not very important", "3-important", "4-very important" and "5-extremely important". It should be noted that the most important factor is "Favourable perspectives of growth in a new market" with an average of 3.86 (median 4), followed by "Follow up customers" with an average of 3.57 (median 4), so they are considered as very important factors. Considered as important factors are "Follow partners" (average 3.11, median 3), "Allow access to new technologies or resources" (average 2.70, median 3) and "Weak competition in the market" (average 2.68, median 3). It should also be noted that the "Follow competitors" factor is considered to be of little importance (average 2.57, median 2). These results can be seen in Figure 1.



**Figure 1: Median of the factors (characteristics of external market) (own work).**

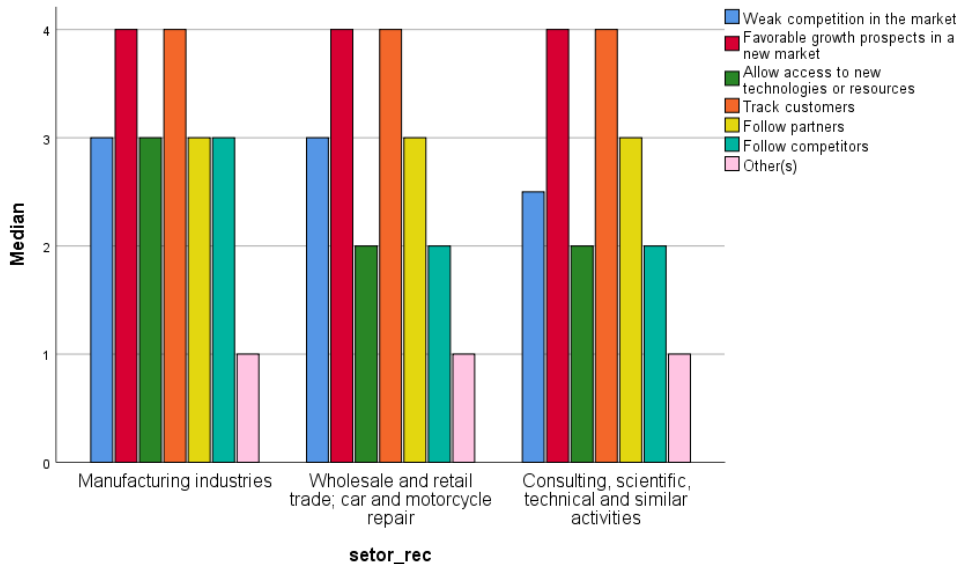
Among all the factors mentioned above, "Allow access to new technologies or resources" can be associated with an entrepreneur's propensity for innovation and 83.5% of respondents to the questionnaire considering it to be at least important. Since 94% of the firms that answered the questionnaire are micro firms or small/medium firms, only these two groups were considered, resulting a sample of



224 firms. In order to analyse the possibility of differences in the degrees of importance attributed to the factors determining the characteristics of the external market (depending on the size of the firm and/or the sector) were carried out non-parametric tests.

By applying the Mann-Whitney test, it is possible to conclude that there are no significant differences between the size of the firm (Micro/SMEs) versus the factor "Allow access to new technologies or resources" ( $p\text{-value}=0.419 > 0.05$ ). That is, the size of the company in which the respondents are included does not influence the importance that they attach to the factor characterizing innovation.

Regarding the sector in which the companies operate, the results show that out of the 238 companies in the sample the majority (199 companies corresponding to 83.6% of the total) belong to one of the 3 sectors: (A) Manufacturing industries (124), (B) Wholesale and retail trade; car and motorcycle repair (51) and (C) Consulting, scientific, technical and similar activities (24). Therefore, the work continues with the recoded sector variable in these 3 categories (*setor\_rec*). Figure 2 presents the median for the several Factors of External Market by sector.



**Figure 2: Median of external market factors by sector (own work).**

According to the Kruskal Wallis test, at a level of significance of 10%, there are significant differences between the sector of the firm versus the factor "Allow access to new technologies or resources" ( $p\text{-value}=0.08 < 0.10$ ). However, the results of this test do not indicate which sectors are different from others. Consequently, for this identification, multiple comparison tests were conducted.

Note that the test statistic implemented in SPSS software for multiple comparisons is Dunn's statistic with Bonferonni correction.

**Table 1. Multiple comparisons between sector and factor “Allow access to new technologies or resources”**

Multiple Comparisons						
Dependent Variable: Rank of Fator						
LSD						
(I) setor_rec	(J) setor_rec	Mean Differenc e (I-J)	Std. Error	Sig .	95% Confidence Interval	
					Lower Bound	Upper Bound
Manufacturing industries	Wholesale and retail trade; car and motorcycle repair	23,08776 1*	11,0563 56	<b>,03 8</b>	1,28307	44,8924 6
	Consulting, scientific, technical and similar activities	18,78629 0	14,8218 81	,20 6	- 10,4445 5	48,0171 3
Wholesale and retail trade; car and motorcycle repair	Manufacturing industries	- 23,08776 1*	11,0563 56	<b>,03 8</b>	- 44,8924 6	- 1,28307
	Consulting, scientific, technical and similar activities	- 4,301471	16,4523 84	,79 4	- 36,7479 0	28,1449 5
Consulting, scientific, technical and similar	Manufacturing industries	- 18,78629 0	14,8218 81	,20 6	- 48,0171 3	10,4445 5
	Wholesale	4,301471	16,4523	,79	-	36,7479

activities	and retail trade; car and motorcycle repair		84	4	28,1449 5	0
*. The mean difference is significant at the 0.05 level.						

