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Pandemic context and implications for Portuguese SMEs' Internationalization

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Master in Management

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BUSINESS
SCHOOL

Department of Marketing, Strategy and Operations

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*Dedicado à minha família que sempre me apoiou e motivou durante este processo.
(Dedicated to my family who have always supported and motivated me during this
process.)*

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RESUMO

Considerando que a internacionalização tem um grande impacto nas PME's e na economia do mundo, é importante avaliar as consequências de uma pandemia, uma vez que a mesma afeta as operações das empresas e conseqüentemente a sobrevivência das economias.

O propósito deste estudo é perceber as repercussões para as PME's e as suas iniciativas para superar este período de recessão.

Surgem várias questões relacionadas com este tópico, nomeadamente: Quais são os principais impactos causados pela pandemia? A estratégia de Internacionalização teve de ser adaptada ou mudada? A empresa necessitou de interromper as suas operações transfronteiriças? Quais foram os recursos da empresa considerados essenciais para superar este período? Como é que as empresas lidaram com a pandemia? O que funcionou e o que falhou? Houve empresas que beneficiaram com a situação imposta?

Assim, o objetivo é alcançar uma análise profunda dos fatores que influenciam a internacionalização das PME's Portuguesas usando como referência um determinante significativo, a pandemia.

Palavras chave: Internacionalização, PME's, PME's Portuguesas, Pandemia, Covid-19

Classificação JEL: F23, M16

ABSTRACT

Considering that internationalization has such a big impact in SMEs and world's economy, it is important to evaluate the consequences of a pandemic as it affects the functionality of the firms' operations and consequently the survival of economies.

The purpose of this study is to perceive the repercussions for SMEs and their initiatives to overcome this recession period.

Many questions emerge regarding this topic, namely: What are the main impacts caused by the pandemic? Did the internationalization strategy change after this? Did the firm stop its transnational operations? Which firm resources have proven to be essential to endure it? How did companies cope with it? Which approaches worked and which failed? Were there advantages for certain firms?

Thus, the goal is to have a deep analysis of the factors influencing the internationalization of Portuguese SMEs using as a frame of reference a significant determinant, the pandemic.

Keywords: Internationalization, SMEs, Portuguese SMEs, Pandemic, Covid-19

JEL classification: F23, M16

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GLOSSARY OF ABBREVIATIONS AND ACRONYMS

AEP	Associação Empresarial de Portugal
AICEP	Portugal Global
AIIE	Associação Internacionalização e Inteligência Económica
ANIVEC	National Association of Clothing Manufacturers
ANPME	Associação Nacional das Pequenas e Médias Empresas
APICCAPS	Portuguese Footwear, Components, Leather Goods Manufacturers' Association
CCIP	Portuguese Chamber of Commerce and Industry
CIP	Confederation of Portuguese Business
CPPME	Confederação Portuguesa das Micro, Pequenas e Médias Empresas
EC	European Commission
EU	European Union
FDI	Foreign Direct Investment
GDP	Gross domestic product
INE	Statistics Portugal
LUSAPME	Associação das Pequenas e Médias Empresas
Mundo's	Associação para a Internacionalização de Empresas Portuguesas em Mercados Francófonos
PME	Pequenas e Médias Empresas (equivalent to SME)
SBA	Small Business Act
SME	Small and medium-sized enterprises

INTRODUCTION

Internationalization is a branch of Globalization, highly related with growth which occurs when enterprises extend their operations beyond their domestic market (Ruzzier, Hisrich, & Antoncic, 2006 as cited in Dutot, Bergeron, & Raymond, 2014). In other words, firms use their resources, capabilities and network to engage in international activities (Portugal Global, 2013).

Through international expansion, companies increase their sales by attracting new customers, therefore, allowing themselves to accomplish economies of scale (Lu & Beamish, 2006 *in* Pacheco, 2019).

When internationalizing, companies should be aware of the elements influencing that process. These can be put in categories of internal and external factors. Internal refers to the firm's characteristics which can be controlled by it whereas external aspects, the firm cannot fully control them as they are not part of the company (Aaby & Slater, 1989; Ford & Leonidou, 1991; Leonidou, 1998a as cited in Suárez-Ortega & Álamo-Vera, 2005).

The European Union is exceptionally propelling for those who wish to broaden their markets. EU constitutes a unified market of 450 million consumers whose members have a smaller "psychic distance" and most of them use the same currency (€) contributing to less exchange risks and costs such as transportation and communication. Besides EU, with globalization and innovation advancements, the world has decreased its border barriers and facilitated trade between countries creating more opportunities for international trade (European Commission, 2007; Portugal Global, 2013).

SMEs support Europe's economy, representing 99.8% of all enterprises, employing 65% of all workforce and being responsible for 52.8% of the value added (European Commission, 2014; Eurostat, 2021).

Based on a study by the European Commission from 2010, SMEs who were internationalized outperformed those which had not, proving that internationalization, performance, competitiveness and growth are linked (European Commission, 2014). Going global will enable SMEs to survive, to grow, to increase their competitiveness and to be sustainable in the long term. Thus, SMEs should have an international focus as they play an important role in the European economy whose growth depends on it (Dutot, Bergeron, & Raymond, 2014; Portugal Global, 2013).

Despite this, internationalization is not the reality for most EU SMEs as the majority hinge on the national market (European Commission, 2007). Operating internationally is not the same for SMEs as it is for larger enterprises. Smaller firms have specific characteristics which can complicate process of internationalizing (Shuman & Seeger, 1986; Baird et al., 1994 *in* Kyvik, Saris, Bonet, & Felício, 2013). As examples of some of them are the firm's size, resources, age, structure, strategy, among others (Pacheco, 2019). Furthermore, there are challenges external to the firm (Paul et al., 2017), nonetheless, the literature considers that there are more advantages than disadvantages when expanding the business abroad (Pangarkar, 2008 *in* Trigo, Calapez, & Santos, 2009).

There are numerous theories as to how SMEs initiate their internationalization approach but what allows these organizations to profit from the benefits of internationalization is by choosing and adopting a strategy/mode of internationalization or a combination of strategies/modes that can optimize their resources and capabilities as well as reducing the risk of operating in foreign markets. Some examples are joint ventures, direct export, indirect export and strategic alliances (Calof & Beamish, 1995; Dutot, Bergeron, & Raymond, 2014).

SMEs constitute 99,9% of total companies in Portugal (PORDATA, 2021), consequently, they are essential for the national economy (Serrasqueiro, & Nunes, 2008).

According to the last SBA Fact Sheet of Portugal from 2019¹, the country is considered one of the worst members in the EU in terms of internationalization. Since 2008, the percentage of goods and services exported increased when compared to the GDP mainly because of the increasing international demand and support programs. Given that Portugal is a small country with a market continuously exposed to foreign competitors and unfavorable economic conditions, it is imperative that Portuguese SMEs consider internationalization so as to ensure the continuity of operations in the long term (Portugal Global, 2013).

Additionally, some authors have highlighted how valuable it has been for SMEs to increase their activities across national boundaries after periods of recession like the past economic and financial crisis (Navarro-García, Peris-Ortiz, & Barrera-Barrera, 2016 as cited in Pacheco, 2019).

¹ SBA or Small Business Act Fact Sheets assess the performance of SMEs in Europe through a set of 10 principles (1-Entrepreneurship; 2-'Second Chance'; 3-'Think Small First'; 4-'Responsive Administration'; 5-State Aid & Public Procurement; 6-Access to Finance; 7-Single Market; 8-Skills & Innovation; 9-Environment and 10-Internationalization. These Fact Sheets are published each year but Portugal's latest version was released in 2019.

The most recent event which could be compared to previous recession periods is the pandemic of Covid-19, impacting companies and economies since 2020 and ongoing. Data collected from the Key Figures on European Business 2021 Edition Report shows that the pandemic, especially during the first wave, had a strong negative impact in each activity sector. After each wave, the outputs for each sector would improve slightly and with new waves and confinements, outputs would drop (as shown in Figures 1 to 4, Annex A).

The most updated statistics on the Covid-19 situation in Portugal convey that the month of April was positive for all activity sectors and especially for exportation considering the substantial turnover increases compared to the previous month (Statistics Portugal, 2021).

With the pandemic shutting down companies and suppressing countries' economies, it is important to, mainly, comprehend what are the impacts of this pandemic context for SMEs, what was the role of internationalization in this process, which implications arose from it, how these firms responded to the challenges imposed, if there were new opportunities emerging from the situation, which changes occurred.

Hence, the main objectives of this research are to perceive and analyze what ensued in the course of this period, to understand how SMEs adapted to the conditions imposed and if internationalization was used as a mean to persevere.

From the literature and the objectives of this study, the following research question was defined to summarize the main issue and the constructs concerning it: Considering the firm's characteristics and its internationalization, what are the main implications and outcomes of a pandemic?

Since Europe is mainly constituted by SMEs, it made sense to focus the research on this group of firms. In addition, with the circumstances of the recent pandemic, it seemed fit to acknowledge the importance of the implications this context brought to the internationalizing firms and how they are taking action as a consequence.

In that sense, this research aims to contribute to the existing knowledge and theory regarding unexpected events affecting SMEs that have opted to internationalize. Additionally, the research results may be used for further investigation. Regarding the practical contributions, this study can help internationalized firms by learning through past experiences using comparable examples. Moreover, it helps them evolve and develop strategies and contingency plans for future occurrences that might generate resembling outcomes which can be easily tackled, later on.

This paper is structured in four sections. Firstly, the review of literature is approached respecting the topic of SMEs' Internationalization. Secondly, the methodology section explains how the research is executed. Subsequently, the analysis of the results from the data collected are revealed. Lastly, the conclusions, practical and theoretical contributions, limitations and the suggestions for future research are stated in the final chapter.

CHAPTER 1

LITERATURE REVIEW

Internationalization Concept

The definition of Internationalization has varied and evolved through the decades. In the 1920s, this terminology was used to describe the dealings between different countries. With the post-second world war the term gained importance and more so with the uprise of Globalization during the 1970s (Gjellerup, 2000 *in* Ruzzier, Hisrich, & Antoncic, 2006). With Globalization, technology and communication development as long as free-trade agreements, deregulations and the “economic restructuring and liberalization that followed the fall of socialism in Russia and Central/Eastern Europe, as well as the geographical expansion of markets in Asia” (Ruzzier et al., 2006) allowed companies to grow globally.

From 1970s onward, various scholars defined Internationalization with a different focus: processes, firm’s operations, network, relationships, resources and international environment (Ruzzier et al., 2006). Most theorists defended that Internationalization is a process that allows firms to grow in stages as they become more involved in their international activities (Johanson & Vahlne, 1977 *in* Éltető, 2018). Many supported the idea that “Internationalization is the outward movement in a firm’s international operations” (e.g. Turnbull, 1987 as cited in Calof & Beamish, 1995), which remains as the broader definition of Internationalization.

SMEs’ Internationalization

Conforming to the Decree-Law 372/2007, Annex: Article 2, Small and Medium-Sized Enterprises (SMEs) are firms with fewer than 250 employees with an annual turnover that does not exceed 50 million euros or with a total annual balance-sheet that does not exceed 43 million euros.

SMEs used to operate in their own region or national borders (Pleitner, 1997 *in* Ruzzier et al., 2006) but, in the last decades, many have enlarged their transnational activities

(Gjellerup, 2000 *in* Ruzzier et al., 2006) and are now essential for the growth of their country's economy (Amini, 2004; Peters & Waterman, 1982 *in* Paul, Parthasarathy, & Gupta, 2017) and job creation (Paul et al., 2017). Subsequently, exportation is a source of competitive advantage (Buckley et al., 1990 *in* Westhead, Binks, Ucbasaran, & Wright, 2002) and many researchers admit that it is crucial for SMEs survival (D'Souza & McDougall, 1989 *in* Westhead et al., 2002).

