Lisbon School of Economics & Management
Universidade de Lisboa

MASTER

MANAGEMENT AND INDUSTRIAL STRATEGY

MASTER´S FINAL WORK

DISSERTATION

THE ROLE OF INNOVATION AND PUBLIC SUPPORT IN SMES EXPORTS: THE PORTUGUESE CASE

MANUEL MARIA BELCHIORINHO VENTURA DE MATOS VIANA

OCTOBER-2023

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SUPERVISION:

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ABSTRACT, KEYWORDS AND JEL CODES

Small and Medium Enterprises (SMEs) constitute more than 99,9% of the Portuguese business with about 1.358M SMEs in Portugal and it is undeniable their structural role in the Portuguese economy. This dissertation aims to provide new insights on the role of innovation and public support in SMEs exports. Thus, a research model was drawn and tested to explain export performance through innovation and public support. Data was collected from Portuguese industrial SMEs which are currently active and overcame the COVID-19 pandemic crisis.

This study came to the conclusion that innovation, more especially innovation in processes and products, and innovation capabilities, do not affect export performance. Nevertheless, the amount of activity years helps explain export performance. It was concluded that public support is significant for firms' involvement in international trade exhibits, demonstrating the significance of this support service for internationalization and for businesses aiming to start expanding their operations globally.

KEYWORDS: Export; Export Performance; Public Support; Internationalization; Innovation; Innovation Capabilities; Barriers to Innovation; Innovation Product; Innovation Process

JEL CODES: M10; M16; M38;

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ACKNOWLEDGMENTS

First, I wish to thank Professor Ricardo Rodrigues for his encouragement and guidance in this work. It was a pleasure to work with him.

I am also grateful to my colleagues from master for numerous discussions and workgroups together.

Finally, I would also like to thank my family, friends and girlfriend, who supported me during the most difficult times and understood all the time I put into finishing the Master Final Work. I would also like to thank my grandparents, who, although they are no longer physically present, have always been present in my journey.

1. INTRODUCTION

The business sector in Portugal is composed most entirely for SMEs, 99.9% of the business sector (Pordata, 2020). These values show the relevance and importance of SMEs in the Portuguese economy, in exports and employment. The value of Portuguese exports in 2018 exceeded 40% of the Portuguese GDP (OECD, 2019). Export is crucial for Portuguese SMEs since the Portuguese economy needs to continue to grow internationally (OECD, 2019). Not only in economic terms but also in export activities, there is an improvement in organizational capacity, which creates additional resources that improve firms' performance (Filatotchev et al., 2009). According to Floyd and McManus (2005), the importance that should be given to the application of public policies in SMEs is enormous, since they are well represented in several economies as for Portugal.

Moreover, the relevance of the study considering the Portuguese case in relation with three main concepts: public support for internationalization, innovation and exports in a post-covid era.

Based on Pastelakos et al. (2022) and Ribau, et al. (2017) investigations, this study is developed focused on main research questions:

Research Question 1: How does innovation affect the intensity of Portuguese exports?

Research Question 2: How does public support for internationalization affect the intensity of Portuguese exports?

Research Question 3: How do innovation and public support for internationalization relate to each other?

As a contribution to the literature, this study reports the Portuguese situation in a post-crisis context in which the sample of companies includes only 2022 as a reference year, that is, companies that have overcome the difficulties generated by the COVID-19 pandemic.

This master thesis is divided into five chapters. The first chapter makes a brief introduction and contextualization of the research theme, mentioning its importance and explains the objective of the research. Chapter two reviews the literature including the main theoretical terms related to the analyzed theme and the proposed model as a result

of two studies, where three hypotheses were developed. The following chapter presents the characterization of the investigation, the questionnaire applied to the companies the collected data and also a sampling profile. Furthermore, chapter four and five present the data analysis and the discussion of the results. Finally, chapter six summarizes the conclusions of this study, stating that process innovation, product innovation and innovation capabilities do not have a relation with export performance. However public support, specifically participation in international exhibitions, has a relation with export performance. Also, public support for internationalization was found to be related with some innovation barriers, namely lack of skilled labor, lack of technological capabilities in contrast with competitors and low capacity to produce.

2. LITERATURE REVIEW

2.1. Internationalization

Internationalization is an area that has been studied in the literature over the past century (Welch & Luostarinen, 1988). This concept has numerous definitions namely as the engagement of a company in the international environment (Kubíčková, et al., 2014). Welch and Luostarinen (1988, p. 36) presented internationalization as "the process of increasing involvement in international operations". Internationalization consists of firms adjusting their operations, such as strategy, structure, and resources to international scenarios (Calof and Beamish, 1995). Foreign markets represent a huge level of uncertainty (Akbar et al., 2018). The growing commitment to international markets arises as a result of the knowledge obtained from the activities development (Johanson and Vahlne, 1977). Psychological distance defined as differences in cultural and linguistic levels, also plays an important role in choosing a destination country. Since psychological proximity can reduce costs and risks, firms tend to enter psychologically close countries in the early stages, and gradually expand their operations to more distant countries (Johanson & Wiedersheim-Paul, 1975).

Internationalization can be analyzed through the Uppsala model (Johanson and Vahlne, 1977). This model characterizes internationalization as a gradual evolution through phases, in which the company learns to operate in international markets and the knowledge gained represents a fundamental part of the process (Barkema et al., 1996). The Uppsala model refers to four stages: 1) the first stage consists of sporadic exportation; 2) the second stage concerns exporting through agents; 3) the third stage is the creation of an offshore sales subsidiary; 4) the fourth stage consists of the development of production facilities in the foreign country.

According to Wach (2021), the four stages of the Uppsala Model are a result of a great involvement of resources that lead to multiple knowledge and experiences in the market. The first stage demonstrates that it is not yet feasible to acquire knowledge about foreign markets, since the company does not commit its resources to export activities. The second stage enables market involvement and allows companies to obtain regular information about foreign sales markets. The third phase allows the company to obtain market information through a controlled channel, which allows it to gain direct experience on the

resource factors established in the internationalization process. Finally, the fourth phase the production in the foreign country provides greater resources, fundamental to increase business activity.

Johanson and Vahlne (2009, p.1424) refer to the original model "an important change is the introduction of the entrepreneurial theory primer manifested in recognition of opportunities to the knowledge. These opportunities constitute knowledge, constituting its subset, alongside needs, competencies, strategies, and network relations". Nevertheless, the authors reshaped the Uppsala phase model, created in 1977, through the adaption of a network perspective, assuming that internationalization is incorporated in an active structure of interdependent parts. The updated dynamic aspects consist of the decisions about commitment in relationships, and the learning and trust-building processes. The static aspects are related to knowledge, opportunities and network positioning. These four variables influence each other since the present circumstance affects change, and vice versa Johanson and Vahlne (2009, p.1412)

As presented, internationalization corresponds to a process. In this sense, it is crucial to understand what leads companies to internationalize. The motivations for internationalization are diverse and combine internal and external factors. Simões et al. (2013) stated that what causes companies to internationalize is the aim to penetrate foreign markets, maintain or endure network relationships, and approach and connect with productive resources and talents. The purpose of increasing relevance in internationalization has four main reasons. The first reason is related to domestic market drop or foreign markets showing more dynamic. The second reason is related to previously established networks and relationships with other global companies in the home country. The third reason is related to the advantage of accessing productive resources since access to labour and raw materials can represent lower costs. The fourth reason consists of acquiring foreign strategic capabilities meaning accessing ideas, concepts, and information to incorporate into the firm to gain competitive advantage. Since strategic capabilities and assets, such as talent, are important to have a competitive advantage, the resource-based view is crucial for internationalization and consists of the focus on profitable and exclusive attributes of the company (Ruzzier et al., 2006). Therefore, the capacity of a company to use its resources to reach and maintain a

beneficial position is crucial to earning and preserving a profitable market position (Conner, 1991).

In the context of internationalization, seven groups of resources were proposed by Amit and Schoemaker (1993, p.35,36): "(1) financial (size and type of capital); (2) physical (location, plant, access to raw materials, transportation etc.); (3) human (personnel and management); (4) technological (product and process-related); (5) reputation (image, brands, loyalty, trust, goodwill); and (6) organisational resources (management systems). Proponents of the network perspective have added a seventh category, namely, the relationships of the firm.".

Several reasons can be lifted for companies to internationalize and to search foreign markets: the increase in demand leads to an increase in turnover; the increase in sales; and incentives from public entities which provide absolute advantages. Also, many existing markets are more aligned with the companies' objectives (Viana and Hortinha, 2005).

Finally, Kubíčková et al. (2014) share a consensus that the motivations reflect internal and external factors of a company. Therefore, managers have more information about the internationalization process, which is affected by the motives, and helps direct public support for internationalization.

