




# Exploring the Relationship Between Innovation, Entry Modes and Destination Countries

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**Abstract.** In a world characterized by globalization, where the internationalization of businesses is pivotal for their prosperity, innovation is emerging as a pivotal strategic choice influencing their growth and competitive edge. Despite the broad consensus on the growing importance of internationalization and innovation, some questions arise about the relationship of innovation with entry modes with less commitment to the market and with destination markets with less risks. In order to determine whether there is a pattern of relationship between internationalization modes, destination markets, and innovation for Portuguese firms, the objective is to study this possibility. To achieve this goal, we carried out an online questionnaire survey to collect data. The questionnaire was carefully designed based on a literature review and included various variables related to the internationalization of firms. It was sent to all 8183 firms listed in the AICEP database of Portuguese internationalized firms through Google Forms tool. The data was collected over an 8-month period, starting in May 2019. To analyze the data, we used IBM SPSS Statistics 27.0 software, applying a quantitative approach. We employed Quantitative Analysis Methodologies: Univariate and Multivariate Exploratory Factorial Analysis (EFA), Correlation analysis and the nonparametric tests Chi-square and Mann-Whitney. Based on the findings, the empirical evidence clearly demonstrates that firms employing internationalization modes demanding higher commitment, along with those targeting geographically and psychologically distant markets, place significantly greater emphasis on innovation as a pivotal factor driving their international expansion.

**Keywords:** Innovation · Internationalization · Internationalization Modes

## 1 Introduction

Researchers generally agree that internationalization is crucial to a firm's survival and expansion. Likewise, innovation is acknowledged as a critical factor driving a firm's progress and competitive edge. In light of the aforementioned, the literature has begun to pay more attention to the connection between innovation and internationalization. This link can be examined from two distinct perspectives: innovation as a cause of or a result of a firm's international expansion [1–7]. Additionally, a sizable body of literature

has given this group of businesses extra attention due to the significant contribution that small and medium-sized enterprises (SMEs) make to economic growth. In a global market context, the significance of innovation becomes even more pronounced. The basic relevance of the innovation process is emphasized by Sapienza, Autio, George, and Zahra [8], who stress that businesses must constantly adapt to the dynamic changes in their environment. They place a special emphasis on product innovation. Innovative resources and competencies are essential for a firm's growth, according to Zucchella and Siano [1], both in domestic and international markets. Researchers like Genc, Dayan and Genc [2] and Saridakis, Idris, Hansen and Dana [4], when discussing the product life cycle, underscore the necessity for firms to constantly explore new products (or services) to offer, given that these cycles are getting shorter. Moreover, there is a widespread agreement among researchers that internationalization and innovation (often referred to as Research and Development (R&D) [1, 9–11]) are two pivotal strategic decisions for business success [3, 9]. Furthermore, the synergistic effect of internationalization and innovation is considered crucial for the success and endurance of firms in global markets [12]. The relationship between internationalization and innovation is frequently described as a dynamic virtuous circle, whereby they mutually reinforce one another and produce even more advantages [13]. However, despite the general agreement that internationalization and innovation are becoming increasingly important to firms, and the existence of a link between the two, certain questions arise:

*Q1: Does the relationship between internationalization and innovation differ according to entry modes?*

*Q2: Are the most innovative firms those that opt for internationalization modes with greater commitment?*

*Q3: Are the firms that opt for internationalization modes with greater commitment, those that reveal a greater willingness to take risks?*

*Q4: Are the firms that opt for internationalization modalities with greater commitment, the ones that internationalize to more distant countries geographically and psychologically?*

Taking into account a sample of Portuguese firms, from different sectors of activity (three predominant sectors - 83% of the firms) and of different sizes, this study seeks to address all these inquiries. Therefore, the objective of this paper is to determine whether there is a clear relationship between internationalization strategies and innovation among Portuguese firms. The remainder of this paper is structured as follows. After these introductory remarks, next section presents a literature review. Section 3 is devoted to methodology and results. Finally, Sect. 4 summarizes the main findings of the study and its limitations. It also outlines suggestions for further research in this area.