Internationalization Theories

Many factors influence the choice of SME internationalization strategies such as, psychic distance, the relationships within the network, the firm's resources, the innovation of products/services and the entrepreneurial know-how. Therefore, these elements have been considered in past research on SMEs' internationalization, summarized below.

I. Uppsala Stage Model

This theory affirms that internationalization is a continuous and progressive process (Johanson et al., 1975; Johanson & Vahlne, 1977 *in* Grönroos, 2018). The model states that firms commit to international operations in stages as they acquire market knowledge through experience. Johanson and Vahlne (1977) consider that firms need to have experiential learning to battle "psychic distance" (as cited in Éltető, 2018). Psychic distance is a term used to define the language, culture and political differences which restrain the communication between the selling firm and the buying firm (Johanson & Vahlne, 1977 *in* Andersen & Buvik, 2002). In this case, the international stages start with the closer markets/countries, after that, firms internationalize to markets or countries that are more distant but with a smaller psychic distance and lastly, the most distant markets are explored.

II. Network Approach

Johanson and Vahlne (1990) extended the research on the Uppsala Model and highlighted the importance of relationships established in the firm's network to facilitate the internationalization process (as cited in Ruzzier et al., 2006). By interacting and establishing new relationships with other firms, the internationalizing firm is able to grow its network and consequently internationalize to new markets (Johanson & Mattson, 1988; Coviello & Munro, 1997 *in* Éltető, 2018; Mitgwe, 2006 *in* Paul et al., 2017). Due to their limited resources, SMEs benefit from their network not only by collecting market information and knowledge but also

by following and imitating partners' actions which accelerates the access to international markets (Jaklic, 1998 *in* Ruzzier et al., 2006; Oehme & Bort, 2015 *in* Paul et al., 2017).

III. Resource-based Approach

Considered as a recent perspective of internationalization research, there was a need to examine the resources firms must have in order to internationalize. The resource-based approach proposes that firms need to have the capability of owning and generating unique and inimitable resources which will allow them to have sustainable competitive advantage (Conner, 1991 *in* Ruzzier et al., 2006). Ahokangas (1998) defined internationalization as the process of building resources necessary for the pursuit of international operations (as cited in Ruzzier et al., 2006). Although there are many definitions for the term resources, we can summarize it as "...stocks of available tangible or intangible factors that are owned or controlled by the firm and converted into products or services, using a variety of other resources and bonding mechanisms." (Ruzzier et al., 2006).

IV. International Entrepreneurship

The international entrepreneurship research supports that some firms internationalize from the beginning instead of internationalizing in stages (Oviatt & McDougall, 1994 *in* Paul et al., 2017). These firms are the so called "International New Ventures" or "Born Globals" (Rennie, 1993; McDougall, Shane, & Oviatt, 1994; Knight & Cavusgil, 1996; Madsen & Servais, 1997; Madsen, Rasmussen, & Servais, 2000 *in* Paul et al., 2017). Born Globals are small firms who have innovative products or services and unique resources which allows them to have sustainable competitive advantage and rapidly internationalize their operations (Knight & Cavusgil, 1996; Knight & Cavusgil, 2004 2000 *in* Paul et al., 2017). This approach points out that entrepreneurs and their knowledge, competencies and skills are required factors for SMEs internationalization (Miesenbock, 1988 *in* Ruzzier et al., 2006). Entrepreneurs are not afraid to take risks and seek new opportunities for the growth of the company with the resources available (OECD, 2000 *in* Ruzzier et al., 2006).

Internationalization Modes

Internationalization can take place in various forms: exportation, franchising and licensing agreements, joint ventures and others (Calof & Beamish, 1995).

These forms were grouped into 3 modes of operating in global markets, through exportation, contractual forms and investment. Exportation includes solely exporting modes. Contractual comprise strategic alliances and exchanges involving contracts such as licensing and franchising agreements. Investments consist of solo ventures, joint ventures and FDI (Root, 1994 *in* Dutot, Bergeron, & Raymond, 2014)

Internationalization research is mostly focused on manufacturing firms as, formerly, service firms would internationalize by following their manufacturer clients' decision to supply foreign markets (Weinstein, 1977; Vandermerwe & Chadwick, 1989 *in* Grönroos, 1999). Nowadays, with technology advancements, it is easier for service firms to explore different markets and thus we can consider three main ways of service firms internationalizing: "(1) client-following mode; (2) market-seeking mode; and (3) electronic marketing mode." (Grönroos, 1999). Firms can opt to pursue more than one mode at the same time.

Authors expressed that internationalization is riskier for service firms than manufacturing firms (Carmen & Langeard, 1980 *in* Cicic, Patterson, & Shoham, 1999). This can be justified by the reason that service firms cannot internationalize in stages and hence why defining a good strategy is so important for their survival in new markets.

Internationalization Strategies

There are five main strategies for service internationalization which can also be applied to manufacturing firms: "(1) direct export; (2) systems export; (3) direct entry; (4) indirect entry; and (5) electronic marketing." (Grönroos, 1999).

I. Direct Export

It can be defined as the direct supply of goods or services to foreign markets. In the case of service firms, sometimes, need to take their resources from the domestic market to the foreign market in order to provide the service. The service is supplied and consumed at the same time which can be risky for the service firm in case of any mistakes or problems.

II. Systems Export

Systems export occurs when two or more firms cooperate and work together, for example, a manufacturer who hires a distribution company to deliver their goods to a client. This strategy is the main choice for service internationalization.

III. Direct Entry

The internationalizing firm bases their own firm in the new market. Service firms can, usually, face a lot of problems such as government and regulatory constraints when opting for direct entry strategy so in order to avoid these barriers, they can acquire an existing firm in the foreign market within the same activity sector. This way, the internationalizing firm can get more market information and by maintaining the same employees in the foreign company it is less risky to operationalize abroad. Service firms can also join forces with a local company by agreeing on a joint venture. By sharing market knowledge, both firms can grow.

IV. Indirect Entry

When the firm wants to establish itself in the foreign market without acquiring or owning firms in the foreign market, they can use indirect ways of setting their position abroad. One of them is through licensing and franchising agreements which allows the local company to have exclusive rights on the concept, name or brand of the firm. In return, the internationalizing firm gets access to market information. This strategy is considered the less risky of the strategies since it is easier to get market knowledge and enter new markets. Nevertheless, the internationalizing firm has less control over the international activities.

V. Electronic Marketing

Firms that use electronic technology to increase their sales. Firms use this resource to give easier access to their products or services and in return they can track customer behavior and collect important data to help them improve and make adjustments when necessary. The biggest advantage of electronic marketing is that it can reach basically anyone, anywhere, as long as they have Internet. This creates great opportunities for the firm to grow immensely in new markets. Nonetheless, firms that use electronic marketing are always dependent on other agents such as delivery services.

Services and Goods Internationalization

Many researchers have debated whether manufacturing and service firms internationalized differently and the opinions have always been divided. However, there are some differences between services and physical goods. Kotler (1991) pointed out four characteristics featured in services that differentiate them from manufacturing goods: intangibility, inseparability, heterogeneity and perishability (as cited in Cicic et al., 1999). The most important components of services are inseparability and intangibility. In most services, it is impossible to separate the provision and consumption processes as they occur simultaneously. Furthermore, the bigger the service intangibility, the bigger is the difference between services and goods internationalization (Barber & Ghauri, 2012).

In the past, most authors believed that goods and services were marketed differently (Shostack, 1987 *in* Cicic et al., 1999) but with the continuous growth of the service sector, this opinion has been changing. Services are contributing more and more to the economic development of countries and for employability. They represent between 70% to 75% of employment and gross domestic product (GDP) (Bateson, 1992; Lewis et al., 1992; Sasser, Hart, & Heskett, 1986 *in* Cicic et al., 1999) and between 25% to 30% of world trade, therefore considered the fastest growing sector (Keegan, 1995 *in* Cicic et al., 1999). Recently, with the technology advances and globalization phenomenon, manufacturing firms have internationalized their operations and their service providers have followed. Moreover, many manufacturing firms have embedded service components in their goods consequently reducing the intangibility of services and the distinction between services and goods.

Erramilli (1990) distinguished two types of services, hard (tangible) and soft (intangible) services (as cited in Cicic et al., 1999). Hard services are not required to be present in the international market hence why the provision and consumption of the service can occur at different times and in different places. Due to the tangibility of hard services, these can be easily exported (Erramilli & Rao, 1990 *in* Cicic et al., 1999) and the progressive internationalization model of manufacturing goods applies to them, as well. Soft services cannot have their provision and consumption processes separated as they have to occur at the same time, in the foreign market it is being provided and consumed. This type of services cannot be exported as hard services and manufactured goods are (Patterson & Cicic, 1995 *in* Cicic et al., 1999). Usually, soft service firms resort to joint ventures, licensing and franchising agreements, among others, to internationalize (Grönroos, 1999).

Ekeledo and Sivakumar (1998) recognized that hard services and their internationalization process are similar to manufacturing goods but they are the opposite of soft services (as cited in Grönroos, 1999).

Factors Motivating Internationalization

Internationalization is necessary for the survival and growth of SMEs (Lu & Beamish, 2001 *in* Paul et al., 2017). Many reasons can be listed on why SMEs decide to internationalize their activities. We can categorize those incentives into internal and external (Aaby & Slater, 1989; Ford & Leonidou, 1991; Leonidou, 1998a *in* Suárez-Ortega & Álamo-Vera, 2005). Internal are firm-level motivations for internationalization and external are elements out of the firm's control that spurs firms' needs to expand to foreign markets.

Internal factors are product/service innovation; other sources of a firm's competitive advantage; excess capacity; managers decision and wish to grow; need for better use of capacity; desire for performance improvement; having the necessary knowledge, capabilities and skills to exploit new markets; firm's global network; etc. (e.g. Etemad, 2004 *in* Éltető, 2018; Danik et al., 2016 *in* Éltető, 2018; Beuttel et al., 1980 *in* Miesenbock, 1988; Morgan & Katsikeas, 1997 *in* Ruzzier et al., 2006; Musteen et al., 2014 *in* Paul et al., 2017; Mackinnon, Chapman, & Cumbers, 2004 *in* Paul et al., 2017).

External factors include poor economic and regulatory conditions; government export programs; national market saturation and lack of growth opportunities; foreign market opportunities; technological and innovative breakthroughs; economic recession/ economic crisis; among other factors (e.g. Boter & Holmquist, 1996; Etemad, 2004 *in* Éltető, 2018; Danik et al., 2016 *in* Éltető, 2018; Malekzadeh & Nahavandi, 1985 *in* Miesenbock, 1988; Golovko & Valentini, 2011 *in* Paul et al., 2017; Beuttel, 1981 *in* Miesenbock, 1988; Kaynak et al., 1987 *in* Miesenbock, 1988).

Factors Limiting Internationalization

Although there are many advantages when internationalizing, it is also possible to identify some barriers. Limitations faced by SMEs can be divided into internal and external (Paul et

al., 2017). Internal challenges are micro-level or at the firm-level and external challenges are macro-level, in other words, they are external to the firm.

Internal impediments can be lack of capacity; lack of information, experience or knowledge; lack of competent staff; lack of capital; client payment collection delays and missed payments; managerial attitude towards internationalization; limited or lack of resources and capabilities; quality and safety control; product/service adaptation to foreign markets and difficulties with distribution and reaching clients (e.g. Beuttel et al., 1980 *in* Miesenbock, 1988; Wood et al., 2015 *in* Paul et al., 2017; Oura et al., 2015 *in* Paul et al., 2017; Cardoza et al., 2015 *in* Paul et al., 2017; Baykal & Gunes, 2004 *in* Paul et al., 2017; Kaynak & Kothari, 1984 *in* Paul et al., 2017; Leonidou, 1995 *in* Paul et al., 2017; Mariotti & Piscitello, 2001 *in* Paul et al., 2017; Cannon, 1980 *in* Miesenbock, 1988; Thurbach & Geiser, 1981 *in* Miesenbock, 1988).