2.2. Export

Companies can internationalize with three main approaches. The first approach is to export; the second form is to establish contractual arrangements, for example, franchising; the third approach consists of foreign direct investment, for example, by acquiring partially or fully another company (Simões et al., 2013).

Export is a form to enter a new market, and it is responsible for mass commercial movements that create global trade (Cavusgil et al., 2008). To reduce the potential reliance on local businesses, this method is appropriate for goods or services that can be readily transferred across nations. Also, the core competencies of the firm are uplifted (Cavusgil et al., 2008).

Simões et al. (2013) state that there are three methods to get access to new markets through export: directly, indirectly, and own export. Direct export allows the company to

have more knowledge of the market since it is performed using a foreign importer. With this, the company gets better management of the distribution channels and protects its brand. However, the biggest disadvantage of this type of export is that it can lead the company to more risk exposure and increase costs at an early stage. Through indirect export, a company uses a mediator in the local market, which leads to less market expertise and consequent control. Nevertheless, enables high penetration during the early stage and the company is less exposed to risk (Simões et al., 2013). Self-export consists of the exporting company being responsible for the overall export process. Meaning the distribution of the product and selling to customers is performed directly to the country of destination and without mediation.

According to Simões et al. (2013), the disadvantages of direct exporting are the difficulty for the company to penetrate at an early stage, the structural costs, and the inherent risks. However, the company gains market information, has a bigger control of channel distribution, and has partial or total control of the strategic marketing plan. With indirect exporting, companies have lower risk perception and representation costs, and easier initial penetration into the foreign market. The disadvantages consist of the lack of an entry strategy and less control over the market. Regarding self-export, it is stated that for mass consumption products it is not viable due to the importance of creating direct relationships with customers. However, it works for industrial and capital goods.

Although there are advantages and disadvantages of using export as a mode of entry for internationalization, there are also barriers to export that hinder the performance of companies. According to Mataveli et al. (2022), the reasons that stop exportation are related to human capital, cultural, administrative, financial, and product factors. Thus, the problem of human capital negatively influences sales and marketing in foreign markets and this is the cause for the lack of workers' skills and knowledge regarding the export process. Nowadays it has been noted the cultural values of various locations around the world that can imply a cultural barrier (Beugelsdijk & Mudambi, 2013; Freire & Rocha, 2003). Bureaucracies and administrative problems also represent a barrier to export (Ramaswami & Yang, 1990). Financial barriers, at first impression, lead us to the lack of financial resources to respond to companies' challenges. However, this barrier is related to the unavailability of credit to firms, as well as other credit-related issues. Therefore, businesses are confronted with challenges while creating their goods, adapting them to

meet the demands of global markets, and promoting them overseas are known as product barriers.

Despite being a concept spread worldwide export performance does not meet unanimity among several studies and authors (Zou and Stan, 1998). Export performance is defined as the performance of a firm in the export market (Shoham, 1996; Katsikeas et al., 2000). In Pastelakos et al. (2022) work, the authors state that there are two measures for export performance, namely export intensity, a more numerical measure relating to the value of exports in total percentage of turnover; and export diversity, which is related to the number of foreign markets. More detailed, Shoham (1998) points out that export performance is distinguished through three indicators, such as export growth rate, export profitability and export sales of the company. Sousa (2004) distinguishes export performance using two measures, in this case, a measure of export performance is more subjective and another more objective. The subjective measures concern mainly measures of attitude and perception. In turn, the most objective measures indicate numerical data and information about the market and profits. Giving more emphasis to the objective measure, Sousa (2004) refers in the literature that export intensity is the most used measure for expressing the importance of exports in the company's total sales (Estrin et al., 2008). Meaning the determinants of export performance are the same as those of export intensity (Sousa, 2004). To determine the concept of export performance several concepts were analysed: sales export volume; international market share; export profitability; how exporting has contributed to the sales growth of the firm; if export venture has achieved rapid growth; and if export activity has strengthened firm' strategic position (Ribau et al., 2017; Jantunen et al., 2005; Kuivalainen et al., 2007; Aulakh et al., 2000; Zou et al., 1998).

As a result of these definitions from Sousa (2004) and Pastelakos et al. (2022, p.33), export performance was measured by "the share of exports as a percentage of turnover". These indicators are important because export performance is also associated with knowledge of foreign markets, an essential resource for internationalization (Ellis et al., 2011; Ling-Yee, 2004).

As verified in this section, each author and study provide different insights and views to export performance, which enriches its study.

2.3. Innovation

The production of value through the translation of an idea into a new product, process or practice, the improvements of a current product, process or practice is how innovation is defined by Varadarajan's (2018) findings. Innovation is an essential component of an economy. It is considered a reason for economic growth, through creating jobs, reducing poverty or contributing to the gross domestic product (GDP) of developed and developing economies (Varadarajan, 2018). However, interpretation mistakes may occur in the definition of innovation, especially the technological, and R&D since it can be seen as a single concept (OECD, 2002). While technological innovation is all the revised or new processes and products, it goes through all stages, from scientific and technological, to financial and organizational (OECD, 2002). R&D can be present in several touchpoints during the innovation process. Nowadays companies face many barriers to innovation, either for financial reasons or for lack of skilled labour. In this sense, the barriers that most companies reveal when wanting to innovate as shown by several studies are related to factors such as human resources, public policies, company culture, institutional limitation, information and financial issues (Mohnen and Röller, 2005; Baldwin and Lin, 2002). Thus, financial instability happens when innovation is not viable and represents large monitoring costs (Freel, 2000), which makes it difficult for investors to make choices (Bergemann, 2005). As an argument, low engagement can be a barrier to innovation and although companies nowadays improve their organizational culture, there still are companies which refuse innovation (McAdam & McConvery, 2004). Another barrier is the lack of information (Frenkel, 2003; Hadjimanolis, 1999). Information is important in two ways. Firstly, all information on public policies, the use of technology, and the demand for markets are important for companies to increase innovation. Secondly, the creation of innovation strategies to satisfy clients helps make companies competitive which affects managers representing it as a barrier to innovate (Galia & Legros, 2004).

2.3.1. Process and Product Innovation

Afuah (1998) suggests that process innovation is the introduction of new attributes in organizational operations. Namely, it refers to the introduction of new elements, equipment, and production methods, into a company's operating system to produce

products or provide services (Utterback & Abernanthy, 1975; Zmud, 1982; Damanpour, 1991; Damanpour and Gopalakrishnan, 2001). This type of innovation has as its main objective to increase productivity. Flexible production or cost decline is an integral part of the innovation process. Thereby, performance progress can result from cost and labour reductions (Vivarelli, 1995; Vivarelli and Pianta, 2003). Also, can lead to increases in quality, flexibility and ability and simplify production processes (Edquist, 2001; Simonetti et al., 1995). From another perspective, according to the OECD (2005) definition, product innovations are goods or services aimed at satisfying customer needs and increasing sales, which are usually improved products. Not so different definitions in literature conclude that product innovation can be seen as the introduction of new products or services that meet the needs of the market, thus expanding the company's field of activity. (Utterback & Abernanthy, 1975; Zmud, 1982; Damanpour, 1991; Damanpour & Gopalakrishnan, 2001).

2.3.2. Innovation Capabilities

Innovation capability is defined by Lawson and Samson (2001, p.384) as "the ability to continuously transform knowledge and ideas into new products, processes, and systems for the benefit of the firm and its stakeholders." As a result, innovation can be the key for small enterprises to compete with bigger and richer corporations. Manager's and owner's view is also an important aspect and leads us to understand how businesses act (Winston and Heiko, 1990) which consistently uses instinctive procedures, leading to the adaptability of the company to focus on the business owner (Gélinas and Bigras, 2004). Companies' agility has increased as a result of their adaptability through using their dynamic capabilities (Seetharaman, 2020). Finally, the ability to create distinctive and practical products or information may be regarded as an innovation capability (Zheng, Liu, and George, 2010). Teece et al. (1997) argued that a firm's distinguishable resources and skills are its most important assets for establishing and maintaining a competitive advantage. For this reason, the authors developed the dynamic capabilities perspective as a complement to the resource-based view. Additionally, they provided evidence that dynamic capabilities aid businesses in boosting competitiveness and enhancing business performance (Teece, 2009).

The study from Guan and Ma (2003) analyzes the concept of innovation capability through seven dimensions: (1) Learning capability, the ability to discover new types of knowledge is a crucial component of a successful business; (2) R&D capability, help companies to have better levels of technology with the purpose of success growing; (3) Manufacturing capability refers to the ability to create products that satisfy market needs, following the results of R&D; (4) Marketing capability as objective selling products through advertising; (5) Organisational capability consists on coordinating an organizational structure in which people work towards common goals; (6) Resources exploiting capability, as an objective to expand resources; (7) Strategic capability, several strategies that may be employed when the environment undergoes highly competitive changes.