## **2 Literature Review**

### **2.1 Internationalization**

Internationalization is becoming increasingly important for firms in the modern global economy. With the development of technology and globalization, firms must be able to operate in different markets and cultures. Internationalization opens up new opportunities for firms to expand their customer base, increase revenue, and become more

competitive. It also helps to develop new markets, discover new sources of raw materials, and create new partnerships. By building relationships with diverse stakeholders, firms can better understand customer needs and develop strategies to meet them. Internationalization also helps firms to gain access to new talent, capital, and technology. Additionally, it allows firms to diversify their portfolio and reduce risk. By taking advantage of internationalization, firms can remain competitive and achieve sustainable success [14].

## 2.2 Innovation and Internationalization

So, knowing that firms compete in a complex and uncertain environment with growing global competition, innovation has assumed an increasingly important role in corporate strategy. This fact has been addressed by several authors who, theoretically and/or empirically, underline that innovation is fundamental for the growth of firms, and even for their survival [1, 2, 10, 11]. In addition to studies addressing the effects of internationalization and innovation separately, there are some that focus on internationalization-innovation relationship. Among the latter, it is possible to find those that study the impact of innovation on internationalization, those concerned with the reverse causal relationship and others which consider innovation and internationalization as complementary strategies [1–3, 5–7, 15].

**Access to New Technologies or Resources as a Tool of Innovation.** Mathews [16] presents various reasons why firms may choose to internationalize. These motives can be categorized as relational, resource-based, or government-incentive-driven. Responding to competition, following customers' internationalization processes, or replicating foreign firms' techniques are examples of relational motives. Resource-based motivations, on the other hand, include pursuing reduced manufacturing costs abroad and gaining access to technological expertise through overseas branches. Additionally, government incentives provided by either the home country or host country can also influence internationalization decisions. Furthermore, Gjergji et al. [3] underscore the paramount importance of resources obtained and cultivated throughout the internationalization journey, with a particular focus on gaining access to novel technological expertise and knowledge through forging alliances with foreign partners. According to these scholars, the resources and skills obtained and/or developed by exporting firms play a critical role in supporting organizational innovation. This perspective finds support from other researchers who assert that small and medium-sized enterprises (SMEs) often lack the necessary resources and capabilities [2, 17] making it challenging for them to invest in research departments [18]. In such a context, engaging in innovation activities through collaborative partnerships established in international markets becomes essential for SMEs. The questionnaire survey used in this study asked entrepreneurs to assess the importance they attach to various factors when deciding to internationalize their firms. These factors were classified into two categories: those related to the Internal Market (such as the need to discover new markets/customers, take advantage of internal resources, reduce/diversify risks, and gain from economies of scale) and those related to the External Market (such as low competition in the target market, favorable growth prospects in a new market, access to new technologies or resources, tracking customers,

following partners, and keeping track of competitors). For the purpose of this study, the concept of innovation was operationalized through the variable “Allow access to new technologies or resources,” (from now on designated as “ANTR”) which is considered to be associated with entrepreneurs’ propensity to innovate. Moreover, Klass and Wood [19, pp. 3] offer a comprehensive definition of “propensity to innovate” as the readiness to explore, embrace, and incorporate external ideas, taking calculated risks without trepidation, even in domains beyond the organization’s immediate scope. This outlook involves valuing the capacity to think divergently and exhibiting a willingness to endorse and invest in occasionally revolutionary concepts. In turn, Wan, Ong and Lee [20] find that organizational innovation is positively correlated with autonomous structure, organizational resources, conviction in the value of innovation, risk-taking propensity, and openness to sharing ideas. Thus, we consider that it would also be interesting to analyze whether the entrepreneurs who most value internationalization as access to new technologies and resources are those who attach the greatest importance to the propensity to take risks.