External impediments comprise psychic and cultural distance which include other limitations such as language, cultural and political differences; lack of interest/demand from foreign markets; unfavorable trade and international agreements/ regulations and policies; government regulations and lack of export support programs; market uncertainty; exchange rate and price fluctuations; possible exportation costs and risks; and political and economic instability (e.g. Johanson & Vahlne, 1975 *in* Miesenbock, 1988; Jain, 1989 *in* Paul et al., 2017; Brooks & Frances, 1991 *in* Paul et al., 2017; Kaynak, Ghauri, & Olofsson-Bredenl w, 1987 *in* Paul et al., 2017; Erramilli, 1992 *in* Cicic et al., 1999; Mattson, 1972 *in* Miesenbock, 1988).

Smaller firms usually have more internationalization barriers than larger firms, mainly, due to their lack of resources, knowledge and experience. Therefore, it is important that SMEs identify possible limitations and adopt strong strategies that allow them to grow and survive in international markets (Kahiya & Dean, 2016 *in* Paul et al., 2017). As they grow, firms gain more experience through the years which aids them deal with adversities (Kneller & Pisu, 2007; Reuber & Fischer, 1997 *in* Paul et al., 2017).

Portuguese SMEs' Internationalization Standpoint

Based on Insight studies from 2016 to 2019 executed by The Portuguese Chamber of Commerce and Industry, it is possible to make some conclusions regarding Portuguese SME internationalization. Exportation is the most opted internationalization model and the

strategies adopted by firms are different depending on the sector. Service, industry and manufacturing goods SMEs have different structures which facilitate or limit their internationalization process. Although most sectors use direct and/or occasional exportation as a mode to internationalize, the service sector has a variety of mode choices. Considering the intangible nature of most service provisions, exportation is not possible and there is a bigger need to be close to the foreign market (as shown in Figure 1, Annex B).

Through an inquiry to around 1000 Portuguese SMEs in 2017, 80% were already operating internationally, 39% admitted that international activity represented more than half of their business volume and 85% self-funded their international activity. 65% of the internationalized SMEs acknowledged the growth of their international activity since the 2 previous years, 42% confessed that internationalization was the necessary extension to explore both the internal and external markets and 56% saw an opportunity in internationalization to battle internal market saturation or to recover from decreases in their turnover.

Further inquiries in the later months confirmed that internationalization was still the best option in order for SMEs to grow. From this analysis, a major finding was highlighted: the longer the firm has been internationalized, the bigger the number of markets it is operating in. By consecutively being in contact with foreign markets, the internationalization process grows and the firm can attract new clients and markets and as a result international activity will have a bigger impact in the firm's volume of business (as shown in Figure 2 and 3, Annex B).

Moreover, SMEs were questioned regarding the channels and factors that promote internationalization activities. The digital factor, having access to information and having qualified teams were considered the most important factors when internationalizing. As for channels to maintain the relationship with the foreign clients, firms mostly communicate via email or in person (as shown in Figure 4 and 5, Annex B).

In 2018, exportation kept increasing according to INE data and through the successive number of years of firms operating in foreign markets and expanding to new markets, Portuguese SMEs are more and more aware of the great opportunities that internationalization enables them considering the characteristics and various limitations that these firms face. Due to this continuous investment in international markets, it is normal that international operations represent a bigger portion of these companies' turnover (as shown in Figure 6 and 7, Annex B).

Recession Period Equated to a Pandemic Context

With the economic crisis of 2008 that struck the world, to many firms, internationalization was the only way to endure the hardships that arose from this period of recession.

According to Éltető (2018), Portuguese SMEs increased their exportations rapidly after the crisis which allowed them to grow their business volume significantly. Éltető (2018) cited a few studies (Deloitte-AICEP, 2014; Macedo, 2010; Correia & Gouveia, 2016) which listed the main internal and external reasons why these firms decided to export, namely, innovation, firm's international experience and the partnerships established in the network were the most important internal factors and the national market saturation was the main external factor pointed out (as shown in Table 1, Annex B). In addition, the author mentioned that Portuguese SMEs accounted for 99.9 % of total firms which contributed to the country's employment, approximately 78.1%, and to their total value of 68.5% (as shown in Table 2, Annex B).

After the crisis, there was a period of time when most European countries were exporting to non-EU countries and from 2013 to 2015, exportation to the EU market increased again (as shown in Table 3, Annex B). This showed that psychic distance is an important concept for SMEs during a recession period since Europe is still the most important market to European countries considering its closeness and similarity (Éltető, 2018).

Nowadays, the world is facing a similar situation to the economic recession of 2008. A pandemic which originated in 2019 and spread worldwide in 2020 is pausing businesses, slowing down economies and shutting down countries. In Portugal, from March to May, the state of emergency was declared causing schools and companies to close and work from home.

Throughout the year of 2019, Services and Industrial sectors' turnover as well as exportations increased and decreased at a constant rate. Since the mandatory quarantine started, they decreased drastically, based on the 24th Weekly Report of INE on Monitoring the Social and Economic Impact of the Pandemic:

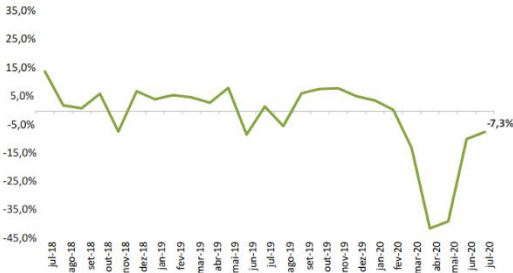


Figure 1.1. Exportation Total
 Source: Statistics Portugal

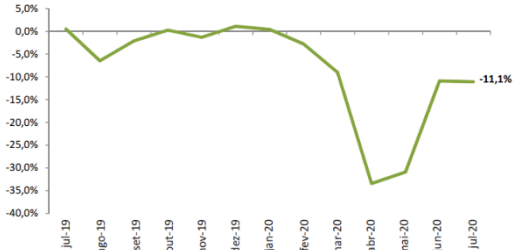


Figure 1.2. Industry Sector Turnover
 Source: Statistics Portugal

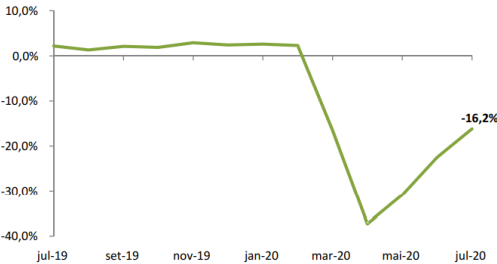


Figure 1.3. Service Sector Turnover
 Source: Statistics Portugal

Portugal's most recent scenario is more positive. In terms of exports for the month of April 2021, it had a big increase compared to March, registering a growth of 82,4%. The services' sector had the lowest growth of all sectors (43,6%) whereas industry had the highest growth (54,2%). The commerce sector also had a big increase in turnover compared to the previous month as it totaled 48,4% (Statistics Portugal, 2021). As shown in these figures:



Figure 1.4. Exports April 2021

Source: Statistics Portugal

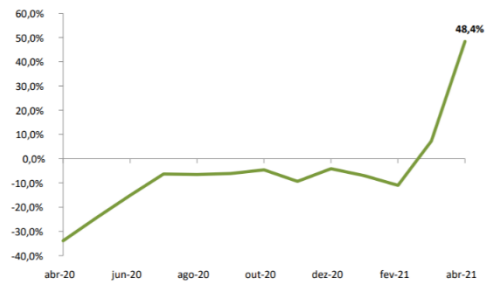


Figure 1.5. Commerce Sector Turnover

Source: Statistics Portugal

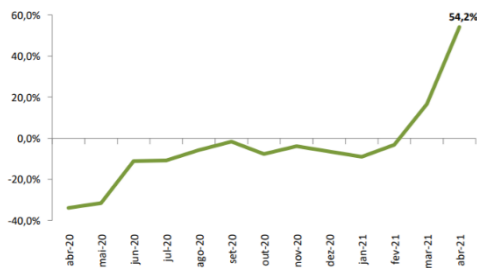


Figure 1.6. Industry Sector Turnover

Source: Statistics Portugal

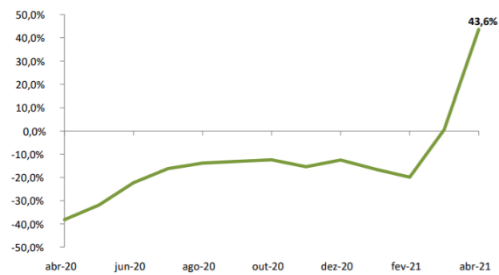


Figure 1.7. Services Sector Turnover

Source: Statistics Portugal

After addressing the literature review presented above, a few hypothesis were generated which will be tested within the scope of this study:

- H1:** Internationalization is vital for some SMEs to survive during the pandemic.
- H2:** Firm's size limit SMEs when internationalizing, even more during this period.
- H3:** Firm's location and psychic distance are two factors that limit the firm during the pandemic.
- H4:** Europe is the most substantial market for Portuguese SMEs during the pandemic.
- H5:** Electronic marketing was the most important mode of internationalization for SMEs during this period.
- H6:** Service firms face higher risks than other activity sector firms.
- H7:** With the pandemic, new restrictions (limitations) arose from the occasion.

H8: Despite limitations imposed by the pandemic, SMEs were able to identify new growth opportunities.

H9: International operations' representativeness in SMEs' business volume decreased during the pandemic.

H10: The number of years a firm is operating abroad, allows them to continue their international activity.

H11: Digital factor benefited internationalized SMEs even more.

Accordingly, a graphic illustration portraying the research question and its respective hypothesis is displayed below:

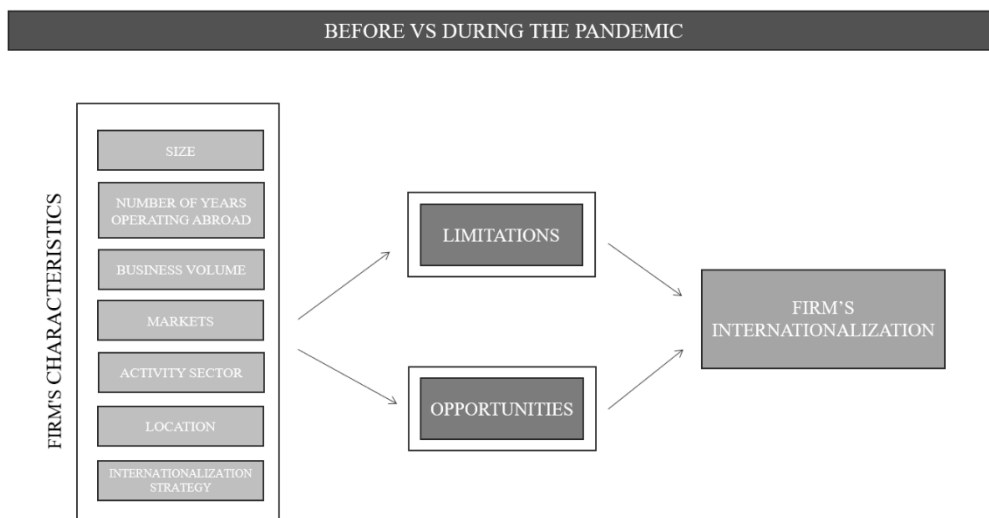


Figure 1.8. Conceptual Model

CHAPTER 2

METHODOLOGY

The following section focuses on describing the methods used to attain clarifications about the problem and hypothesis of this research.