2.4. Public Support to Internationalization

According to the literature, a firm involvement in a public program can affect the firm's behaviour, due to the contacts and interaction with the public agencies providing knowledge about strategies, processes, administrative practices, and eventually an adjustment of internal management processes, which creates a positive impact on company's performance (Bannò et al.,2014). Also, the importance of the role of public support for internationalization, since it enables firms to acquire missing resources (Leonidou, Palihawadana, and Theodosiou, 2011). Although export support is essential in the early stages of the internationalization process (Shamsuddoha et al., 2009), in the advanced stages of the internationalization process, SMEs continue to rely on government help to overcome the obstacles that arise in their day-to-day lives. Export activities will require the support of other initiatives, avoiding the exclusion of operations in foreign markets (Ayob and Freixanet, 2014). To confirm the previous argument, Hashim (2015) indicates that not only can government support measures assist companies in a given market, but can also increase and/or complement their available resources (Wilkinson and Brouthers, 2006).

The Uppsala model, as mentioned previously, argues that knowledge of foreign markets drives operations abroad (Johanson and Vahlne, 1977) as they might facilitate the accumulation of expertise through experience in foreign marketplaces. Government actions, particularly those involving the provision of financial assistance, help reduce the

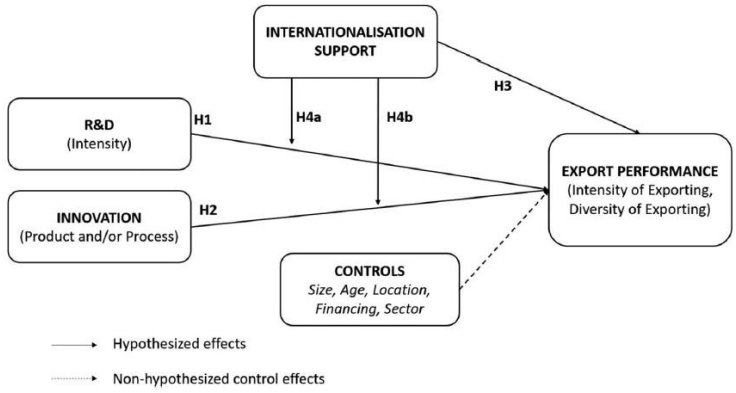
risk inherent in experimentation, and for that reason increase commitment (Johanson and Vahlne, 1977). There is another type of support service in which companies can interact with local entrepreneurs and representatives of government agencies, giving information about the features they expect to see in the product. Meaning participation in fairs abroad and trade missions (Durmuşoğlu et al., 2012). Even companies that have no export experience, for example, have the opportunity to be advised to enter a specific market (Wilkinson & Brouthers, 2000; Spence, 2003). In this way, companies acquire knowledge by experimentation and knowledge about the culture of the markets they want to enter (Young, 1995).

2.5. Conceptual Model and Research Hypotheses

There are still gaps in the literature regarding export performance and how it influences innovation and public support for internationalization, especially regarding a period in which the world faced a public health crisis and had to adapt and reinvent itself to the context. This adaptation was possible mainly through innovation, and the way governments have supported companies to expand their businesses during this period.

Pastelakos et al. (2022) studied the role of innovation and internationalization support in SME export performance through the following research model (figure 1). The goal was to study the effect of innovation, Research and Development (R&D), and support for internationalization on export performance. Pastelakos et al. (2022) studied two models: export intensity related to the share of exports; and export diversity, the number of markets reached. These two models included: R&D intensity, meaning the investments on R&D as a percentage of turnover and innovation; and the introduction of process and product innovation in the company. To determine how frequently businesses use this help, the five most pertinent support services, namely the training in international trade, suggestions for international growth, information about markets and legislation, support for attending international trade shows, and assistance/advice for prospecting for new clients or markets, were selected and used to quantify support for internationalization. The control variables (size, age, location, sector and financing) were introduced into the models so the data was more accurate to the reality of the country under study, which was Greece.

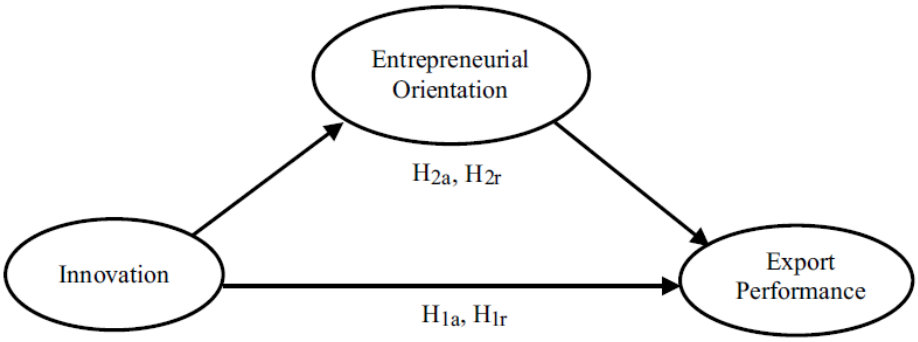
Figure 1 - Research model presented by Pastelakos et al. (2022)



Source: Pastelakos et al. (2022)

To study the relationship and influence of innovation capabilities on export performance, Ribau et al. (2017) used an entrepreneurial orientation, which refers to the attitudes of entrepreneurs in foreign markets. This research model (figure 2) analyzed companies in the plastics industry.

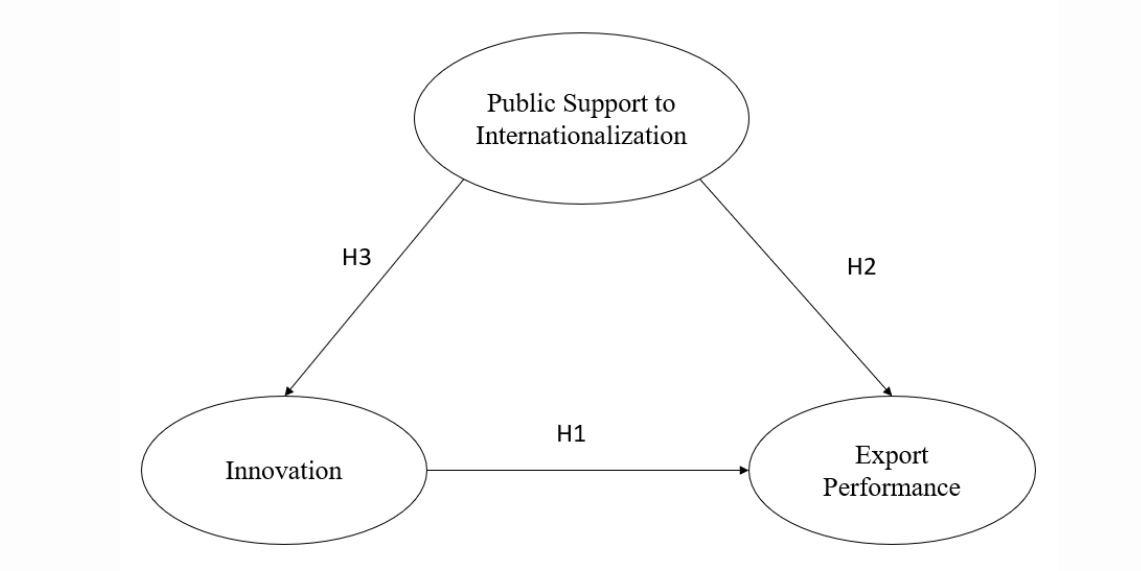
Figure 2 - Research model presented by Ribau et al. (2017)



Source: Ribau et al. (2017)

For this study, the proposed framework (figure 3) was adapted from the previously explained models (Ribau et al., 2017; Pastelakos et al., 2022). Instead of the impact of Entrepreneurial Orientation on export performance, Public Support for Internationalization was included to analyse the importance of this variable in the Portuguese market. Regarding innovation, four measures were used, namely process innovation, product innovation, innovation capabilities, and barriers to innovation.

Figure 3 - Proposed Framework



Source: Author's own creation

From the proposed framework, three hypotheses were developed that will be presented further on.

Product and process innovation is connected with knowledge-creation activities (Pastelakos et al., 2022). They are a part of the predominant sources of firms' sustainable competitive advantage because of an increase in global competition, a brief product life cycle, and accelerated technological development (Cho and Pucik 2005).

The main objective of process innovation is to decrease costs and provide new characteristics in organizational operations. Such as new equipment and production methods leading to a new operating system to produce products or services (Utterback & Abernanthy, 1975; Zmud, 1982; Damanpour, 1991; Damanpour and Gopalakrishnan, 2001).

Product innovation occurs when companies invest in new products or services to fit market needs, which can lead to export. (Utterback & Abernanthy, 1975; Zmud, 1982; Damanpour, 1991; Damanpour & Gopalakrishnan, 2001).