**Innovation and Internationalization Entry Modes.** The readiness to assume risks may also be reflected in the internationalization strategy chosen by entrepreneurs, with exporting being the one that implies a lower commitment by the firm and, consequently, involves less risk. In most of the empirical works that study internationalization, and in particular in those addressing the relationship between internationalization and innovation, exports are considered as ‘measure’ of internationalization. This can be stated, for example, by analyzing the summary of main articles on the innovation-internationalization relationship presented by Gjergji et al. [3], who even recognize that “export activity” is the most commonly used measure of the degree of the internationalization; they also stress that the degree of internationalization is a complex measure since it depends on several factors and, in their own study, on the grounds of the limited nature of the data, they focus only on export intensity. Furthermore, Zucchella and Siano [1] emphasize that exporting is the typical way of entering foreign markets. Some authors put forward as a possible explanation for this: exporting is still often the initial phase of the internationalization process of SMEs [4, 13, 21]. Notwithstanding, some works have addressed other internationalization modes. Using data from 220 Italian SMEs, Majocchi and Zucchella [22] find that firms’ performance owes more to their capability to reach specific markets (such as North America) than to the export intensity and number of international agreements. The results also show that firms’ performance tends to be negatively affected when SMEs internationalize through non-export entry modes (namely Foreign Direct Investment (FDI)) - called the ‘liability of foreignness’ effect, which occurs at an early stage of international expansion. Nevertheless, according to the authors, this negative effect can be outweighed by the international skills that SMEs develop through intensive export activity, that is, when FDI is associated with high levels of export intensity. Moreover, the authors consider that the latter result is in line with the hypothesis that the “knowledge gap” is the biggest obstacle to the international expansion of SMEs. In fact, they explain that by exporting intensively in distant markets (both from a physical and psychological point of view) a value creation process is generated. This process results not only from the contribution of the profitability of the export activity, but also from the positive effects of the accumulated knowledge about other modes of

internationalization. Therefore, in order to shed light on this issue, we wanted to analyze whether there is a relationship between innovation, internationalization and the different internationalization strategies. Consequently, we proposed this first hypothesis.

*H1: The relationship between internationalization and innovation differ according to entry modes.*

**Innovation and Commitments Levels of Internationalization.** According to Vila and Kuster [23], a firm's internationalization process can progress to the point where it employs more complex and riskier entrance techniques. Furthermore, the authors suggest that a firm achieves its highest innovation potential when it engages in creating new products, implementing new strategies, adopting new processes, and entering new markets. However, they also point out that while many firms may be either international or innovative, only a select few achieve a high level of both internationalization and superior innovations. These exceptional firms are characterized by their willingness to invest abroad and allocate substantial resources to innovate across all four dimensions: products, strategies, processes, and markets. Analyzing a sample of 154 Spanish firms in the textile sector, the authors grouped firms according to their level of internationalization from zero to four, where higher levels of internationalization imply greater risk, control and commitment: firm does not go abroad; firm adopts indirect export; firm uses the direct export formula; firm has export agreements; and firm directly manufactures in the overseas market. Among the conclusions reached by them is the fact that "the internationalization strategy of the firm affects innovation and depends on its international commitment" [23, pp. 32]. Firms that take more risks in entering foreign markets need to continually seek new strategies and processes to gain a better understanding of their new countries. Consequently, it can be said that firms at a higher stage of internationalization tend to have a higher propensity to innovate. Nonetheless, the authors emphasize that firms with higher levels of internationalization are not necessarily the most "product" and "market" innovative businesses, as well as for the specific characteristics of the sector under consideration. The authors also conclude that both internationalization and innovation should be presented in incremental terms because when a firm chooses to venture abroad or innovate, its commitment can be gradually enhanced as more and more resources are allocated to its purpose - this is related to the presence of different levels of internationalization and dimensions of innovation. Stoian, Rialp and Dimitratos [14] consider that different modes of market entry can lead to different network strategies, having a different impact on innovative behavior and foreign market knowledge. Furthermore, in their study analyzing a sample of internationalized British SMEs, they find that there is a positive and significant relationship between international performance and the adoption of innovative behavior. They claim that this is possible because understanding how innovation in foreign markets is related to both exporting and more intensive foreign market servicing will enable SMEs to select the best internationalization strategy, ultimately resulting in improved international performance. Additionally, the authors draw the conclusion that understanding international markets has a favorable and significant impact on innovative behavior. They note in particular that improved understanding of the global business environment, efficient distribution methods, and foreign marketing