From the output of the multiple comparisons (Table 1) it is possible to conclude that, at a significance level of 5%, there are statistically significant differences in the degrees of importance assigned to the factor "Allow access to new technologies or resources" occur between sectors (B)-Wholesale and retail trade; car and motorcycle repair and (A)-Manufacturing industries (p-value=0.038). Manufacturing industries are those that attach a greater degree of importance to this factor that characterizes innovation. This is because 63.7% of these industries consider this factor at least important, while in the Wholesale and retail trade; car and motorcycle repair this percentage drops to 49%. Moreover, 51% of the industries in the latter sector consider the innovation factor to be of little or no importance (see Table 2).

**Table 2. Contingency table between factor "Allow access to new technologies or resources" and sectors (A) and (B)**

			Manufacturing industries (A)	Wholesale and retail trade; car and motorcycle repair (B)
Allow access to new technologies or resources	Not important	Count	18	12
		% within setor_rec	14.5%	<b>23.5%</b>
	Not very important	Count	27	14
		% within setor_rec	21.8%	<b>27.5%</b>
	Important	Count	44	17
		% within	<b>35.5%</b>	33.3%

		setor_rec		
	Very important	Count	29	7
		% within setor_rec	<b>23.4%</b>	13.7%
	Extremely important	Count	6	1
		% within setor_rec	<b>4.8%</b>	2.0%
Total	Count	124	51	
	% within setor_rec	100.0%	100.0%	

More detailed information about the behaviour of the factor "Allow access to new technologies or resources" in the three most highlighted sectors in the study can be find in Figure 3.

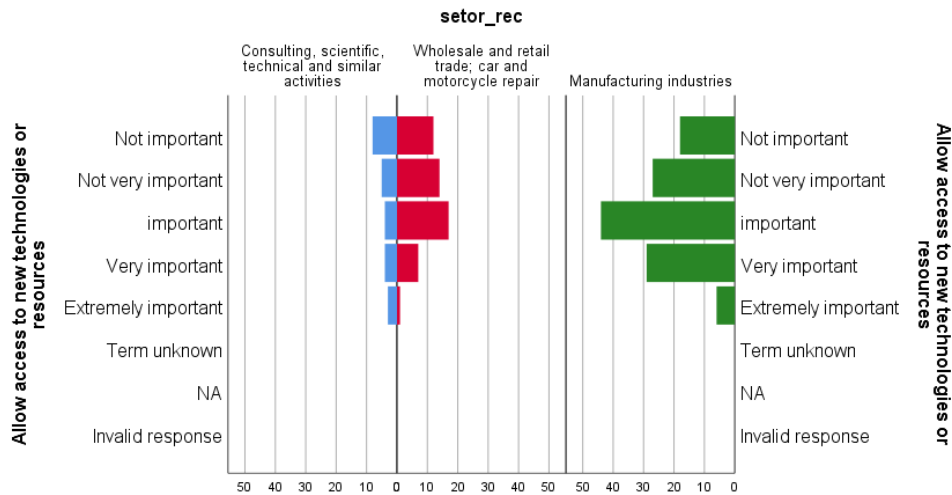


Figure 3: Pyramid count of factor “Allow access to new technologies or resources” by sector (own work).

### Conclusion

The relationship between innovation and internationalization has been increasingly analysed in recent years, and innovation have become a frequent field of discussion in the literature related to firms’ internationalization.

This study explores the relationship between innovation and internationalization within Micro/SMEs Portuguese firms, in particular it analyses whether innovation is considered an important factor in the process of internationalization by the Portuguese entrepreneurs. To achieve these goals, a sample of 224 micro firms or small/medium firms was used and descriptive and inferential data analysis techniques were applied.

Consistent with the literature, the results show that Portuguese entrepreneurs (Micro/SMEs) consider innovation as an important factor in the process of internationalization. In particular, the findings reveal that "Allow access to new technologies or resources" is the third most important factor (of those specified as characteristics of the external market in the questionnaire applied to entrepreneurs) after "Favourable perspectives of growth in a new market" and "Track customers". Focusing on the factor that can reflect innovation propensity, "Allow access to new technologies or resources", it is important to underline that 83.5% of respondents to the questionnaire considering it to be at least important. This is in line with the results found in previous studies, both in terms of theoretical and empirical literature. The demand for resources and technology is one of the factors used to explain SMEs internationalization (for example, Dabić, Maley, Dana, Novak, Pellegrini and Caputo, 2020; Dunning and Lundan, 2008; Mathews, 2006; McDougall, Shane and Oviatt, 1994). Additionally, empirical studies such as Bagheri et al. (2018), Genc et al. (2019), Gjergji et al. (2019) and Saridakis et al. (2019) underline the acquisition of new resources and the access of technological know-how as one of the advantages provided by internationalization.