The following hypotheses aim to study the influence of the innovation process and innovation product on export performance separately following the study of Pastelakos et al. (2022).

H1a: Innovation (process) positively influences Export Performance.

H1b: Innovation (product) positively influences Export Performance.

Innovation capability is related to the capacity to develop distinctive and practical products or information (Zheng, Liu, and George, 2010), which is crucial to maintaining competitive advantage (Teece et al., 1997). Previous studies report that innovation capabilities improve due to export growth (Guan and Ma, 2003). Therefore, the following hypothesis intends to prove the positive influence of innovation capabilities on export performance.

H1c: Innovation (capabilities) positively influences Export Performance.

Public Support facilitates the acquisition of resources that firms would not be able to purchase which influences internationalization (Leonidou, Palihawadana, and Theodosiou, 2011). One of the reasons why companies succeed in international activities is related to the execution of government assistance programs (Cavusgil and Michael, 1990; Czinkota and Ronkainen, 2007; Seringhaus and Rosson, 1990). Recent literature even highlights that export performance is partially related to the public support provided to firms to enhance their internationalization (Catanzaro and Teyssier, 2021). Therefore, the following hypothesis aims to study the positive effect of public support for internationalization on export performance.

H2: Public Support for Internationalization positively influences Export Performance

Is noted in the literature that the export performance of SMEs is influenced positively by firm-related innovation capabilities (Guan and Ma, 2003; García-Morales et al., 2006; Oura et al., 2016). Previous studies also report that innovation capabilities have improved due the export growth (Guan and Ma, 2003)).

Dynamic markets impact how companies face innovation. There are several barriers namely lack of financial support, poor human resources, company culture that does not fit foreign markets and lack of public policies (Mohen and Röller, 2005; Baldwin and Lin, 2002). Public support for internationalization shows an increase in the growth of SMEs and innovation (Boermans & Roelfsema, 2016). Moreover, public agencies can help SMEs since they create a positive impact on innovation (Love and Roper, 2015)

The following hypothesis aims to study the positive impact of public support for internationalization on innovation barriers.

H3: Public Support for Internationalization positively influences Innovation (barriers)

3. METHODOLOGY

3.1. Characterization of the investigation

The objective of the study is to understand if public support for internationalization has a positive influence on export performance and innovation and if export performance has a positive influence on innovation as well as their roles.

The hypothetico-deductive method was the selected because were created a network of hypotheses that are interconnected in a deductive manner, leading to conclusions about empirical facts. It involves drawing deductions from unknown meanings of hypotheses, making it a powerful tool for analytical thinking and theoretical knowledge. (Maxmasaitovich, 2023).

European Commission (2003) stated that businesses employing between 10 and 250 people and having a total annual balance sheet of no more than €43 million are starting to be regarded as small and medium-sized enterprises (SMEs). Given their significance in the generation of jobs and local and regional development, small and medium-sized firms (SMEs) often account for a sizable portion of business in numerous countries. (Pacheco, 2019). Therefore, SMEs because of their relevant representation of this type of companies, have great growth opportunities, both in terms of their efficiency as well as the economic growth they provide (Dannreuther, 2007).

Regarding the Portuguese market, it was noticed a lack of information was especially related to the post-crisis context. When analysing the Portuguese market, SMEs represent 99.9% of the overall business community in Portugal (Pordata, 2021). To choose the SME scope for this study, it was analysed which sector has the highest export volume in the Portuguese market. The industry sector is responsible for 56% of Portuguese exportations as shown in Figure 2 (Informa D&B, 2021). Several studies also analyzed the industry sector regarding their export performance (Ribau et al., 2017; Zucchella & Siano, 2014).

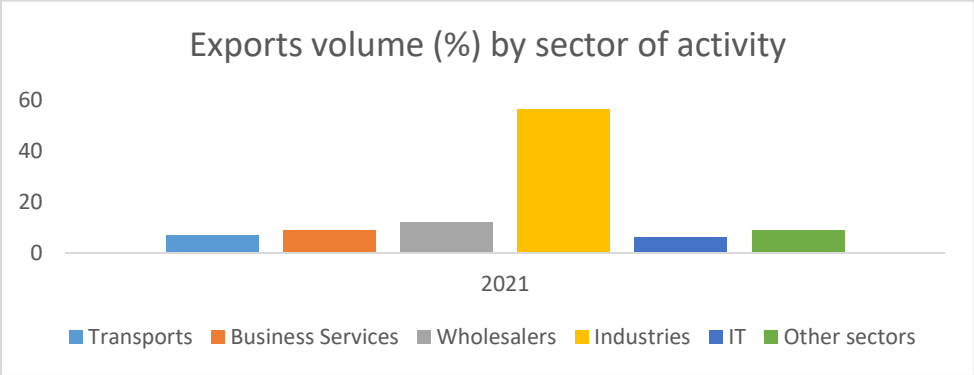
Table I - Companies Dimension in the Portuguese market

Years	**Companies dimensions**	
	SME	**Big**
2004	99,90%	0,1%
2005	99,90%	0,1%
2006	99,90%	0,1%

2007	99,90%	0,1%
2008	99,90%	0,1%
2009	99,90%	0,1%
2010	99,90%	0,1%
2011	99,90%	0,1%
2012	99,90%	0,1%
2013	99,90%	0,1%
2014	99,90%	0,1%
2015	99,90%	0,1%
2016	99,90%	0,1%
2017	99,90%	0,1%
2018	99,90%	0,1%
2019	99,90%	0,1%
2020	99,90%	0,1%
2021	99,90%	0,1%

Source: PORDATA, 2021

Figure 4 - Export volume (%) by sector of activity



Source: Informa D&B, 2021

3.2. Questionnaire

According to Saunders et al. (2019), the questionnaire survey is the best approach for this research, which benefits from being more widely available and gathering more data. Consequently, the current study is a descriptive analysis since its goal is to determine the level of correlation between various variables (Saunders et al., 2019). To carry out the questionnaire and take into account the lack of information regarding the pandemic context and since one of the aims of the study is to understand the behaviour of companies that survived COVID-19, 2022 was the chosen reference year. The questionnaire was

conducted in Portuguese since the study is focused on Portuguese SMEs. For the questionnaire development, the translation from English to Portuguese considered the different linguistic interpretations from research contexts (Saunders et al., 2019).

Before sending the online questionnaire, a pre-test was performed. This test was conducted using an online format, through LinkedIn, involving fourteen people associated with internationalization, strategic consulting and foreign investment areas. It aimed to assess the questions' clarity.

The questionnaire survey was organized into five sections.

Section I: Company Identification

Four required questions were conducted to determine the company's characterization. It aimed to understand if it was a small and medium-sized enterprise (SME) and whether it engaged in international business. The definition of SMEs translated into the questionnaire is based on two ranges, the first between 10 and 49 employees, as small enterprises, and the second range being between 50 and 250 employees, as medium-sized enterprises (Commission of the European Communities, 2003). Also, it was asked about companies' business volume, companies' starting year of activity, and companies' starting year of international activity. These questions were performed to filter the sample.

Section II: Export

A filter question was placed to fulfil the last prerequisite, if the company had exported in the last 3 years (Pastelakos et al., 2022). In case the respondent answered "No", the questionnaire directed to the last section "COVID-19". If the respondent answered "Yes" it was questioned about turnover, export sales volume, the importance of exports, and, consequently, its comparison between profits in Portugal and international profits (Brouthers & Nakos, 2005). To better understand the importance of export, it was asked to the managers if factors like competitive price or quality control were successful for their companies (Katsikeas et al., 1997). Also, exporting contributed to increased sales growth and strengthened strategic position (Ribau et al., 2017).

Section III: Innovation

To understand the importance of innovation in companies, it was asked how often the company has invested in R&D and innovation in the last three years (Pastelakos et al., 2022; Catanzaro et al., 2019). Innovation was split into two Types of Innovation (TI): Process Innovation (TI1) and Product Innovation (TI2). It was asked in the last three years

how often companies used these TI, using a 5-point Likert-type scale from "1-Never to 5-Always" (Pastelakos et al., 2022). Innovation Capabilities (IC) were measured through capabilities from innovation, manufacturing, R&D, resource exploitation and strategy, using a 5-point Likert-type scale from "1-Nothing Important to 5- Extremely Important" (Ribau et al., 2017). To understand Innovation Barriers (IB) it was asked which ones companies faced the most: the lack of financial resources; the lack of information; the lack of public support; the lack of specialised work; the low capacity to produce; and the lack of technological capabilities compared to competitors (Madrid-Guijarro et al., 2009).

Finally, the importance of innovation in topics such as competitive advantage, public support and companies' financial results was questioned through a 5-point Likert-type from "1-Nothing Important to 5- Extremely Important" (Bigliardi, 2013).