strategies enable innovation. Abubakar, Hand, Smallbone and Saridakis [24] use a sample of 1058 manufacturing SMEs from least developed Sub-Saharan countries (LDCs) in order to understand what specific modes of internationalization influence SMEs innovation. Building on the work of Zahra, Ireland, and Hitt [25], Kafourous, Buckley, Sharp, and Wang [26], as well as Rada and Božić [27], the study examines three key international entry modes that can impact firm innovation: foreign technology licensing, imports of intermediate production inputs, and exporting. The investigation further distinguishes between process and product innovation. Regarding foreign technology licensing, the results reveal a positive and statistically significant correlation with both product and process innovation. In the case of imports, the authors identify a significant influence on product innovation in certain scenarios, while finding no significant impact of imports of intermediate goods on SME process innovation. Finally, regarding exports, evidence shows that exports do not seem to significantly influence manufacturing SMEs' process and product innovation. Using information gathered from 384 US-based SMEs, Zahra, Ucbasaran, and Newey [28] investigate how SMEs' strategic decisions regarding the extent of their international activities and routes of entrance influence future product innovation for exporting and international expansion. To accomplish that, they deal with two critical aspects of SMEs' internationalization: the international market's expansion (as measured by the number of foreign countries entered) and the mode of entry into the foreign market (licensing, exporting, alliances, acquisitions, and Greenfield investments). The authors especially mention how the techniques SMEs use to reach overseas markets might influence their potential to introduce new items that are suitable to worldwide expansion and export. The analysis leads them to the conclusion that a broader international business environment is more likely to produce effective product innovation in the future, particularly when SMEs have the essential social understanding about their targeted foreign markets. Furthermore, these authors discover a link between higher control and deeper involvement modes of foreign market entry and SMEs' social knowledge that will boost future innovations. Using data from multinational enterprises (MNEs) from developed and developing countries, Álvarez and Marín [29] examine the relationship between national systems of innovation (of host countries) and the diverse ways that firms have to internationalize. Exports, Greenfield FDI and cross-border Mergers and Acquisition are the entry mode considered. These authors even note that the mode of entry can affect the extent of knowledge transfer. Golovko and Valentini [13] investigate the potential complementarity between innovation and export for SMEs' growth. By analyzing a sample of Spanish manufacturing firms, they confirm the existence of a virtuous cycle between the two strategies. Specifically, they find that the positive impact of innovation activity on the growth rate of firms tends to be higher for firms that also export, and vice versa. The findings further point out that, *ceteris paribus*, the adoption by firms of one growth strategy (such as entry into export markets) have positively affect the adoption of another (such as innovation). In Li's [30] literature review is stressed that internationalization influences innovation through imports, FDI and technology trade: while, by intensifying competition, imports, FDI and technology transfer act as an incentive for innovation, exports provide firms with learning opportunities and incentives to innovate, i.e., provide decision-makers with valuable information to help new firms acquire competitive advantage abroad. Therefore, the literature suggests that

there is a relationship between innovation and internationalization modes with greater commitment. So, we proposed the following hypothesis.

*H2: The most innovative firms are those that opt for internationalization modes with greater commitment.*

**Innovation and the Risks of Internationalization.** As previously said, firms that take greater risks in entering overseas markets must constantly seek new strategies and processes in order to obtain a deeper grasp of the new country. Therefore, firms at a higher stage of internationalization tend to have a higher propensity to innovate [23]. This risk can be addressed by the distance to the destination country. This distance may be geographic or even psychologic. Thus, in the internationalization process, the choice of destination countries may also be related to the willingness to take risks, being that more than physical distance, psychological distance is associated with greater risk. In this regard, Sass [31] refer that foreign locations are chosen primarily based on the attractiveness of their markets, with firms usually going in stages from countries with less psychic distance to those that are further away. According to Azar and Drogendijk [32] research, cultural distance is a significant cause of uncertainty for firms during the internationalization process. Therefore, knowing which are the main destination countries in the internationalization process could be an interesting clue about the risk readiness and the innovative profile of the entrepreneur. These authors emphasize the work developed by Alvarez and Robertson [33] where they divide export destinations into developing and developed markets and argue that export destination impacts firms' innovation activity. Azar and Drogendijk [32] develop a framework where it is suggested that psychic distance and innovation are directed related, and the latter is directly related to firm performance. Furthermore, they believe that innovation mediates the association between psychic distance and firm performance. In fact, Sass [31] also points out that selling to neighboring countries with low psychic distance usually does not involve specific efforts such as language knowledge, marketing and advertisement. They conclude that firms who export to developing nations are more likely to have R&D units and make investments in product design. On the other hand, firms that export to developed countries are more likely to invest in new products and production processes. Therefore, we wanted to ensure that firms at a higher stage of internationalization tend to have a higher propensity to innovate and that this risk can be addressed by the distance to the destination country, according to the following hypotheses.