Moreover, considering different firm sizes it is possible to conclude that there are no significant differences regarding the factor "Allow access to new technologies or resources", which means that the importance that the entrepreneurs surveyed ascribe to this factor is not influenced by the size of the company in which they are. Then, innovation is considered important regardless of the size of the firm. This result allows us to conclude that our results are similar to previous studies and researches. Nevertheless, considering the "micro firms" (within SMEs), we couldn't identify any differences between the defined groups of firms.

However, when differentiating according to sectors in which the companies operate, some differences emerge which should be highlighted. Considering the three main sectors present in the sample ((A) Manufacturing industries, (B) Wholesale and retail trade; car and motorcycle repair and (C) Consulting, scientific, technical and similar activities), this study suggests that there are statistically significant differences in the degrees of importance assigned to the factor "Allow access to new technologies or resources" for sectors (B) Wholesale and retail trade; car and motorcycle repair and (A) Manufacturing industries ( $p$ -value=0.038). That is, Manufacturing industries reveal a higher innovation propensity. The relationship between innovation and internationalization in the context of manufacturing industries is stressed by O'Cass and Weerawardena (2009) who conclude that entrepreneurial SMEs seeking to enter the international

market undertake organisational innovation, which in turn enables them to achieve higher marketplace performance.

This analysis shows that the relationship between innovation and internationalization is present in Portuguese firms. However, it also suggests that there is much more work to be done in this field. Although the sample reflects the Portuguese business reality with regard to the size of companies, in relation to the sectors of activity identified in this analysis, other complementary sectors could be used, i.e. extending the sample to other sectors of internationalized companies. Consequently, in future work, firms from other relevant activity sectors can be included in the sample. Another limitation of the present study is the fact that it is based on answers obtained through a questionnaire, which in itself cannot accurately measure the perceptions of entrepreneurs regarding how companies consider innovation to be an important factor or a motivation for the internationalization process. A more precise degree of validation of the conclusions drawn through the use of quantitative methods used in the data resulting from the questionnaire could be obtained by complementing them with results found through a qualitative analysis arising from possible interviews. In future research, supported by additional data, it would be interesting to look at issues more specifically related to innovation, for example, by including in the questionnaire more questions about the measurement of the propensity of enterprises to innovate. It would also be useful to apply the questionnaire in a near future post-covid to assess the impact of the pandemic on entrepreneurs' perception of innovation as an important or determining factor for the internationalization process.

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## **MOŻLIWE ZWIĄZKI MIĘDZY INTERNACJONALIZACJĄ A STRATEGIAMI INNOWACJI: ANALIZA PORTUGALSKICH MŚP**

**Streszczenie:** Znaczenie umiędzynarodowienia dla przetrwania i rozwoju firmy wydaje się być zgodne wśród badaczy zajmujących się tym tematem. Innowacyjność jest również uważana za kluczowy czynnik rozwoju i konkurencyjności firmy. Ponadto związek między innowacją a internacjonalizacją stał się przedmiotem coraz większego zainteresowania w literaturze i można go analizować według dwóch nurtów: innowacja jako przyczyna lub konsekwencja umiędzynarodowienia przedsiębiorstw. Dodatkowo, biorąc pod uwagę duże znaczenie małych i średnich przedsiębiorstw (MŚP) dla rozwoju gospodarek, w części literatury zwrócono szczególną uwagę na tego typu przedsiębiorstwa. Celem tej pracy jest zweryfikowanie istnienia możliwego związku między umiędzynarodowieniem a strategiami innowacji wśród portugalskich firm poprzez zbadanie, czy portugalscy przedsiębiorcy uważają innowacje za ważny czynnik lub motywację w procesie internacjonalizacji. Aby osiągnąć te cele, na podstawie danych uzyskanych z ankiety internetowej, stosuje się opisowe i inferencyjne techniki analizy danych. W szczególności reprezentacje graficzne,



miary opisowe, a także testy nieparametryczne Manna-Whitneya i Kruskala-Wallis (z wielokrotnymi porównaniami).

**Słowa kluczowe:** internacjonalizacja, innowacje, MŚP

### 国际化与创新战略之间的可能联系:葡萄牙中小企业的分析

**摘要:**国际化对企业生存和成长的重要性似乎在该主题的研究人员中是一致的。创新也被认为是公司发展和竞争力的关键因素。而且,创新与国际化之间的关系已成为越来越多的文献关注的问题,可以从两个方面来分析:作为公司国际化的原因或结果的创新。此外,鉴于中小企业对经济增长的重要性,因此部分文献对这种企业给予了特别的关注。这项工作的目的是通过研究葡萄牙企业家是否将创新视为国际化进程中的重要因素或动机,来验证葡萄牙公司之间国际化与创新战略之间是否存在可能的关系。为了实现此目标,并基于从在线问卷调查获得的数据,使用了描述性和推论性数据分析技术。特别是图形表示,描述性度量,以及Mann-Whitney和Kruskal-Wallis (进行多次比较)非参数检验。

**关键词:**国际化, 创新, 中小企业