Section IV: Internationalization

In this section to filter the existing export types referred from Simões et al. (2013), focusing on export as an internationalization mode, it was asked which export types companies used, and if it was possible to use more than one type. Also, it was asked which Export Barriers (EB) companies face (Mataveli et al., 2022), namely language/cultural differences; difficulties in accessing credit lines; insufficient financial resources; selection of a distributor for companies' product; lack of knowledge of the steps involved in exporting; lack of skilled labour; lack of technological capabilities compared to competitors; documentation and bureaucracy in the country of destination; customs differences in destination countries; problems adapting their products to foreign markets; lack of production capacity. In addition, it was asked how often companies received Support Services to Internationalization (SSI) and measured through a 5-point Likert-type from "1-Never to 5-Always" (Catanzaro et al., 2019).

Section V: COVID-19

The section dedicated to COVID-19 aims to understand the agility and capacity of companies regarding the pandemic crisis, and whether companies show improvement in innovation, internationalization and export (Amit et al., 1993; Pastelakos et al., 2022). It was measured through a 5-point Likert-type from "1-Totally Disagree to 5-Totally Agree"

Section VI: Final Considerations

For the final section, companies were asked to elaborate if public support and innovation support were essential to the success of SMEs in the international market. This was an open question, so companies provided their insights. This question was not mandatory to finish the questionnaire.

3.3. Data collection

The target population is small and medium-sized Portuguese industrial enterprises (SMEs) that export their products and/or services. The respondents were CEOs, financial directors, export/internationalization and sales/commercial directors. Through the ORBIS database, small and medium-sized Portuguese companies in the manufacturing sector (metals, plastics and glass industries) were selected through two criteria: number of employees (between 10 and 250) and turnover (between 50M€ and 250M€). The questionnaire was sent via email to 4841 companies. The emails lead to an online survey which respondents could fill with companies' inputs and information.

3.4. Sampling profile

Regarding the sample description, 155 valid responses were collected, and 34,4% represent businesses with between 10 and 49 employees and 65,6% between 50 and 250 employees. These companies started their activity, on average, 30 years ago, and started their international activity, on average, 21 years ago. This means that companies, after starting their activity, waited nine years to operate in foreign markets. Concerning turnover and export sales respectively, the average is 18,6M€ and 8,20M€ from last year.

4. DATA ANALYSIS

The information obtained from the questionnaire is presented and examined in this chapter. A descriptive statistical analysis was conducted for all variables that characterise the proposed model. Furthermore, it will present a concise description of the sample and measures, mean and standard deviation applied. Export Performance was measured by calculating the value of exports divided by total turnover.

4.1. Assessment of measurement model

To test the proposed conceptual model, a Hierarchical Multiple Regression and a Multiple Linear Regression were performed, using IBM SPSS, version 28. According to Ross and Willson (2018), a multiple regression analysis is a type of test that looks at how much variance in a dependent variable is explained by various predictor factors. On the other hand, a hierarchical multiple regression analysis adds a new element to the independent variables which are filled in blocks.

4.2. Results

Through a hierarchical regression three models were divided by three hypotheses. The Model 1 predicted Export Performance from Product Innovation, Process Innovation, and Innovation Capabilities. The Model 2 predicted Export Performance from Public Support. Finally, the Model 3 predicted Innovation Barriers from Public Support to Internationalization. To verify if the models were significant, it has performed a model summary through R, R-Square and ANOVA, which will be presented in appendix A. Furthermore, the variables were analyzed through Coefficient B and p-value. P-value explains the significance of the variable, if $p<0,05$ the variable is significant and explains the model.

To assess the first model, innovation was characterised using four sub-categories: process innovation (PCI), product innovation (PRI) and innovation capabilities (IC), the variables were measured to understand the effect on export performance (EP).

Process innovation (PCI) was analysed with export performance (EP) as a dependent variable (Hypothesis 1a). Firm Age and International Firm Age are the control variables

for this model. To understand if the model was significant it was conducted a model summary (R) and ANOVA analysis (in appendix A, Table IX). The assumptions are correct. Furthermore, the coefficient analysis performed revealed that process innovation was found not statistically significant (p=0,168). It was also verified that the variables with a positive effect and significance on export performance are total quality management (IC3) (p=0,049) and low capacity to produce (IB4) (p=0,011).

Table II - Hypothesis 1a analysis

Hypothesis 1a	Unstandardized coefficients		Standardized Coefficients	T	Sig
	B	Std Error	Beta		
Export Performance	20,623	5,863		3,517	0,001
Firm Age	-0,423	0,109	-0,367	-3,881	0,000
International Firm Age	0,507	0,158	0,308	3,216	0,002
IC3	4,139	2,081	0,221	1,989	0,049
PCI	3,029	2,187	0,154	1,385	0,168
IB4	-15,923	6,151	-0,192	-2,589	0,011

Source: Author own creation based SPSS output

The first model is also related with Product Innovation (PI2) and export performance (EP) being Firm Age and International Firm Age control variables. To examine the model significance was conducted a model summary (R) and ANOVA analysis (in appendix A, Table X), which revealed the assumptions are correct. The variables with a positive effect and significance are quality management (IC3) (p=0,041) and low capacity to produce (IB4) (p=0,016). Product innovation (PDI) it was found not significant (p=0,058)

Table III- Hypothesis 1b analysis

Hypothesis 1b	Unstandardized coefficients		Standardized Coefficients	T	Sig
	B	Std Error	Beta		
Export Performanc	19,528	5,880		3,217	0,001
Firm Age (in years)	-0,450	0,109	-0,390	-4,130	0,000

International Firm Age (in years)	0,545	0,158	0,331	3,454	0,001
PDI	3,663	1,918	0,189	1,910	0,058
IC3	3,856	1,872	0,206	2,060	0,041
IB4	-14,590	5,986	-0,176	-2,437	0,016

Source: Author own creation based SPSS output

The first model relates Innovation Capabilities (IC) with export performance (EP). Firm Size, Firm Age and International Firm Age are the control variables. To examine the model significance was conducted a model summary (R) and ANOVA analysis (in appendix A, Table XI), which revealed the assumptions are correct. All the innovation capabilities variables were found non significant and have a negative effect on export performance, since p-value>0,05. Also, Firm Size is not significant (p=0,479).

Table IV - Hypothesis 1c analysis

Hypothesis 1c	Unstandardized coefficients		Standardized Coefficients	T	Sig
	B	Std Error	Beta		
Export Performance	27,386	8,708		3,145	0,002
Firm Size	-3,261	4,592	-0,060	-0,710	0,479
Firm Age	-0,364	0,124	-0,315	-2,930	0,004
International Firm Age	0,517	0,172	0,314	3,016	0,003
IC1	5,048	3,315	0,255	1,523	0,130
IC2	-2,262	3,308	-0,118	-0,684	0,495
IC3	5,489	3,018	0,293	1,818	0,071
IC4	-3,244	2,361	-0,184	-1,374	0,172
IC5	0,229	3,413	0,012	0,067	0,947
IC6	3,060	4,312	-0,158	-0,709	0,479
IC7	-3,292	3,834	-0,171	-0,859	0,392

IC8	4,429	3,242	0,246	1,366	0,174

Source: Author own creation based SPSS output

The second model relates Public Support to Internationalization (PSI) and Export Performance (EP) and uses Firm Size, Firm Age and International Firm Age as control variables. To examine the model significance was conducted a model summary (R) and ANOVA analysis (in appendix A, Table XII), which revealed the assumptions are correct. Furthermore, the variables which have positive effect and significance was the participation in international trade expositions (PSI4) (p=0,011). All other variables were considered non significant due to p-value>0,05.

Table V - Hypothesis 2 analysis

Hypothesis 2	Unstandardized coefficients		Standardized Coefficients	T	Sig
	B	Std Error	Beta		
Export Performance	39,628	7,997		4,955	0,000
Firm Age	-0,395	0,130	-0,342	-3,029	0,003
Firm Size	-5,901	4,369	-0,109	-1,351	0,179
International Firm Age	0,655	0,171	0,398	3,833	0,000
PSI1	-1,671	3,194	-0,076	-0,523	0,602
PSI2	2,002	3,231	0,084	0,620	0,536
PSI3	-2,899	3,631	-0,130	-0,789	0,426
PSI4	7,975	3,102	0,390	2,571	0,011
PSI5	-1,141	3,019	-0,056	-0,378	0,706

Source: Author own creation based SPSS output

The third model analyzes how Public Support to Internationalization (PSI) impacts Innovation Barriers (IB). This model was conducted for each innovation barrier as a dependent variable, to better understand if public support to internationalization is significant.

First analysis was conducted to understand if public support to internationalization has an impact on insufficient financial resources (IB1) using Firm Size, Firm Age and International Firm Age as control variables. To understand if the model was significant it conducted a model summary (R) and ANOVA analysis (in appendix A, Table XIII) and it revealed that the assumptions are not significant for this model since p-value>0,005.