The purpose of this study is to comprehend the conditions SMEs encounter when facing a pandemic and the underlying tactics adopted to prevail. For that reason, the research type selected was both a quantitative and qualitative study. The population targeted were all SMEs that have their operations internationalized, hence, this is a multi-industry study.

To pursue the objectives of the study, a questionnaire was developed and distributed via an online platform, Google Forms. Anonymity was guaranteed to all firms and the questionnaire was fully in Portuguese so as facilitate the process for respondents and to increase the response rate of the study. The survey was available from March, 1st of 2021 until May, 25th of 2021.

The questionnaire was designed in accordance with the literature and based on other questionnaires and studies executed by the Portuguese Chamber of Commerce and Industry. The aim was to substantiate the questionnaire using trustworthy and accurate sources consequently ensuring the reliability of the questions. The questions composing the survey are grouped in sections depending on the conceptual model constructs proposed for this research so as to simplify the analysis of the data and to reach conclusions. The focal point of the first set of questions are the perspectives on the before and during the pandemic. The second group of questions concern the firm's characteristics. After, there is a small introduction to the topic of digitalization. The next section relates to the limitations and possible opportunities arising from a pandemic. The last part of the questionnaire are the perspectives for the future of the companies.

The form was designed through the application of different survey indexes, those are, multiple choice, checkboxes, Likert scales, demographic questions, matrix and open-ended questions.

The nature of the questionnaire requires knowledge only those who have the power to make the decisions in the firm can provide, therefore, the target participants were the top

management. The distribution method had a first phase where a few associations (AEP, AIIE, CPPME, PME Portugal, LUSAPME, Mundo's – Associação, ANPME, APICCAPS, ANIVEC and the Portuguese Chamber of Commerce and Industry) were contacted by phone and e-mail to request help sharing the form among its associates. Due to the shortage of responses, a second distribution stage ensued which involved searching for databases and directories of companies from other associations and institutions. From there a self-made database was created with a list of enterprises that tried to comply with the requirements of internationalized SMEs which was not always possible to identify the ones that fitted the target of this study. The firms' contacts were mainly gathered from Portugal Global, the Portuguese Chamber of Commerce and Industry and CIP.

In total, 8250 companies were emailed the form link and asked to participate in the study. Although, from this number, 656 emails returned as "failed to be delivered", narrowing the number of possible participants to 7594. The form was closed after almost three months with a sample size of 312 responses. After checking each response attentively, it was possible to validate 309 answers because some firms did not comply the internationalization requirement. Thus, the effective response rate is approximately 4.07%. These lower response rates are common with online surveys especially when addressing companies that are not commonly open to sharing information. Additionally, the inquirer is someone who is unknown and external to the firm and the topic of this research is, also, a delicate and recent subject for companies.

After the process of gathering and organizing the data, the statistical analysis was performed in order to interpret the information and verify the research hypothesis. The analysis of the data collected was completed with resort to the software program, SPSS. There were three different types of analysis applied: parametric paired t-test, non-parametric chi-square test and multiple linear regression.

For the first hypothesis, a paired t-test was implemented to measure the effect of the pandemic before (2019) and during (2020). The variables used to compute this were proportion of international sales on the firm's business volume in 2020 and 2019.

For the second hypothesis, a multiple linear regression analysis was implemented to measure the effect of the proportion of international sales on the firm's business volume in 2020 according to the firm's size and the proportion of international sales in 2019. The variables used to compute this were proportion of international sales in 2019 and 2020 and

firm's size which is a qualitative variable with categories, therefore, dummy variables had to be created.

For the third hypothesis, a multiple linear regression analysis was implemented to measure the effect of the proportion of international sales in 2020 according to the firm's location and psychic distance. The variables used to compute this were proportion of international sales in 2020, cultural distance during the pandemic and firm's location which is a qualitative variable with categories, therefore, dummy variables had to be created.

For the fourth hypothesis, a chi-square test was implemented to measure the effect of the before and during the pandemic in terms of the markets the firm was operating in. The variables used to compute this were choice of Europe as an exporting market before and during the pandemic.

For the fifth hypothesis, a multiple linear regression analysis was implemented to measure the effect of the proportion of international sales on the firm's business volume in 2020 according to the firm's internationalization strategy. The variables used to compute this were proportion of international sales in 2020 and firm's internationalization strategy which is a qualitative variable with categories, therefore, dummy variables had to be created.

For the sixth hypothesis, a chi-square test was implemented to measure the effect of firm's activity sector and the firm facing more risks because of it with the pandemic. The variables used to compute this were firm's activity sector and the firm facing more risks with the pandemic.

For the seventh hypothesis, a chi-square test was implemented to measure the effect of the limitations the firm had before the pandemic and during the pandemic. The variables used to compute this were lack of demand, cultural distance, unfavorable international regulations, exchange rate/ price fluctuations, exportation costs/risks, political/economic instability, market uncertainty, limited/lack of resources, lack of know-how, lack of capital and lack of capacity (before and during the pandemic).

For the eighth hypothesis, a chi-square test was implemented to measure the effect of the firm's main external and internal motivation factors to internationalize before and during the pandemic. The variables used to compute this were technological and innovative breakthroughs, government exportation support programs, firm's product/service innovation,

excess capacity, firm's know-how, firm's global network, firm's other sources of competitive advantage, national market saturation and foreign market opportunities

For the ninth hypothesis, a multiple linear regression analysis was implemented to measure the effect of firm's business volume in 2020 according to the firm's business volume in 2019, proportion of international sales in 2019 and proportion of international sales in 2020. The variables used to compute this were firm's business volume in 2020 and 2019 and proportion of international sales in 2019 and 2020.

For the tenth hypothesis, a multiple linear regression analysis was implemented to measure the effect of the proportion of international sales on the firm's business volume in 2020 according to the number of years a firm is operating abroad. The variables used to compute this were proportion of international sales in 2020 and number of years a firm is operating abroad which is a qualitative variable with categories, therefore, dummy variables had to be created.

For the eleventh hypothesis, a multiple linear regression analysis was implemented to measure the effect of the firm's business volume in 2020 according to whether the firm believed it benefited from digitalization (level of agreement) during the pandemic. The variables used to compute this were firm's business volume in 2020 and firm believed it benefited from digitalization which is a qualitative variable with categories, therefore, dummy variables had to be created.

From the questionnaire responses, it is possible to give a brief description of the sample firms. The study sample consists of 86 micro (27,6%), 133 small (42,6%) and 93 medium enterprises (29,8%). Of these, 147 were from the industry sector (47,1%), 125 were service firms (40,1%) and 40 were commerce/trade firms (12,8%).

In the year of 2020, the turnover was between 2M and 9.9M€ for 31,7% of the companies, 17,3% had a turnover of 1M to 1.9M€, 15,7% ended the year with 250 thousand to 999 thousand euros, 10,3% achieved between 10M to 50M€, 8,3% did not answer/did not know, 7,1% accomplished a turnover of 100 thousand to 249 thousand euros. 1,9% had a business volume of over 50M€. Even though this percentage does not fit the concept of SME, it can still be used for this study since they have been considered in other studies as it has been proven that internationalized SMEs tend to have a larger dimension than non-internationalized SMEs (Statistics Portugal *in* Portuguese Chamber of Commerce and Industry, 2020). The

remaining 7,7% closed 2020 with a turnover below 99 thousand euros. For the same year, the proportion of international sales on the firm's business volume were 0%-15% for 37,2% of the firms and 16%-30% for 16% of the firms. 9,6% of the sample had a proportion of 31%-45% and 37,2% of the firms obtained a proportion of over 46%.

The geographic distribution of the sample is mostly centered in Lisbon (33%), Porto (18,9%), Aveiro (12,2%), Braga (10,9%) and Leiria (8,7%). 16,3% of the firms are located in Santarém (2,9%), Castelo Branco (1%), Coimbra (1%), Viseu (2,6%), Bragança (0,6%), Vila Real (0,6%), Viana do Castelo (0,6%), Madeira (0,3%), Faro (1%), Beja (0,6%), Évora (1%), Setúbal (3,8%) and Portalegre (0,3%).

51,6% of the SME sample have been internationalized for more than 10 years, 18,6% have been operating abroad for 6 to 10 years, 17,3% are international players for 3 to 5 years and 12,5% have been following the internationalization path for 1 to 2 years.

Currently, 91,7% of the SMEs inquired are present in Europe. 34,9% operate in Africa, 26,3% expanded to North America and 22,4% to South America. Asia is a chosen market for 24% of the sample. Lastly, 5,4% decided to invest in Oceanian markets. The sample's internationalization strategy is divided into direct export (47,8%), cooperation with another firm (28,5%), direct entry (14,7%), indirect entry (1,3%) and electronic marketing (7,7%). This information is indicated in the figures 1 to 8 which can be accessible on Annex C.

CHAPTER 3

RESEARCH RESULTS AND FINDINGS

Discussion of Hypothesis 1:

Internationalization is vital for some SMEs to survive during the pandemic.

When analyzing the linear association between the proportion of international sales on the firm's business volume in 2020 and 2019 (Table 2, Annex D), we can conclude that they are correlated because $\text{sig}=0,000$ which means that the correlation between the variables is significantly different from zero. In addition, the correlation points out to a strong positive relationship ($r=0,879$). To assess our hypothesis, we need to test if the average proportion of international sales on the firm's business volume in 2020 is equal to the proportion of international sales on the firm's business volume in 2019 ($\mu_D = \mu_1 - \mu_2$). In other words, we want to know if the average difference between both variables is equal to zero ($H_0: \mu_D = 0$ vs $H_1: \mu_D \neq 0$). To evaluate this, a parametric Paired T-test is applied. Considering that the sample dimension is 309 ($n>30$), therefore, the Central Limit Theorem (CLT) is considered to ensure the approximate Normality.

The results of the paired t-test revealed that the $p\text{-value}=0,000<0,05=\alpha$, thus, H_0 is rejected, meaning that the average difference between the proportion of international sales on the firm's business volume in 2020 and 2019 is not zero. Hence, the average proportion of international sales on the firm's business volume in 2020 is different from the average proportion of international sales on the firm's business volume in 2019. Moreover, the sample data shows (Table 3, Annex D) that the average proportion of international sales on the firm's business volume in 2020 was lower than the average proportion of international sales on the firm's business volume in 2019.

In conclusion, Internationalization played a more active role before the pandemic than during it, consequently not confirming the first hypothesis.

Discussion of Hypothesis 2:

Firm’s size limit SMEs when internationalizing, even more during this period.

The aim is to explain the proportion of international sales on the firm’s business volume in 2020 according to the firm size and the proportion of international sales in 2019. Firm’s size is a qualitative variable with 3 categories (1-Micro, 2- Small, 3-Medium) which originated 2 dummy variables. For the reference category, the first category was used, ‘Micro’. To understand the relationship between the variables, a multiple linear regression analysis was carried out.

First stage was to estimate the Multiple Linear Regression Model (MLRM) using OLS (Ordinary Least Squares). The model estimated is given by the equation:

$$\text{Proportion of international sales 2020} = \beta_0 + \beta_1 * \text{proportion of international sales 2019} + \beta_2 * \text{Small} + \beta_3 * \text{Medium} + \epsilon$$

From the results of the analysis, it can be concluded that 78% of the variability of Proportion of international sales 2020 is explained by the set of independent variables through the MLRM (Table 6, Annex D). Table 3.1 introduces the test results of the model regression coefficients of the independent variables.

Table 3.1: Coefficients table of the independent variables Small, Medium and Proportion of international sales 2019

		Coefficients ^a					Collinearity Statistics	
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Tolerance	VIF
		B	Std. Error	Beta				
1	(Constant)	-.840	2,041		-.412	,681		
	In 2019, before the pandemic, what was the proportion of international sales on the firm's business volume?	,861	,027	,863	31,510	,000	,961	1,041
	Small dummy variable	4,335	2,144	,066	2,022	,044	,685	1,460
	Medium dummy variable	7,422	2,356	,104	3,151	,002	,663	1,509

a. Dependent Variable: In 2020, with the pandemic, what was the proportion of international sales on the firm's business volume?