*H3: The firms that opt for internationalization modes with greater commitment, are those that reveal a greater readiness to take risks.*

*H4: The firms that opt for internationalization modalities with greater commitment, are the ones that internationalize to more distant countries geographically and psychologically.*



### 3 Methodology

For this research a questionnaire was carried out to collect the data. The questionnaire was carefully designed based on a literature review and included various variables related to the internationalization of firms. It was distributed to all 8183 firms listed in the AICEP database of Portuguese internationalized firms through Google Forms tool. The data was collected over an 8-month period, starting in May 2019. To analyze the data, we employed IBM SPSS Statistics 27.0 software, applying a quantitative approach. We employed Quantitative Analysis Methodologies: Univariate and Multivariate Exploratory Factorial Analysis (EFA), Correlation analysis and the nonparametric tests Chi-square and Mann-Whitney. The study focused on the following variables:

- Internationalization drivers: “ANTR” and “Strong Entrepreneurial and risk-taking propensity” (from now on designated as “SERTP”). These variables were rated by respondents using a 5-point Likert scale from “1-not important” to “5-extremely important”.”
- Internationalization modes that indicate the strategies the firm has chosen to internationalize: “One-off export”, “Medium-long term exports”, “Export through agents”, “Technology or brand licensing”, “Franchising”, “Joint-venture”, “Subsidiary”, “Project”, “Foreign Direct Investment (FDI)” and “other”. These variables were chosen accordingly with the literature review [14, 25, 29].

### 4 Results

In an attempt to answer our Research Questions, we tested the data gathered on the questionnaire. The following table (Table 1) presents, for each of the internationalization modes, the most appropriate statistic measures to assess the importance of the factor “ANTR”, that we use to operationalize the innovation of Portuguese firms.

**Table 1.** Median and mode for “ANTR” by internationalization mode.

	One-off export	Medium-long term exports	Export through agents or dealers	Technology or brand licensing	Franchising	Joint-venture	Subsidiary	Project	Foreign Direct Investment (FDI)	Other
<b>Median</b>	3	3	3	4	4	2.5	2.5	3	3	3
<b>Mode</b>	3	3	3	4	4	2 or 3	2	2	1 or 3	4
<b>n</b>	88	126	153	12	5	6	24	47	16	33

According to the collected data, and to address our Hypothesis 1, we can highlight the Export Modalities as those most used by the respondent firms. We can also emphasize the value 4 (very important) for the Median and Mode associated to “Licensing of technology or brand” and “Franchising”. However, given the small sample size in these two modalities we cannot draw conclusions with statistical significance.

For this reason and in order to assess whether the modalities with the highest commitment attach a different degree of importance to “ANTR”, and thereby test our hypothesis



2, we decided to group the 10 modalities into two groups: group 1- exports group (which includes the first three modalities) and group 2- others (consisting of the remaining 7 modalities). Table 2 presents the achieved results.

**Table 2.** Median and mode for “ANTR” by groups.

	Group 1	Group 2
<b>Median</b>	3	3
<b>Mode</b>	3	2

**Table 3.** Contingency table and Chi-square test for “ANTR” vs groups.

Groups			ANTR				Total	
			Not important	Not very important	Important	Very important		Extremely important
1	Count		34	43	66	34	11	188
	% within Groups		18,1%	22,9%	35,1%	18,1%	5,9%	100,0%
	% within Allow access to new technologies or resources		<b>64,2%</b>	<b>56,6%</b>	73,3%	54,8%	39,3%	60,8%
2	Count		19	33	24	28	17	121
	% within Groups		15,7%	27,3%	19,8%	23,1%	14,0%	100,0%
	% within Allow access to new technologies or resources		35,8%	43,4%	26,7%	45,2%	<b>60,7%</b>	39,2%
Total	Count		53	76	90	62	28	309
	% within Groups		17,2%	24,6%	29,1%	20,1%	9,1%	100,0%
	% within Allow access to new technologies or resources		100,0%	100,0%	100,0%	100,0%	100,0%	100,0%