Second analysis was performed to understand if public support to internationalization has an impact in lack of specialized work (IB2) using Firm Size, Firm Age and International Firm Age as control variables. To examine the model significance was conducted a model summary (R) and ANOVA analysis (in appendix A, Table XV), which revealed the assumptions are correct. The output showed that the only variable with significance and positive effect in lack of specific work (IB2) is advice on the exploration of new markets/customers, i.e prospecting (PSI5) (p=0,000).

Table VI - Hypothesis 3 analysis for lack of specialized work

Hypothesis 3	Unstandardized coefficients		Standardized Coefficients	T	Sig
	B	Std Error	Beta		
Lack of specialized work	0,194	0,144		1,349	0,179
Firm Size	0,134	0,077	0,135	1,732	0,085
Firm Age	-0,006	0,002	-0,295	-2,800	0,006
International Firm Age	0,006	0,003	0,187	1,828	0,070
PSI5	0,128	0,030	0,344	4,338	0,001

Source: Author own creation based SPSS output

Third analysis used as control variables Firm Size and Firm Age and aim to understand if public support to internationalization has an impact on the lack of technological capabilities in contrast with competitors (IB3). To examine the model significance was conducted a model summary (R) and ANOVA analysis (in appendix A, Table XVI), which revealed the assumptions are correct. The output showed that IB3 is not explained by the advice on the exploration of new markets/customers (PSI5) (p=0,155, non-significant).

Table VII - Hypothesis 3 analysis for advice on the exploration of new markets/customers

Hypothesis 3	Unstandardized coefficients		Standardized Coefficients	T	Sig
	B	Std Error	Beta		
Lack of technological capabilities in contrast with competitors	-0,259	0,104		-2,490	0,014
Firm Size	0,144	0,056	0,201	2,554	0,012
Firm Age	0,003	0,001	0,186	2,320	0,022
PSI5	0,030	0,021	0,112	1,429	0,155

Source: Author own creation based SPSS output

Fourth analysis was conducted to understand if public support to internationalization has an impact on low capacity to produce (IB4) using Firm Size as control variables. To examine the model significance was conducted a model summary (R) and ANOVA analysis (in appendix A, Table XVII). The assumptions are correct. The output showed that IB4 is explained by market information and regulatory frameworks (PSI3) (p=0,040) and the advice on the exploration of new markets/customers (PSI5) (p=0,009).

Table VIII - Hypothesis 3 analysis for low capacity to produce

Hypothesis 3	Unstandardized coefficients		Standardized Coefficients	T	Sig
	B	Std Error	Beta		
Low capacity to produce	-0,105	0,094		-1,120	0,264
Firm Size	0,163	0,052	0,249	3,139	0,002
PSI3	0,071	0,034	0,265	2,071	0,040
PSI5	-0,084	0,032	-0,342	-2,644	0,009

Source: Author own creation based SPSS output

Fifth analysis was performed to understand if public support to internationalization has an impact on lack of information (IB5) using Firm Size, Firm Age and International Firm Age as control variables. To understand if the model was significant it conducted a model

summary (R) and ANOVA analysis (in appendix A, Table XVIII) and it revealed that the assumptions are not significant for this model since p-value>0,005.

Finally, the sixth analysis tested public support to internationalization impact on Lack of Public Support (IB6) and used Firm Size as control variables. To understand if the model was significant, a model summary (R) and ANOVA analysis was conducted (in appendix A, Table XX) and revealed that the assumptions are not significant for this model since p-value>0,005.

5. DISCUSSION

For this section the effects obtained through the data analysis will be discussed. The hypothesis one provided empirical evidence of the negative effect of firm age for both in process innovation and product innovation. It was also observed that low production capacity had a negative effect on export performance, meaning if a company had low capacity to produce their products/service it would export less and in smaller quantities. According to Balasubramanian and Lee (2008), firm age is negatively related to technical quality, which influences production methods in a product and/or service and will impact production capacity. However, regarding product innovation it was seen to have a positive effect on low production capacity and International Firm Age for export performance. Concerning innovation capabilities, Firm Age has a negative effect on export performance. However, International Firm Age and Lack of technological capabilities in contrast with competitors have a positive effect on export performance.

The hypothesis two showed that Firm Age has a negative effect on export performance, although evidence shows that due to greater financial restrictions, firm age is important for the favourable effects of public support (Dvouletý, Srhoj, & Pantea, 2021). Nevertheless, International Firm Age and participation in international trade exhibitions has a positive effect on export performance. Providing SMEs with tools to internationalize, help them with preparation of exports and provide financial and non-financial support (Ayob & Freixanet, 2014).

Regarding the lack of skilled labor, Firm Age has a negative effect on export performance, while assistance/advice for exploring new markets/customers, prospecting

positively affects export performance. The lack of technological capabilities in contrast with competitors and low capacity to produce showed that Firm Age has a positive effect on export performance, indicating that despite the company's years of activity, the adoption of innovation has been a recurring practice and allows firms to gain a competitive advantage (Bigliardi, 2013). Also, Firm Size has a positive effect on export performance, the number of employees from the companies participating in this study is high which did not affect their technological capabilities in relation to their competitors. Regarding low capacity to produce, information on markets and regulations has a positive effect on export performance since companies are able to understand several markets and choose the one to produce where labor is cheaper (Simões et al., 2013).

6. CONCLUSION

The goal of this research is to take under study and answer the research questions: How does innovation affect the intensity of Portuguese exports? How does public support affect the intensity of Portuguese exports? How do innovation and public support for internationalization relate to each other?

Through this study it was concluded that innovation, specifically process and product innovation, and innovation capabilities have no effect on export performance. This can be explained by the number of years of activity that the companies which participate in the study reveal, and also management teams which are not willing to invest in product and process innovation as a competitive advantage. Nevertheless, public support has a positive effect on export performance. The results indicate that public support is significant for the participation of companies in international trade exhibitions, which shows that this support service for internationalization is important for companies to start expanding internationally.

However, observing innovation barriers, public support for internationalization reveals a positive effect, especially regarding skilled labour, the productive capacity of small and medium-sized enterprises and getting public support.

Governments which promote internationalization must focus their efforts on companies that will use that assistance to increase export performance. Their assistance is crucial for overcoming innovation obstacles. This is especially important in a post-crisis situation, since there are few resources available for support, and there is a great need to boost competitiveness to sustain growth. Firms that are unable to adapt to innovation, benefit more from support for internationalization.

Businesses who attend trade exhibitions supported by state governments are more likely to have successful export performance results. The potential for trade exhibitions to boost export sales is proved, it can also have an impact on hiring specialized workers and increase know-how.

The connection between total quality management, which is related with innovation process and operation methods, has a substantial correlation with export performance and is an example of business success in management.

Portuguese industrial SMEs under study highlighted quality control and competitive price as extremely important when choosing a destination market. Also when exporting, companies fully agree that exportation improves sales growth, more than strategic position. Managers give importance to the barriers to innovate. It was most evidenced by the lack of specialized labor, the lack of financial resources and public support. The human and financial resources in a firm are fundamental to increase business volume. Similar results had the barriers to export more evident, since companies also complain of a lack of skilled labor to start exporting. Bureaucracies and necessary documentation and the difficulty of obtaining a distributor for the product are also relevant when exporting. Regarding internationalization support services, many companies use the services on an occasional basis, however some companies use it regularly. The pandemic did not change the levels of innovation, internationalization, and exports. Nevertheless, public support is important in the success of SMEs in international markets. This study is important in a period in which a crisis such as the COVID-19 pandemic has been overcome. Business world is still recovering from this crisis, which left a negative impact.

6.1. Theoretical Contribution

From a theoretical perspective, this study gave an important contribution to the relationship between production innovation and export performance since product innovation positively influences export performance thanks to low production capacity and International Firm Age. Regarding innovation capabilities, Firm Age has a negative impact on export performance, meaning the older companies are the more difficult it is to achieve good export performance results. However, due to International Firm Age firms overcome their lack of technological capabilities and gain years of experience in international markets which impacts export performance. At lack of skilled labor variable, Firm Age has a negative effect. However, low production capacity has a negative effect on advice for exploring new markets/customers, prospecting.

6.2. Managerial Implications

The implications for management found in this study state that companies do not need innovation to be successful. However, the longer they have been in business and their capacity to gain good advice on entering international markets has a bigger impact instead of innovation, which is not a key factor for success. Companies should focus on gaining more and better training in international trade, to better understand which international strategy is more suited to leverage performance in international markets.

6.3. Limitations & Further Research

From a theoretical perspective, this study gives an important contribution to export performance. Although export performance has been widely studied, there is still a lack of theoretical studies focused on the post-crisis context of COVID-19 in Portugal. Throughout the investigation, several constraints were detected, particularly regarding data gathering and examination. The first restriction stems from the ease of using a non-probabilistic sample, as the findings are only applicable to the sample under investigation.