Coefficients of the variables small, medium and proportion of international sales 2019 of the model are significant. Sig< 0,05 allows to reject the hypothesis that a coefficient is equal to zero, thus, there is statistical evidence that these variables introduced in the model help explain the proportion of international sales 2020. In addition, the Beta coefficients show that the proportion of international sales in 2019 is the variable that better predicts the proportion of international sales 2020 and that within the categories of firm’s size, medium firms contributed more to the proportion of international sales in 2020 than other firm sizes.

The equation of the fitted regression model is

Proportion of international sales in 2020 = $-0,840 + 0,861$ proportion of international sales in 2019 + 4,335 Small + 7,422 Medium

If the firm is small, the model to be estimated is

Proportion of international sales in 2020 = $(-0,840 + 4,335) + 0,861$ proportion of international sales in 2019

If the firm is medium, the model to be estimated is

Proportion of international sales in 2020 = $(-0,840 + 7,422) + 0,861$ proportion of international sales in 2019

If the firm is micro, the model to be estimated is

Proportion of international sales in 2020 = $-0,840 + 0,861$ proportion of international sales in 2019

The last step of the Multiple Linear Regression analysis is to check the assumptions on the Multiple Linear Regression Model: 1) The relationship between each independent variables and the dependent variable is linear and there is an error component (ϵ); 2) Residuals have mean zero (Table 8, Annex D); 3) The independent variables are not correlated with the residuals (Table 9, Annex D); 4) Durbin-Watson statistical value is 1,979 so the residuals are independent (Table 6, Annex D); 5) The scatterplot (Graph 1, Annex D) indicates that residuals seem to keep an approximately constant distance from the horizontal axis so residuals have constant variance; 6) The Residuals Q-Q Plot (Graph 2, Annex D) shows that the deviation from the curve is not too strong, so, it is possible to assume that residuals follow a normal distribution; 7) All independent variables had VIF < 10 and TOL > 0,1 so there is no multicollinearity (Table 3.1).

From the model, the most important interpretations to validate H2 are:

- If the proportion of international sales in 2019 is constant, the proportion of international sales in 2020 is, on average, 4,335 higher in small firms than micro firms.
- If the proportion of international sales in 2019 is constant, the proportion of international sales in 2020 is, on average, 7,422 higher in medium firms than micro firms.

- Consequently, if the proportion of international sales in 2019 is constant, micro firms contribute the least to the proportion of international sales in 2020.

To conclude, SMEs with bigger dimensions had positive and bigger impacts on the proportion of international sales during the pandemic than smaller sized firms. In other words, smaller internationalized SMEs faced more limitations during the pandemic. Also, considering the correlation matrix (Table 4, Annex D), firm's size had a more significant correlation with the proportion of international sales in 2020 than in 2019 which means that firm's size influenced the internationalized SMEs even more during the pandemic. Summing up, H2 is confirmed.

Discussion of Hypothesis 3:

Firm's location and psychic distance are two factors that limit the firm during the pandemic.

The goal is to explain the proportion of international sales in 2020 according to the firm's location and psychic distance. Firm's location is a qualitative variable with 4 categories (1-North, 2- Center, 3-South, 4-Islands) which originated 3 dummy variables. For the reference category, the category 'Center' was used. To understand the relationship between the variables, a multiple linear regression analysis was conducted. Firstly, the Multiple Linear Regression Model (MLRM) using OLS (Ordinary Least Squares) was estimated. The model estimated is given by the equation:

$$\text{Proportion of international sales 2020} = \beta_0 + \beta_1 * \text{Cultural Distance during the pandemic} + \beta_2 * \text{North} + \beta_3 * \text{South} + \beta_4 * \text{Islands} + \varepsilon$$

From the results of the analysis, it can be concluded that only 2,2% of the variability of Proportion of international sales 2020 is explained by the set of independent variables through the MLRM (Table 11, Annex D).

Table 3.2 introduces the test results of the model regression coefficients of the independent variables.

Table 3.2: Coefficients table of the independent variables cultural Distance during the pandemic, North, South and Islands

		Coefficients ^a						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	43,791	2,753		15,908	,000		
	Do these factors still restrict the firm's international operations with the pandemic? Cultural distance	-7,880	7,388	-,061	-1,067	,287	,993	1,007
	South dummy variable	-2,363	7,621	-,018	-,310	,757	,933	1,072
	Islands dummy variable	-28,791	32,681	-,050	-,881	,379	,996	1,004
	North dummy variable	7,989	3,848	,122	2,076	,039	,932	1,073

a. Dependent Variable: In 2020, with the pandemic, what was the proportion of international sales on the firm's business volume?

The Coefficients table shows that the only variable with $\text{sig} < 0,05$ is North but its magnitude to explain proportion of international sales in 2020 is still low (Standardized coefficients=0,122). This represents that if cultural distance during the pandemic is constant, the proportion of international sales in 2020 is, on average, 7,989 higher if the firm is located in the North than in the Center.

This means that a firm located in the North has a bigger business volume due to its internationalization, when compared to a firm that is located in the Center.

Thus, H3 is rejected because the firm's location did not limit the firm during the pandemic and psychic distance was not important when considering the proportion of international sales on the firm's business volume in 2020.

Discussion of Hypothesis 4:

Europe is the most substantial market for Portuguese SMEs during the pandemic.

The aim is to assess if the markets the firm is operating in differs before and during the pandemic. Specifically, if the European market was the most substantial market before and during this period.

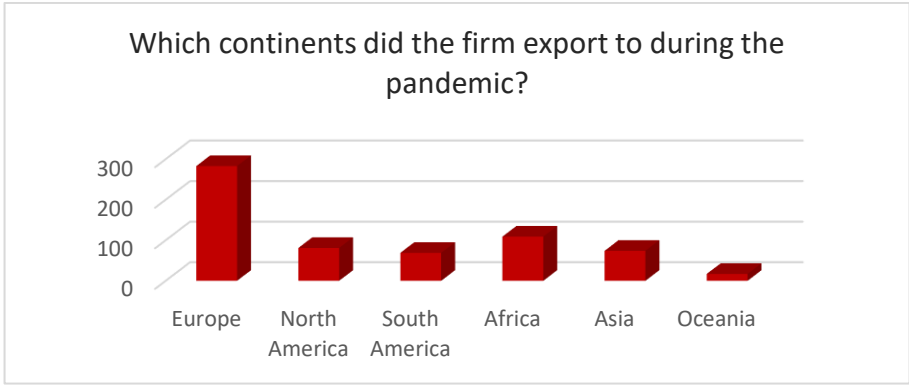
To confirm this hypothesis, Fisher's exact test was performed to check the independence of both variables. One of the conditions to apply the Chi-square test of independence was not verified, namely, one cell which accounts for 25% has an expected count of less than 5. Considering that Chi-square test could not be applied, Fisher's exact test was used (Table 13, Annex D). Based on the results of the test ($p=0,000 < 0,05$), we reject the hypothesis that Europe being a market before the pandemic is independent from Europe being a market during the pandemic, therefore, there is a significant relationship between them.

The following crosstabulation shows that the majority of the sample, 90.9%, exported to Europe before the pandemic while 9.1% of firms did not. During the pandemic, the number of sample firms that chose Europe as an exporting market grew to 91.6%.

Table 3.3: Choice of Europe as an exporting market before and during the pandemic
Crosstabulation

Which continents did the firm export to before the pandemic? Europe * Which continents did the firm export to during the pandemic? Europe Crosstabulation

			Which continents did the firm export to during the pandemic? Europe		Total
			No	Yes	
Which continents did the firm export to before the pandemic? Europe	No	Expected Count	2,4	25,6	28,0
		% within Which continents did the firm export to before the pandemic? Europe	89,3%	10,7%	100,0%
		% within Which continents did the firm export to during the pandemic? Europe	96,2%	1,1%	9,1%
	Yes	Expected Count	23,6	257,4	281,0
		% within Which continents did the firm export to before the pandemic? Europe	0,4%	99,6%	100,0%
		% within Which continents did the firm export to during the pandemic? Europe	3,8%	98,9%	90,9%
Total	Expected Count	26,0	283,0	309,0	
	% within Which continents did the firm export to before the pandemic? Europe	8,4%	91,6%	100,0%	
	% within Which continents did the firm export to during the pandemic? Europe	100,0%	100,0%	100,0%	



Graph 3.1: Continents the sample firms exported to, during the pandemic

In conclusion, based on Table 3.3 and Graph 3.1, we verify H4 that Europe was the most substantial market for the participant firms before and even more during the pandemic.

Discussion of Hypothesis 5:

Electronic marketing was the most important mode of internationalization for SMEs during this period.

The main purpose is to explain the proportion of international sales on the firm’s business volume in 2020 according to the firm’s internationalization strategy. Firm’s internationalization strategy is a qualitative variable with 5 categories (1-Direct export, 2-Cooperation with another firm, 3-Direct entry, 4-Indirect entry, 5- Electronic marketing) which originated 4 dummy variables. For the reference category, the category ‘Direct Entry’ was used. To understand the relationship between the variables, a multiple linear regression analysis was performed.

The first step was to estimate the Multiple Linear Regression Model (MLRM) using OLS (Ordinary Least Squares). The model estimated is given by the equation:

$$\text{Proportion of international sales 2020} = \beta_0 + \beta_1 * \text{Direct export} + \beta_2 * \text{cooperation with another firm} + \beta_3 * \text{indirect entry} + \beta_4 * \text{electronic marketing} + \varepsilon$$

From the results of the analysis, it can be concluded that 11,2% of the variability of Proportion of international sales 2020 is explained by the set of independent variables through the MLRM (Table 15, Annex D). Table 3.4 introduces the test results of the model regression coefficients of the independent variables.

Table 3.4: Coefficients table of the independent variables direct export, cooperation with another firm, indirect entry and electronic marketing

		Coefficients ^a						
		Unstandardized Coefficients		Standardized Coefficients			Collinearity Statistics	
Model		B	Std. Error	Beta	t	Sig.	Tolerance	VIF
1	(Constant)	36,444	4,625		7,881	,000		
	Direct Export dummy variable	21,495	5,281	,329	4,070	,000	,447	2,235
	Cooperation with another firm dummy	-,546	5,675	-,008	-,096	,923	,472	2,120
	Indirect Entry dummy variable	-13,944	16,186	-,048	-,862	,390	,930	1,075
	Electronic Marketing dummy variable	3,990	7,952	,032	,502	,616	,715	1,399

a. Dependent Variable: In 2020, with the pandemic, what was the proportion of international sales on the firm's business volume?

Coefficient of the variable Direct export of the model is the only significant one (sig=0,000< 0,05), thus, there is statistical evidence that this is the only variable introduced in the model which helps explain the proportion of international sales in 2020.

The equation of the fitted regression model can be written as

$$\text{Proportion of international sales 2020} = 36,444 + 21,495 * \text{Direct export} - 0,546 * \text{cooperation with another firm} - 13,944 * \text{indirect entry} + 3,990 * \text{electronic marketing}$$

The last step of the Multiple Linear Regression analysis is to check the assumptions on the Multiple Linear Regression Model: 1) The relationship between each independent variables and the dependent variable is linear and there is an error component (ϵ); 2) Residuals have mean zero (Table 17, Annex D); 3) The independent variables are not correlated with the residuals (Table 18, Annex D); 4) Durbin-Watson statistical value is 1,974 so the residuals are independent (Table 15, Annex D); 5) The scatterplot (Graph 3, Annex D) indicates that residuals seem to keep an approximately constant distance from the horizontal axis so residuals have constant variance; 6) The Residuals Q-Q Plot (Graph 4, Annex D) shows that the deviation from the curve is not too strong, so, it is possible to assume that residuals follow a normal distribution; 7) All independent variables had VIF < 10 and TOL > 0,1 so there is no multicollinearity (Table 3.4).