**Chi-Square Tests**

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	13,117 <sup>a</sup>	4	,011
Likelihood Ratio	13,239	4	,010
Linear-by-Linear Association	2,405	1	,121
N of Valid Cases	309		

a. 0 cells (0,0%) have expected count less than 5. The minimum expected count is 10,96.

The results indicate that there are almost no differences between the 2 groups. The same fact can be observed in Table 3, which crosses the two variables. On one hand,

the percentage of firms that consider “ANTR” at least important is 59.1% in group 1 and 56.9% in group 2. On the other hand, we also observe that, amongst the firms that consider “access to new technologies or resources” not at all or not very important, the highest percentages are concentrated on the firms in group 1. Among the firms that consider that factor as extremely important, 60.7% belong to group 2. Moreover, the result of the Chi-square test ( $p\text{-value} = 0.011 < 0.05$ ) allows us to conclude that there are significant differences in the degree of importance granted to “ANTR” according to the groups. Briefly, the firms in group 2 are those that attach more importance the innovation factor.

To test our hypothesis 3, we then decided to carry out statistical analyses that would allow us to assess a possible correlation between the two factors: “SERTP” and “ANTR”.

Table 4 shows that, at a significance level of 1%, there is a positive correlation between the two variables ( $r_s = 0.471$ ), in other words, the respondents who most value one variable are those who most value the other.

**Table 4.** Spearman’s correlations between “SERTP” and “ANTR”.

Correlations			Strong entrepreneurial and risk-taking propensity	Allow access to new technologies or resources
Spearman’s rho	Strong entrepreneurial and risk-taking propensity	Correlation Coefficient	1,000	<b>,471**</b>
		Sig. (2-tailed)		,000
		N	62	62
	Allow access to new technologies or resources	Correlation Coefficient	,471**	1,000
		Sig. (2-tailed)	,000	
		N	62	62

\*\* . Correlation is significant at the 0.01 level (2-tailed).

Given these results we believe it would be important to know which internationalization destinations have greater relevance regarding these internationalization factors (SERTP and ANTR), and thus test our hypothesis 4. For the Multivariate Exploratory Factorial Analysis – EFA we used the principal components method, followed by a Varimax rotation for extraction, as it produced a more interpretable solution. This analysis generated scores that condensed the information into a smaller set of factors. Table 5 presents the factorial weights of each indicator in the two retained factors ( $KMO = 0.7$ ). Factorial weights with an absolute value greater than 0.4 are highlighted in bold (Table 5).

Factor 1 (Component 1) is clearly defined by destinations that assign greater relevance to innovation and entrepreneurship factors for internationalization and more

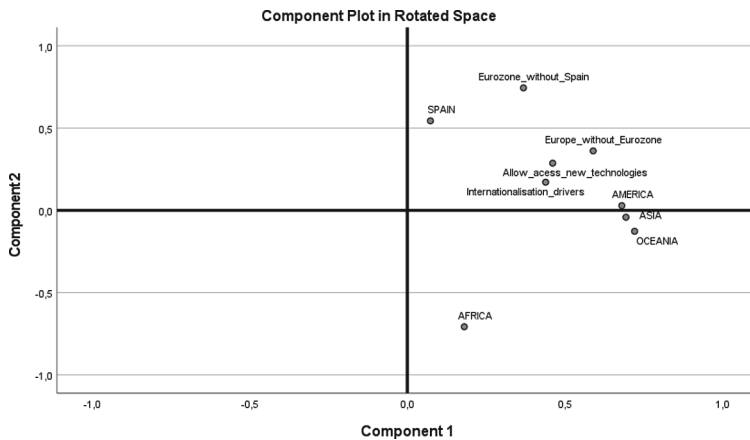
**Table 5.** Factorial weights of each variable in the 2 retained factors, after EFA.