The amount of replies (155 respondents) represents a limitation in the scope under study. For this study, only companies that are still working after COVID-19 and that overcame the financial difficulties are integrated in the study.

The length of time the study was carried out was short. Although, the survey

was distributed during two months, future research must consider a larger period of time to gather answers and analyse the data.

The study was focused on Portuguese companies. It can be interesting to understand how other country companies behave regarding innovation, export performance and public support for internationalization.

COVID-19 is no longer a pandemic. Therefore, further research can be conducted in different countries regarding the impact of innovation and public support on export performance. This model can be also applied to micro companies and large companies. Public Support to Internationalization can be investigated to what extent it was responsible for increasing companies' size and export performance.

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APPENDIX

APPENDIX A - DATA ANALYSIS

Table IX - Model summary & ANOVA - Hypothesis 1a

Model	R	R-square	Adjusted R Square	Std. Error of the Estimate
1a	0,488	0,238	0,213	23,12340%

ANOVA	Sum of Squares	df	Mean Square	F	Sig
Regresion	24918,830	5	4983,766	9,321	0,001
Residual	79669,083	149	534,692		
Total	104587,913	154			

Source: Author own creation based SPSS output

Table X - Model summary & ANOVA - Hypothesis 1b

Model	R	R-square	Adjusted R Square	Std. Error of the Estimate
1b	0,497	0,247	0,222	22,99202%

ANOVA	Sum of Squares	df	Mean Square	F	Sig
Regresion	25821,618	5	5164,324	9,769	0,001
Residual	78766,295	149	528,633		
Total	104587,913	154			

Source: Author own creation based SPSS output

Table XI - Model summary & ANOVA - Hypothesis 1c

Model	R	R-square	Adjusted R Square	Std. Error of the Estimate
1c	0, 544	0,296	0,203	23,27024%

ANOVA	Sum of Squares	df	Mean Square	F	Sig
Regresion	30943,370	18	1718,076	3,175	0,001
Residual	73644,543	136	541,504		
Total	104587,913	154			

Source: Author own creation based SPSS output

Table XII - Model summary & ANOVA - Hypothesis 2

Model	R	R-square	Adjusted R Square	Std. Error of the Estimate
2	0,410	0,168	0,123	24,49844%

ANOVA	Sum of Squares	df	Mean Square	F	Sig
Regresion	17605,243	8	2200,655	3,694	0,001
Residual	86982,670	146	595,772		
Total	104587,913	154			

Source: Author own creation based SPSS output

Table XIII - Model summary & ANOVA - Hypothesis 3 (IB1)

Model	R	R-square	Adjusted R Square	Std. Error of the Estimate
3 - IB1	0,282	0,080	0,29	0,488

ANOVA	Sum of Squares	df	Mean Square	F	Sig
Regresion	3,005	8	0,376	1,579	0,136
Residual	34,737	146	0,238		
Total	37,742	154			

Source: Author own creation based SPSS output

To understand if the model was significant, it was conducted a model summary (R) and ANOVA analysis and it revealed that the assumptions are not significant for this model since p-value>0,005.

Table XIV - Hypothesis 3 analysis for Insufficient financial resources

Hypothesis 3	Unstandardized coefficients		Standardized Coefficients	T	Sig
	B	Std Error	Beta		
Insufficient financial resources	0,305	0,160		1,906	0,059
Firm Size	-0,097	0,087	-0,094	-1,113	0,267
Firm Age	-0,003	0,003	0,135	1,134	0,259
International Firm Age	0,004	0,003	0,138	1,265	0,208

PSI1	0,072	0,064	0,173	1,134	0,259
PSI2	0,085	0,065	0,188	1,311	0,192
PSI3	-0,083	0,073	-0,197	-1,146	0,254
PSI4	0,019	0,062	0,049	0,309	0,758
PSI5	-0,032	0,060	-0,083	-0,534	0,594

Source: Author own creation based SPSS output

Table XV - Model summary & ANOVA - Hypothesis 3 (IB2)

Model	R	R-square	Adjusted R Square	Std. Error of the Estimate
3 - IB2	0,375	0,140	0,117	0,445

ANOVA	Sum of Squares	df	Mean Square	F	Sig
Regresion	4,848	4	1,212	6,119	0,001
Residual	29,707	150	0,198		
Total	34,555	154			

Source: Author own creation based SPSS output

Table XVI - Model summary & ANOVA - Hypothesis 3 (IB3)

Model	R	R-square	Adjusted R Square	Std. Error of the Estimate
3 - IB3	0,343	0,118	0,100	0,326

ANOVA	Sum of Squares	df	Mean Square	F	Sig
Regresion	2,134	3	0,711	6,705	0,001
Residual	16,021	151	0,106		
Total	18,155	154			

Source: Author own creation based SPSS output

Table XVII - Model summary & ANOVA - Hypothesis 3 (IB4)

Model	R	R-square	Adjusted R Square	Std. Error of the Estimate
3 - IB4	0,388	0,151	0,104	0,297

ANOVA	Sum of Squares	df	Mean Square	F	Sig
Regresion	2,279	8	0,285	3,235	0,002
Residual	12,856	146	0,088		
Total	15,135	154			

Source: Author own creation based SPSS output

Table XVIII - Model summary & ANOVA - Hypothesis 3 (IB5)

Model	R	R-square	Adjusted R Square	Std. Error of the Estimate
3 - IB5	0,197	0,039	-0,014	0,346

ANOVA	Sum of Squares	df	Mean Square	F	Sig
Regresion	0,703	8	0,088	0,735	0,661
Residual	17,452	146	0,120		
Total	18,155	154			

Source: Author own creation based SPSS output

To understand if the model was significant, it was conducted a model summary (R) and ANOVA analysis and it revealed that the assumptions are not significant for this model since p-value>0,005.

Table XIX - Hypothesis 3 analysis for lack of information

	Unstandardized coefficients		Standardized Coefficients	T	Sig
	B	Std Error	Beta		
Lack of information	0,071	0,113		0,630	0,530
Firm Size	0,074	0,062	0,103	1,188	0,237
Firm Age	-0,001	0,002	-0,073	-0,600	0,550
International Firm Age	0,000	0,002	0,021	0,189	0,851
PSI1	0,018	0,045	0,062	0,399	0,690
PSI2	0,032	0,046	0,103	0,706	0,481
PSI3	-0,040	0,051	-0,137	-0,780	0,437
PSI4	0,034	0,044	0,128	0,784	0,434
PSI5	-0,054	0,043	-0,198	-1,251	0,213

Source: Author own creation based SPSS output

Table XX - Model summary & ANOVA - Hypothesis 3 (IB6)

Model	R	R-square	Adjusted R Square	Std. Error of the Estimate
3 - IB6	0,312	0,097	0,048	0,477

ANOVA	Sum of Squares	df	Mean Square	F	Sig
Regresion	3,571	8	0,446	1,963	0,055
Residual	33,203	146	0,227		
Total	36,774	154			

Source: Author own creation based SPSS output

Table XXI - Hypothesis 3 analysis for lack public support

	Unstandardized coefficients		Standardized Coefficients	T	Sig
	B	Std Error	Beta		
Lack of Public Support	0,490	0,149		3,301	0,001
Firm Size	-0,177	0,080	-0,174	-2,217	0,028
PSI1	0,089	0,032	0,215	2,743	0,007

Source: Author own creation based SPSS output

Table XXII - Hypotheses analysis

		R	R-Square	Sig
H1	H1a Process	0,488	0,238	0,168
	H1b Product	0,497	0,247	<,001
	H1c Capacbilities	0,557	0,331	<,001
H2		0,41	0,168	<,001
H3	IB1	0,282	0,080	0,136
	IB2	0,375	0,140	<,001
	IB3	0,417	0,174	<,001
	IB4	0,299	0,089	0,002
	IB5	0,197	0,039	0,661
	IB6	0,312	0,097	0,004

Source: Author own creation based SPSS output

Table XXIII - Variables Explanation

Process Innovation	PCI
Product Innovation	PDI
Innovation Capabilities (IC)	IC1: Cultivate awareness of learning and invest in learning
	IC2: Technological level of manufacturing equipment
	IC3: Total quality management
	IC4: Distribution Network
	IC5: Overlap between R&D, marketing and manufacturing functions
	IC6: Skilled Labor Choice
	IC7: Human Resources
	IC8: Connection between technology strategy and business strategy
Innovation Barriers (IB)	IB1: Insufficient financial resources
	IB2: Lack of skilled labor
	IB3: Lack of technological capabilities in contrast with competitors
	IB4: Low capacity to produce
	IB5: Lack of information
	IB6: Lack of public support
Public Support to Internationalization (PSI)	PSI1: Advice for international development (strategy, marketing, mode of entry, choice of countries)
	PSI2: Training in international trade
	PSI3: Information on markets and regulatory frameworks (database, market research)
	PSI4: Attendance to international trade exhibitions
	PSI5: Assistance / advise for exploring new markets/customers.