The most important interpretation from the model is that, on average, the proportion of international sales in 2020 is 21,495 higher if the firm has adopted direct export as its internationalization strategy rather than direct entry. In addition, direct export is the only statistically significant internationalization strategy to explain the proportion of international sales in 2020. In conclusion, H5 is not verified considering that direct export was the most important internationalization mode for SMEs during the pandemic.

Discussion of Hypothesis 6:

Service firms face higher risks than other activity sector firms.

The aim is to test if there is a relationship between the firm's activity sector and the firm facing more risks because of it with the pandemic. Specifically, if the service firms had to handle more risks than other activity sectors during the pandemic.

To confirm this hypothesis, Chi-Square test of independence was performed to check the independence of both variables (Table 19, Annex D). All of the conditions to apply the Chi-square test of independence were verified. Based on the results of the test ($p=0,677 > 0,05$),

we do not reject the hypothesis that the firm’s activity sector is independent from the firm facing more risks because of it with the pandemic, therefore, there is no significant relationship between them. The following crosstabulation supports this.

Table 3.5: Firm’s activity sector and the firm facing more risks with the pandemic Crosstabulation

Do you believe the firm faced more risks because of its activity sector, with the pandemic? * What is the firm's activity sector? Crosstabulation

			What is the firm's activity sector?			Total
			Services	Industry	Commerce	
Do you believe the firm faced more risks because of its activity sector, with the pandemic?	No	Expected Count	50,4	57,2	16,4	124,0
		% within Do you believe the firm faced more risks because of its activity sector, with the pandemic?	43,5%	44,4%	12,1%	100,0%
		% within What is the firm's activity sector?	45,0%	40,4%	38,5%	42,0%
	Yes	Expected Count	69,6	78,8	22,6	171,0
		% within Do you believe the firm faced more risks because of its activity sector, with the pandemic?	38,6%	47,4%	14,0%	100,0%
		% within What is the firm's activity sector?	55,0%	59,6%	61,5%	58,0%
Total	Expected Count	120,0	136,0	39,0	295,0	
	% within Do you believe the firm faced more risks because of its activity sector, with the pandemic?	40,7%	46,1%	13,2%	100,0%	
	% within What is the firm's activity sector?	100,0%	100,0%	100,0%	100,0%	

Although more firms (58%) claimed to face more risks with the pandemic due to its activity sector, there is no statistical significance between the firm’s activity sector and the firm facing more risks because of it with the pandemic.

Furthermore, the crosstabulation reveals that the industry sector felt the most restricted by its activity sector during the pandemic (47,4%), compared to the service sector (38,6%) and commerce sector (14%). In conclusion, we reject H6.

Discussion of Hypothesis 7:

With the pandemic, new restrictions (limitations) arose from the occasion.

The objective is to test if there are any relationships between the limitations the firm had before the pandemic and with the pandemic. The limitations are lack of demand, cultural distance, unfavorable international regulations, exchange rate/ price fluctuations, exportation costs/risks, political/economic instability, market uncertainty, limited/lack of resources, lack of know-how, lack of capital and lack of capacity.

Chi-Square tests of independence were performed for each set of variables (before and during the pandemic) to check the independence of both. All of the conditions to apply the Chi-square tests of independence were verified for the variables lack of demand, exchange rate/ price fluctuations, exportation costs/risks, political/economic instability, market uncertainty, limited/lack of resources and lack of capital. Contrarily, the variables cultural distance, unfavorable international regulations, lack of know-how and lack of capacity did not comply with one or more conditions to apply the Chi-square test of independence, therefore, Fisher's exact tests were used.

Based on the results of the tests, all $\text{sig}=0,000 < 0,05$, thus, we reject the hypothesis that the limitation variables before the pandemic are independent from the limitation variables during the pandemic, so, there is a significant relationship between them.

The crosstabulations and the results of the Chi-square tests for each set of variables (Tables 20 to 41, Annex D), give insights on which of the limitation variables had a bigger impact on the sample firms. The main interpretations from these crosstabulations are:

- Unfavorable international regulations and limited/lack of resources limitations increased slightly during the pandemic.
- Cultural distance, exchange rate/ price fluctuations, exportation costs/risks, lack of know-how, lack of capital and lack of capacity were less frequent limitations during the pandemic.
- Lack of demand, political/economic instability and market uncertainty were the limitations which increased the most with the pandemic.

Besides lack of demand, political/economic instability and market uncertainty, sample firms disclosed other restraining factors which arose during this period, enumerated below:

More competition, confinements, cost control to survive, customer insolvency, delays in the delivery of raw materials, difficulty getting new customers and hiring qualified labor force, excessive tax burden, higher costs with raw materials and transportation costs, impossibility to attend international fairs and other events, international markets closed, lack of access to credits, lack of investment and raw materials, limited customer contact, logistic limitations, new products/project in standby, remote work and travel restrictions.

In conclusion, H7 is validated, there were new limitations arising from the occasion.

Discussion of Hypothesis 8:

Despite limitations imposed by the pandemic, SMEs were able to identify new growth opportunities.

The purpose is to test if there is a relationship between the firm's main external and internal motivation factors to internationalize before and during the pandemic. Basically, the goal is to understand whether the factors which led the firm to internationalize and keep internationalizing before the pandemic remained during this phase. The motivation factors retrieved from the literature and used for this research were technological and innovative breakthroughs, government exportation support programs, firm's product/service innovation, excess capacity, firm's know-how, firm's global network, firm's other sources of competitive advantage, national market saturation and foreign market opportunities.

Chi-Square tests of independence were performed for national market saturation, foreign market opportunities, firm's product/service innovation, firm's know-how, firm's global network and firm's other sources of competitive advantage to check their independence before and during the pandemic. The remaining variables did not comply with all the conditions to apply the Chi-square tests, thus, Fisher's exact tests were implemented to check independence (Tables 42 to 50, Annex D).

Based on the outputs of the tests, all $\text{sig} > 0,05$ with exception of the variable firm's global network, therefore, we do not reject the hypothesis that the firm's main external and internal motivation factors to internationalize before the pandemic are independent from the firm's main external and internal motivation factors to internationalize during the pandemic, so, there is no significant relationship between them, excluding the variable firm's global network.

The crosstabulation below shows that from the 82 (28.8%) participant firms which selected having a global network as a motivation to internationalize or keep internationalizing before the pandemic, 73 (81.7%) still believe that this factor is an internationalization motivator during this period.

Table 3.6: Firm's global network before and during the pandemic Crosstabulation

		Crosstab		
		Did the aforementioned factors change during the pandemic?		Total
What were the main internal motivation factors that caused the firm to internationalize? Firm's global network	No	Yes		
	No	Expected Count	180,9	22,1
% within What were the main internal motivation factors that caused the firm to internationalize? Firm's global network		92,1%	7,9%	100,0%
% within Did the aforementioned factors change during the pandemic?		73,6%	51,6%	71,2%
Expected Count		73,1	8,9	82,0
% within What were the main internal motivation factors that caused the firm to internationalize? Firm's global network		81,7%	18,3%	100,0%
% within Did the aforementioned factors change during the pandemic?		26,4%	48,4%	28,8%
Total	Expected Count	254,0	31,0	285,0
	% within What were the main internal motivation factors that caused the firm to internationalize? Firm's global network	89,1%	10,9%	100,0%
	% within Did the aforementioned factors change during the pandemic?	100,0%	100,0%	100,0%

Furthermore, the firms which acknowledged that the internationalization motivating factors were different before and during the pandemic, listed new opportunities that resulted from it. Some examples worth emphasizing are less excess capacity, new product development, new services, projects and distribution/ sales channels, higher online sales, less time and less accommodation, travel and other expenses which can be invested in new work tools, approaches, marketing tools, etc., increased demand for some firms because of its business core and production problems, new investors for the country, remote access to new and potential customers as companies have become more open, accepting and trusting of remote work, competition bankruptcy that gave the firms the opportunity to keep their customers, partnerships with companies in other countries, exploration of different markets since each market had different limitations at different times, business, market and risk diversification which generated new business opportunities that guarantee the companies sustainability and helped reduce costs, greater possibility of internationalization considering that the domestic market did not suffice and there was a digitalization transformation. Lastly, the ease with which a product / service can be presented, with the appropriate digital tools, favoring the company's internationalization.

Summarizing, H8 is verified, the pandemic generated new stimulators for internationalizing.

Discussion of Hypothesis 9:

International operations' representativeness in SMEs' business volume decreased during the pandemic.

The goal is to explain the firm's business volume in 2020 according to the firm's business volume in 2019, proportion of international sales in 2019 and proportion of international sales in 2020. To understand the relationship between the variables, a multiple linear regression analysis was conducted.

The scatterplot (Graph 5, Annex D) and correlation matrix (Table 51, Annex D) suggest a positive strong correlation between the proportion of international sales for the years of 2019 and 2020 ($r = +0,879$) and between the firm's business volume in 2019 and 2020 ($r = +0,910$) respectively. Also, there is a weaker correlation between the firm's business volume in 2019 and the proportion of international sales in 2020 ($r = +0,138$).

The second step was to estimate the Multiple Linear Regression Model (MLRM) using OLS (Ordinary Least Squares). The model estimated is given by the equation:

$$\text{Firm's business volume in 2020} = \beta_0 + \beta_1 * \text{firm's business volume in 2019} + \beta_2 * \text{proportion of international sales in 2019} + \beta_3 * \text{proportion of international sales in 2020} + \varepsilon$$

From the results of the analysis, it can be concluded that 83% of the variability of Firm's business volume in 2020 is explained by the set of independent variables through the MLRM (Table 53, Annex D). Table 3.7 introduces the test results of the model regression coefficients of the independent variables.

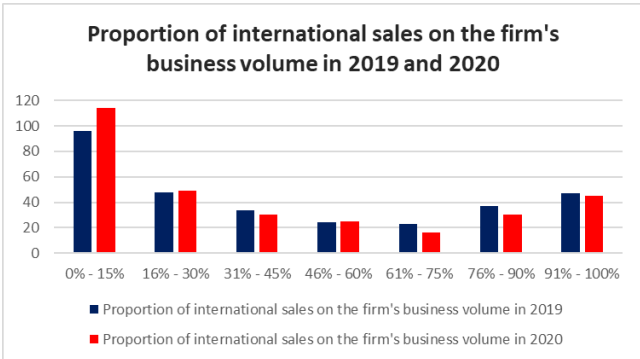
Table 3.7: Coefficients table of the independent variables firm's business volume in 2019, proportion of international sales in 2019 and proportion of international sales in 2020

		Coefficients ^a					Collinearity Statistics	
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Tolerance	VIF
		B	Std. Error	Beta				
1	(Constant)	1,348	,928		1,450	,148		
	Before the pandemic, what was the firm's business volume in 2019?	,885	,024	,912	36,598	,000	,980	1,021
	In 2019, before the pandemic, what was the proportion of international sales on the firm's business volume?	-,061	,033	-,101	-1,846	,066	,203	4,927
	In 2020, with the pandemic, what was the proportion of international sales on the firm's business volume?	,040	,033	,066	1,210	,227	,202	4,961

a. Dependent Variable: With the pandemic, what was the firm's business volume in 2020?

The table shows that the coefficients of the variables proportion of international sales in 2019 and proportion of international sales in 2020 of the model are not significant ($\text{sig} > 0,05$), thus, there is no statistical evidence that these variables introduced in the model contribute to explain the firm’s business volume in 2020. This means that internationalization did not have a significant representativeness in the firm’s business volume in 2020. Therefore, there is no need to continue the MLRM estimation as we have confirmed that the main variables needed to verify H9 are not statistically significant.