Rotated Component Matrix <sup>a</sup>	Component	
	1	2
Spain	,073	,544
Euro zone excluding Spain	,369	<b>,744</b>
Europe excluding euro zone	<b>,590</b>	,361
Africa	,181	<b>-,707</b>
America	<b>,681</b>	,029
Asia	<b>,694</b>	-,042
Oceania	<b>,721</b>	-,127
<i>Allow access to new technologies or resources</i>	<b>,461</b>	,287
<i>Strong entrepreneurial and risk-taking propensity</i>	<b>,439</b>	,171

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 3 iterations.

**Fig. 1.** Component plot in the rotated space.

distant countries. While factor 2 (Component 2) is clearly defined by Africa and Euro Zone destinations excluding Spain.

Thus, the first factor presents higher factor weights in the internationalization destinations Europe excluding euro zone, America, Asia and Oceania and in the variables associated with innovation “ANTR” and “SERTP”. These are the destinations with greater geographical and psychological distance, i.e. those requiring less risk aversion.

The second factor have high factor weight, but of opposite direction, in the Eurozone excluding Spain and Africa, and essentially summarizes the inverse position of the firms when the choice of destinations refers to these 2 continents.

## 5 Discussion

The aim of this study was to investigate the relevance of different modalities associated with exporting for internationalized firms. Additionally, the study explored the importance that firms attach to innovation and access to new technologies or resources when choosing their internationalization mode. The analysis of the statistical results is presented in this discussion.

The data analysis revealed that for the internationalized firms in the sample, the modalities associated with exporting were particularly relevant, supporting Hypothesis 1 - The relationship between internationalization and innovation differ according to entry modes. This finding is consistent with previous literature that highlights the importance of exporting in international business [1, 24].

Regarding Hypothesis 2 - The most innovative firms are those that opt for internationalization modes with greater commitment, the results indicated that both the firms that chose export modes and those that chose internationalization modes with greater commitment placed some importance on "ANTR". However, the firms in group 2 placed greater importance on the innovation factor. These findings supported Hypothesis 2, suggesting that firms that prioritize innovation are more likely to choose more committed internationalization modes [14, 23].

The analysis also supported Hypothesis 3 - The firms that opt for internationalization modes with greater commitment, are those that reveal a greater readiness to take risks. The data showed a positive correlation between entrepreneurial propensity and innovation, indicating that those managers who had a greater readiness for risk-taking were more likely to value innovation.

Finally, Hypothesis 4 - The firms that opt for internationalization modalities with greater commitment, are the ones that internationalize to more distant countries geographically and psychologically suggested that firms that choose to internationalize in countries with more economic and technological potential are those firms for which innovation factors are more significant. The results showed that firms tended to choose Europe excluding euro zone, America, Asia, and Oceania, which are technologically more developed and have more economic potential. In contrast, firms that internationalized their operations to the Eurozone excluding Spain, chose countries with high economic and technological potential as opposed to the African continent which predominantly comprised of countries with low economic and technological power.

## 6 Conclusion

In summary, the results of this study provide valuable insights into the decision-making processes of internationalized firms. The findings support the literature on the importance of exporting in international business and the significance of innovation and access to new technologies or resources when choosing internationalization modes [1, 3, 16]. The

study also highlights the importance of entrepreneurial and risk-taking propensity in determining a firm's approach to innovation. It is important for managers to recognize the value of innovation in international business and be willing to take risks in order to achieve it. The results of the study also suggest that firms choose to internationalize in countries with greater economic and technological potential, especially when they opt for internationalization modalities with greater commitment. In such cases they tend to establish their businesses in these locations. This is consistent with the notion that firms seek out locations that offer potential for growth and development.

Notwithstanding the results presented, some limitations can be recognized to this study, although many of them constitute suggestive avenues for future work. For example, in this paper firms are not distinguished according to their size. A possible improvement of this work, could be to conduct the study by classifying the firms into SMEs and large firms, to understand how the results differ according to the size of the firms. More detailed information on these differences could be useful for the formulation of government policies towards internationalization as a way to stimulate economic development in Portugal, as well as for all managers and CEOs interested in developing their firms.

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