APPENDIX B - QUESTIONNAIRE

A - Company Identification

How many employees does your company have?

Between 10 and 49

Between 50 and 250

Year of Activity

Year of start of international activity: (if different from the year of start of activity)

Turnover last year: (EUR million)

B – Export

1. **Has your company exported in the last 3 years?**

Yes

No

2. **Regarding the year 2022, what was the volume of turnover in exports? (EUR million)**

3. **How do you compare the profits generated by your international sales with those from sales in Portugal?**

1- International sales are much more profitable than sales in Portugal

2- International sales are more profitable than sales in Portugal

3- International sales are as lucrative as sales in Portugal

4- International sales are less profitable than sales in Portugal

5- International sales are much less profitable than sales in Portugal

4. In the last five years, its international sales have grown:

1- At a much faster rate than sales in Portugal

2- At a faster rate than sales in Portugal

3- At the same pace as sales in Portugal

4- At a slower pace than sales in Portugal

5- At a much slower pace than sales in Portugal

5. In your opinion, what is the importance for the success of your company's exports in each of these factors?

Scale used: 1-Nothing important; 2-Not very important; 3-Important; 4-Very important; 5-Extremely important

1. Quality control
2. Competitive price
3. Stability of the economy in the destination country
4. Access to new markets
5. Support for internationalization
6. Supporting innovation

7. Product Promotion

8. Low risk in the target market

9. Distribution network

10. Tax incentives in the destination country

11. Choice of target market

6. In your opinion, do you think exporting has contributed to your company's sales growth? Has your company's export activity strengthened its strategic position?

Scale used: 1-Strongly disagree; 2-I partially disagree; 3-I neither agree nor disagree; 4-I partially agree; 5-I totally agree

1- Sales Growth

2- Strategic position

C – Innovation

1. In the last 3 years, your company has invested in:

Scale used: 1-Never; 2-Rarely; 3-Sometimes; 4-Often; 5- Always

1- Innovation

2- Research and Development (R&D)

2. In the last 3 years, your company has introduced:

Scale used: 1-Never; 2-Rarely; 3-Sometimes; 4-Often; 5- Always

1- Product Innovation

2- Process innovation (e.g. technological, organisational, and other processes)

3. How many products and processes has your company developed in the last 3 years?

1- None

2- Between 1 and 2

3- Between 3 and 4

4- More than 5

4. What is the importance of the following statements for your company?

Scale used: 1-Nothing important; 2-Not very important; 3-Important; 4-Very important; 5-Extremely important

1- Cultivate learning awareness and invest in learning

2- Technological level of manufacturing equipment

3- Total quality management

4- Distribution network

5- Overlap between R&D, marketing and manufacturing functions

6- Choice of skilled labor

7- Human resources

8- Connection between technology strategy and business strategy

5. What were the main barriers your company faced to innovate?

1 - Insufficient financial resources

2 - Lack of skilled labor

3 - Lack of technological capabilities compared to competitors

4 - Low capacity to produce

5 - Lack of information

6 - Lack of public support

6. What is the importance of the following statements:

Scale used: 1-Nothing important; 2-Not very important; 3-Important; 4-Very important; 5-Extremely important

1- Innovation in your company's financial results

2- Competitive advantage through innovation

3- Public support in the internationalization of your company

D- Internationalization

There are 3 types of export. **Direct** export, "which occurs when the company sells to an importer from a foreign **country," indirect** export "when it involves the use of intermediaries (import-export agents, trading company, subcontractor, central purchasing of large distribution chains, among others) located in the country of origin," and **own**

export, "which consists of direct sales to end customers in the destination country." Horizonte Internacionalizar , Guide for SMEs, AICEP/Audax, Lisbon. [edit] 2013

1. **Regarding the types of exports mentioned, what were the types of exports you adopted for your company?**

1- Direct Export

2- Indirect Export

3- Own Export

2. **What were the main barriers your company faced to export?**

1- Linguistic/cultural differences

2- Difficulties in accessing credit lines

3- Insufficient financial resources

4- Get distributor for your product

5- Lack of knowledge of the steps to export

6- Lack of skilled labor

7- Lack of technological capabilities compared to competitors

8 - Documentation and bureaucracy in the destination country

9 - Customs differences in destination countries

10- Problems adapting your products to foreign markets

11 - Little capacity to produce

3. How important are the following resources in the export process?

Scale used: 1-Nothing important; 2-Not very important; 3-Important; 4-Very important; 5-Extremely important

1- Financial

2- Human

3- Organizational

4- Technological

5- Physical (location, access to materials, etc.)

6- Reputational (image, brand, trust, loyalty, goodwill)

7- Business relationships (between international customers, suppliers and entities)

4. How often has your company received the following internationalization support services (e.g. export) in the past year?

Scale used: 1-Never; 2-Rarely; 3-Sometimes; 4-Often; 5- Always

1- Advice for international development (strategy, marketing, modes of entry, choice of countries)

2- International Trade Training

3- Information on markets and regulatory frameworks (databases, market research for a better understanding of the environment)

4- Attendance at international trade exhibitions

5- Assistance/advice for exploring new markets/customers, prospecting

E – COVID -19

1. As a result of COVID-19, you agree that your business has improved on:

Scale used: 1-Strongly disagree; 2-I partially disagree; 3-I neither agree nor disagree; 4-I partially agree; 5-I totally agree

1- Innovation

2- Internationalization

3- Export

2. As a result of COVID-19, you agree that your company has improved resources:

Scale used: 1-Strongly disagree; 2-I partially disagree; 3-I neither agree nor disagree; 4-I partially agree; 5-I totally agree

1- Financial

2- Human

3- Organizational

4- Technological

5- Physical (location, access to materials, etc.)

6- Reputational (image, brand, trust, loyalty, goodwill)

7- Business relationships (between international customers, suppliers and entities)

F - Final considerations

1. Do you agree that supporting innovation is essential for the success of small and medium-sized enterprises in the international market?

1-Strongly disagree; 2-I partially disagree; 3-I neither agree nor disagree; 4-I partially agree; 5-I totally agre

2. Do you agree that public support is essential for the success of small and medium-sized enterprises in the international market?

1-Strongly disagree; 2-I partially disagree; 3-I neither agree nor disagree; 4-I partially agree; 5-I totally agree

3. Do you have any other observations or comments on the topic covered in this questionnaire?

1-Strongly disagree; 2-I partially disagree; 3-I neither agree nor disagree; 4-I partially agree; 5-I totally agree

APPENDIX C - QUESTIONNAIRE LITERATURE

Author, year	Article's name	Journal's name
Catanzaro, A., Messeghem, K., & Sammut, S. (2019)	Effectiveness of Export Support Programs: Impact on the Relational Capital and International Performance of Early Internationalizing Small Businesses	*Journal of Small Business Management*
Katsikeas, C. S., Deng, S. L., & Wortzel, L. H. (1997)	Perceived Export Success Factors of Small and Medium-Sized Canadian Firms	*Journal of International Marketing*
Bigliardi, B. (2013)	The effect of innovation on financial performance: A research study involving SMEs, Innovation: Management, Policy & Practice, 15:2, 245-255;	*Innovation: Management, Policy & Practice*
Pastelakos, E., Theodoraki, C., & Catanzaro, A. (2022)	The role of innovation and internationalization support in small and medium-sized enterprises' export performance	*European Management Review*
Ribau, C. P., Moreira, A. C., & Raposo, M. (2017)	SMEs INNOVATION CAPABILITIES AND EXPORT PERFORMANCE: AN ENTREPRENEURIAL ORIENTATION VIEW	*Journal of Business Economics and Management*
Mataveli, M., Ayala, J. C., Gil, A. J., & Roldán, J. L. (2022)	An analysis of export barriers for firms in Brazil	*European Research on Management and Business Economics*
Madrid-Guijarro, A., Garcia, D., & Van Auken, H. (2009)	Barriers to Innovation among Spanish Manufacturing SMEs	*Journal of Small Business Management*
Simões, C., Esperança, J. P., & Simões, V. C. (2013)	Horizonte Internacionalizar, Guia para PME, AICEP/Audax, Lisboa. 2013	*Lisboa: AICEP/Audax.*
Aulakh, P. S., Kotabe, M., & Teegen, H. (2000)	Export strategies and performance of firms from emerging economies: evidence from Brazil, Chile and Mexico	*Academy of Management Journal*
Zou, S., Taylor, C. R., & Osland, G. E. (1998)	The EXPERF scale: a cross-national generalized export performance measure	*Journal of International Marketing*
Guan, J., & Ma, N. (2003)	Innovative capability and export performance of Chinese firms	*Technovation*