Nevertheless, the following computed graph reveals that there was an overall slight decrease on the proportion of international sales on the firm's business volume in 2020 compared to 2019.



Graph 3.2: Comparison between the proportion of international sales on the firm's business volume in 2019 and 2020

In conclusion, international operations’ representativeness in SMEs’ business volume decreased during the pandemic, although it was a slight reduction. Thus, we can validate H9.

Discussion of Hypothesis 10:

The number of years a firm is operating abroad, allows them to continue their international activity.

The main objective is to explain the proportion of international sales on the firm’s business volume in 2020 according to the number of years a firm is operating abroad. The number of years a firm is operating abroad is a qualitative variable with 4 categories (1- 1 to 2 years, 2- 3 to 5 years, 3- 6 to 10 years, 4- More than 10 years) which originated 3 dummy variables. For the reference category, the category ‘1 to 2 years’ was used. To understand the relationship between the variables, a multiple linear regression analysis was performed.

The first step was to estimate the Multiple Linear Regression Model (MLRM) using OLS (Ordinary Least Squares). The model estimated is given by the equation:

$$\text{Proportion of international sales 2020} = \beta_0 + \beta_1 * \text{3 to 5 years} + \beta_2 * \text{6 to 10 years} + \beta_3 * \text{More than 10 years} + \varepsilon$$

From the results of the analysis, it can be concluded that 17,4% of the variability of Proportion of international sales 2020 is explained by the set of independent variables through the MLRM (Table 56, Annex D).

Table 3.8 introduces the test results of the model regression coefficients of the independent variables.

Table 3.8: Coefficients table of the independent variables 3 to 5 years, 6 to 10 years and More than 10 years

Model		Coefficients ^a					Collinearity Statistics	
		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Tolerance	VIF
		B	Std. Error	Beta				
1	(Constant)	20,921	4,847		4,317	,000		
	3 to 5 years dummy	16,672	6,326	,194	2,635	,009	,501	1,998
	6 to 10 years dummy	17,613	6,235	,211	2,825	,005	,487	2,052
	More than 10 years dummy	38,010	5,395	,582	7,046	,000	,397	2,517

a. Dependent Variable: In 2020, with the pandemic, what was the proportion of international sales on the firm's business volume?

Coefficients of the variables 3 to 5 years, 6 to 10 years and more than 10 years of the model are significant (sig < 0,05), thus, there is statistical evidence that these variables introduced in the model help explain the proportion of international sales 2020. In addition, the Beta coefficients show that more than 10 years is the variable that better predicts the proportion of international sales in 2020 meaning that firms internationalized for more than 10 years contributed more to the proportion of international sales in 2020 than firms internationalized for less years. The equation of the fitted regression model is

$$\text{Proportion of international sales 2020} = 20,921 + 16,672 * \text{3 to 5 years} + 17,613 * \text{6 to 10 years} + 38,010 * \text{More than 10 years}$$

If the firm is internationalized for 1 to 2 years, the model to be estimated is

$$\text{Proportion of international sales 2020} = 20,921$$

If the firm is internationalized for 3 to 5 years, the model to be estimated is

$$\text{Proportion of international sales 2020} = 20,921 + 16,672$$

If the firm is internationalized for 6 to 10 years, the model to be estimated is

$$\text{Proportion of international sales 2020} = 20,921 + 17,613$$

If the firm is internationalized for more than 10 years, the model to be estimated is

$$\text{Proportion of international sales 2020} = 20,921 + 38,010$$

The last step of the Multiple Linear Regression analysis is to check the assumptions on the Multiple Linear Regression Model: 1) The relationship between each independent variables and the dependent variable is linear and there is an error component (ε); 2) Residuals have mean zero (Table 58, Annex D); 3) The independent variables are not correlated with the residuals (Table 59, Annex D); 4) Durbin-Watson statistical value is 1,975 so the residuals are independent (Table 56, Annex D); 5) The scatterplot (Graph 6, Annex D) indicates that residuals seem to keep an approximately constant distance from the horizontal axis so residuals have constant variance; 6) The Residuals Q-Q Plot (Graph 7, Annex D) shows that the deviation from the curve is not too strong, so, it is possible to assume that residuals follow a normal distribution; 7) All independent variables had $VIF < 10$ and $TOL > 0,1$ so there is no multicollinearity (Table 3.8).

From the model, it is possible to conclude that the higher the number of years a firm has been operating abroad, the higher was the proportion of international sales on the firm's business volume during the pandemic. The model also shows that the firms which have been internationalized for more than 10 years, had the highest international sales, during the pandemic, compared to firms that have been internationalized for shorter periods. Accordingly, H10 can be validated.

Discussion of Hypothesis 11:

Digital factor benefited internationalized SMEs even more.

The aim is to explain the firm's business volume in 2020 according to whether the firm believed it benefited from digitalization (level of agreement) during the pandemic. Firm

believed it benefited from digitalization is a qualitative variable with 5 categories (1- Strongly disagree, 2- Disagree, 3- Neither agree nor disagree, 4- Agree, 5- Strongly agree) which originated 4 dummy variables. For the reference category, the category ‘Disagree’ was used. To understand the relationship between the variables, a multiple linear regression analysis was conducted. To confirm if there is any significant relationship between both variables, the Multiple Linear Regression Model (MLRM) using OLS (Ordinary Least Squares) is estimated.

The model estimated is given by the equation:

$$\text{Firm's business volume in 2020} = \beta_0 + \beta_1 * \text{Strongly disagree} + \beta_2 * \text{Neither agree nor disagree} + \beta_3 * \text{Agree} + \beta_4 * \text{Strongly agree} + \varepsilon$$

From the results of the analysis, it can be concluded that only 1,8% of the variability of firm’s business volume in 2020 is explained by the set of independent variables through the MLRM (Table 61, Annex D). Table 3.9 introduces the test results of the model regression coefficients of the independent variables.

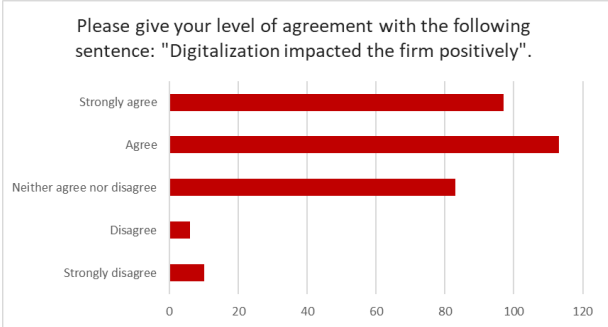
Table 3.9: Coefficients table of the independent variables Strongly disagree, Neither agree nor disagree, Agree and Strongly agree

		Coefficients ^a							
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics		
		B	Std. Error	Beta			Tolerance	VIF	
1	(Constant)	6,000	8,059		,744	,457			
	Strongly Disagree dummy	-2,875	10,195	-,027	-,282	,778	,389	2,573	
	Neither agree nor disagree dummy	3,261	8,360	,074	,390	,697	,098	10,226	
	Agree dummy	7,734	8,280	,190	,934	,351	,085	11,775	
	Strongly agree dummy	7,084	8,353	,162	,848	,397	,096	10,364	

a. Dependent Variable: With the pandemic, what was the firm's business volume in 2020?

The Coefficients table confirms this. None of the variables of the model are significant (All sig>0,05), therefore, these variables introduced in the model do not help explain the firm’s business volume in 2020. This means that there is no statistical significance between the firm’s business volume in 2020 and the firm believing it benefited from digitalization during the pandemic. Thus, there is no need to continue the MLRM estimation.

Nonetheless, the graph below acknowledges that more than half of the sample firms agreed or strongly agreed that digitalization impacted the firm positively.



Graph 3.3: Level of agreement on: "Digitalization impacted the firm positively"

To sum up, H11 is verified since the majority of the firms considered that the digital factor benefited them during the pandemic.

Table 3.10: Summary of all hypothesis' validation

<i>Hypothesis</i>	H1	H2	H3	H4	H5	H6	H7	H8	H9	H10	H11
<i>Validation</i>	✗	✓	✗	✓	✗	✗	✓	✓	✓	✓	✓

CHAPTER 4

CONCLUSIONS AND RECOMMENDATIONS

Main Conclusions

Internationalization has been broadly considered as a high growth generating process for firms (Dutot, Bergeron, & Raymond, 2014), however, it comprises a number of limiting and motivating factors which influence this term (Suárez-Ortega & Álamo-Vera, 2005). Moreover, each firm is different and has its own characteristics, consequently, internationalization can adopt and play different roles depending on the firm.

The aim of this research was to analyze how SMEs use internationalization and its constituents to grow and survive in view of the recent pandemic. In addition, based on a previous study (Éltető, 2018), the identification of possible similarities with other recession periods, like the economic crisis of 2008, were further explored.

Gathered from the literature review, a number of elements were tested for the purpose of this research, namely, the importance of internationalization for the firms, firm's size, location, markets, internationalization strategy, activity sector, internationalization experience, psychic distance, importance of digitalization and the new restrictions and opportunities which emerged from the pandemic context.

The first conclusion from this research analysis is that internationalization was more advantageous for firms before the pandemic while during this period, SMEs had a decrease in the percentage of international sales in their turnover, contrarily to what occurred during the economic crisis of 2008 when for some firms, internationalization was the key to their survival (Éltető, 2018).

Despite companies being forced to work remotely and to use digital tools to continue their operations with the confinements, direct export remained the most adopted internationalization strategy similar to what happened before the pandemic (CCIP, 2017; CCIP, 2018; CCIP, 2019).

After the economic crisis of 2008, Europe was the most important market for internationalized SMEs due to its proximity and cultural similarities (Éltető, 2018). With the pandemic, although Europe continues to be the most considerable market for Portuguese

SMEs, psychic distance and the firm's location were not significantly affecting the firms on account of the majority of SMEs already exporting to Europe, even before the pandemic.

Internationalized smaller firms are known to have more restrictions than larger firms (Paul et al., 2017), indeed, it has been verified that larger internationalized SMEs had better outcomes than smaller ones. The impact that size has on the internationalizing SMEs accentuated during the pandemic, meaning that smaller SMEs faced more limitations because of its size than others.

Considering the differentiating characteristics of service firms (Kotler, 1991), it was believed that this activity sector suffered the most with the pandemic when, in reality, industry firms experienced more restrictions.

Digitalization and the number of years a firm is operating abroad are still regarded as very important factors that helped companies overcome the pandemic. Much like the Insight studies from 2016 to 2019 (CCIP, 2017; CCIP, 2018; CCIP, 2019), as firms keep internationalizing over the years, they acquire more experience resulting in an increase in sales. Furthermore, the digital factor, continues to be one of the most important internationalization factors, more so, since firms had to work remotely during the confinements. Also, internationalized SMEs having a global network was another important resource to tackle the hardships of the pandemic which had been highlighted by researchers as a way to facilitate the internationalization process (as cited in Ruzzier et al., 2006).

The main conclusion of this study is that despite some aspects remained unchanged before and during the pandemic and, even though there is some homogeneity between the current pandemic context and the recession period of 2008, a pandemic has its own specificity. Firstly, the pandemic generated its own threats and opportunities which shows how peculiar and sensitive this concept is for firms and how hard it is for them to address and control it.

Additionally and most importantly, many scholars supported the idea that internationalization was essential for SMEs survival (D'Souza & McDougall, 1989 *in* Westhead et al., 2002; Lu & Beamish, 2001 *in* Paul et al., 2017), nonetheless, the result was the opposite. Most SMEs had to either fully interrupt or slow down their internationalization process during the pandemic.

Theoretical and managerial (practical) contributions

Internationalization is a topic that is hardly explored especially when considering SMEs. Along with the fact that the pandemic is a recent event, it has created an even bigger research gap which needed to be addressed. Accordingly, this study gives more insight on the existing theory on SMEs internationalization and builds on the knowledge on a completely new concept which has few to none research on. Specifically, it distinguishes the before and during the pandemic to highlight the main contrasts and similarities of both periods taking into consideration the firm's characteristics and the internationalization deterrents and incentives.

Considering the results and conclusions of this study, it is evident that the pandemic is a significant determinant which deeply affected and continues to affect most firms. By better understanding its underlying implications and the methods used to approach the situation, can help other firms facing the same conditions. With this new information, firms can pay more attention to certain resources and characteristics to improve their performance and consequently increase their turnover. For example, making more use of its network, improving and maximizing the use of digital tools and apply the firm's international experience wisely when needed. Firms can have a better notion of the negative consequences of the pandemic so that in a future adversity that is alike, they know how to take action.

Besides the companies that are already internationalized, those that wish to start their internationalization process can have a better perception of the drawbacks and benefits ahead, especially in a delicate circumstance where the firm's sustainability and survival is tested.

Research Limitations

The first limitation encountered in the development of this dissertation was the lack of literature and scientific papers on the topic of SMEs internationalization and the pandemic of Covid-19. The other limitations were addressed, mainly, during the data collection and analysis proceedings. Not every single aspect of the pandemic implications was analyzed as it is an already extensive and exploratory study.

The method used to collect the data was through an online survey and this questionnaire was long due to the nature of the research. Moreover, online surveys usually have lower response rates since it is a non-personal/physical method of questioning the target sample and

being external to the participant firms reduces the trust when answering the form. Also, the questionnaire was distributed solely online, therefore, only those with access to the internet could respond.

Finally, there was a lack of representativeness regarding some factors, e.g. firms from certain activity sectors (Commerce) and locations.

Future Research Suggestions

As SMEs' internationalization is a concept that still needs more exploration and investigation, a few suggestions for further research are presented, namely, a research which compared the pandemic impact with other recession periods different from the economic crisis of 2008 in order to have more comparative information, or focusing the research on a specific activity sector to have a deeper analysis of its features, or a comparison between large firms and SMEs internationalization to study the size limitation of firms, or a comparison between internationalized Portuguese SMEs and European SMEs to better perceive the differences in performance and growth, or to explore the starting phase of internationalization i.e. firms that intended to internationalize before the pandemic occurred, or even to deeper explore SMEs internationalization from the perspective of digitalization or the firm's international experience and knowledge.

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ANNEXES

ANNEX A: Introduction Figures

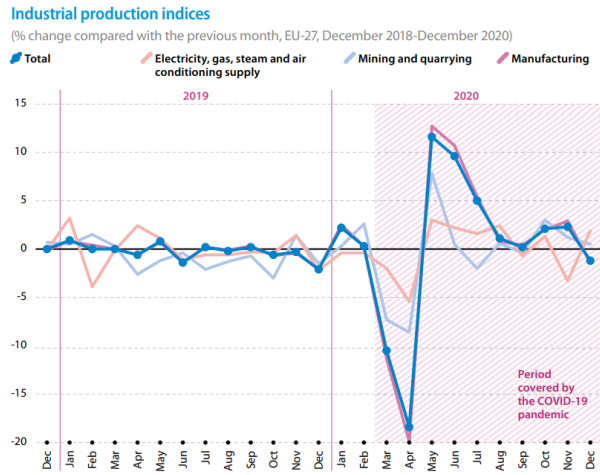


Figure 1. Impact of COVID-19 pandemic: Industrial production indices

Source: Eurostat. Retrieved from

<https://ec.europa.eu/eurostat/documents/3217494/12601271/KS-01-20-363-EN-N.pdf/57086a1d-ba26-a397-85b6-f28d08f28426>

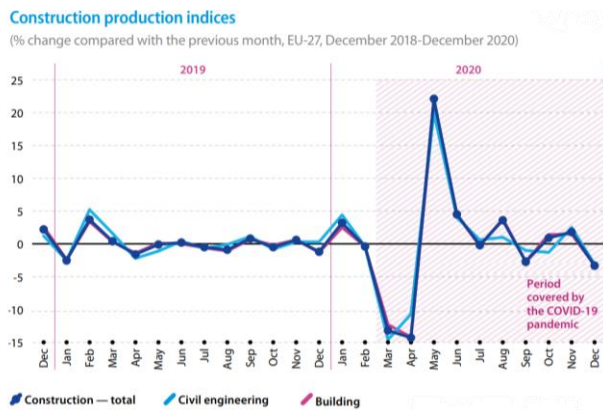


Figure 2. Impact of COVID-19 pandemic: Construction production indices

Source: Eurostat. Retrieved from

<https://ec.europa.eu/eurostat/documents/3217494/12601271/KS-01-20-363-EN-N.pdf/57086a1d-ba26-a397-85b6-f28d08f28426>

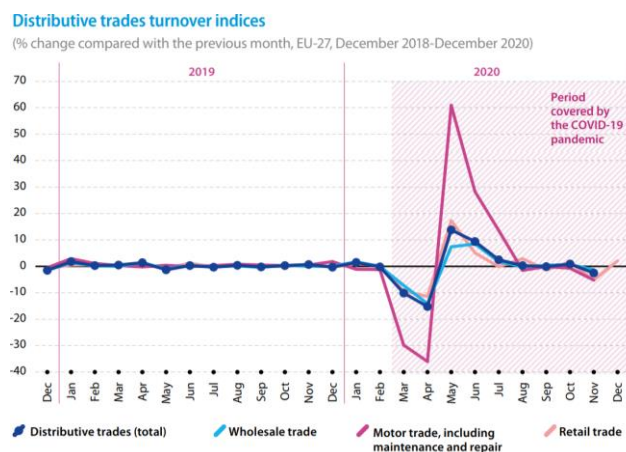


Figure 3. Impact of COVID-19 pandemic: Distributive trades turnover indices

Source: Eurostat. Retrieved from

<https://ec.europa.eu/eurostat/documents/3217494/12601271/KS-01-20-363-EN-N.pdf/57086a1d-ba26-a397-85b6-f28d08f28426>

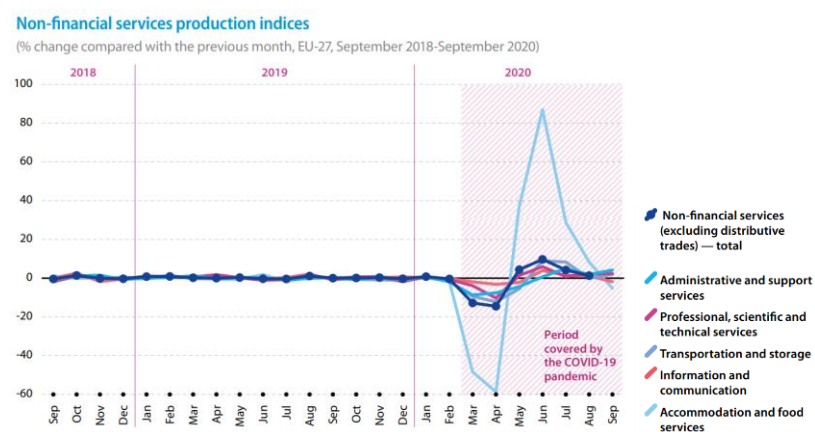


Figure 4. Impact of COVID-19 pandemic: Non-financial services production indices

Source: Eurostat. Retrieved from

<https://ec.europa.eu/eurostat/documents/3217494/12601271/KS-01-20-363-EN-N.pdf/57086a1d-ba26-a397-85b6-f28d08f28426>

ANNEX B: Literature Review Figures & Tables



Figure 1. Internationalization Modes adopted in each sector

Source: Portuguese Chamber of Commerce and Industry. Retrieved from

<https://www.ccip.pt/pt/menu-media/noticias/1450-modelos-de-internacionalizacao-das-pme-portuguesas>

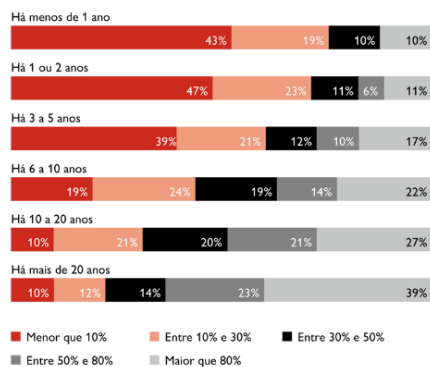


Figure 2. International activity representativeness in the turnover of firms based on the number of years internationalized

Source: Portuguese Chamber of Commerce and Industry. Retrieved from

<https://www.ccip.pt/pt/menu-media/noticias/1465-internacionalizacao-uma-realidade-diferenciada>

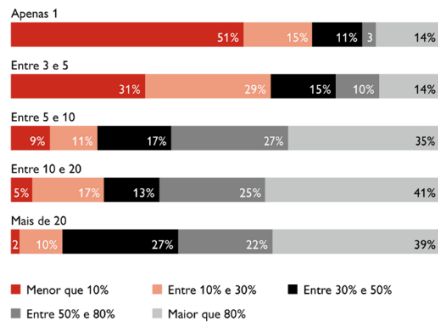


Figure 3. International activity representativeness in the turnover of firms considering the number of markets they are present in

Source: Portuguese Chamber of Commerce and Industry. Retrieved from <https://www.ccip.pt/pt/menu-media/noticias/1465-internacionalizacao-uma-realidade-diferenciada>

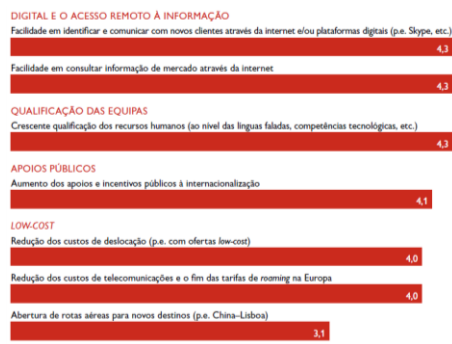


Figure 4. Importance of the following factors “1-not important; 5-very important” to promote internationalization

Source: Portuguese Chamber of Commerce and Industry. Retrieved from <https://www.ccip.pt/pt/menu-media/noticias/1507-factores-que-potenciam-a-actividade-internacional>

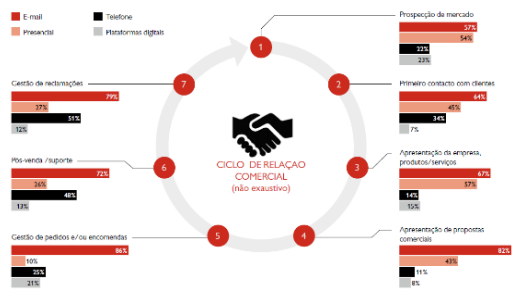


Figure 5. Main channels to conduct the international business relationship

Source: Portuguese Chamber of Commerce and Industry. Retrieved from

<https://www.ccip.pt/pt/menu-media/noticias/1507-factores-que-potenciam-a-actividade-internacional>



Figure 6. Main reasons why SMEs decided to internationalize

Source: Portuguese Chamber of Commerce and Industry. Retrieved from

<https://www.ccip.pt/pt/menu-media/noticias/1787-internacionalizacao-uma-realidade-de-enorme-centralidade-estrategica>

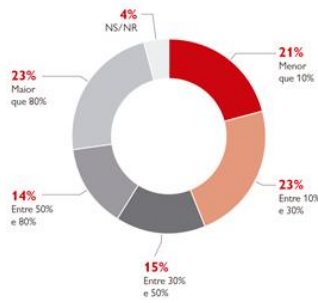


Figure 7. International operations representativeness in SMEs' turnover

Source: Portuguese Chamber of Commerce and Industry. Retrieved from

<https://www.ccip.pt/pt/menu-media/noticias/1787-internacionalizacao-uma-realidade-de-enorme-centralidade-estrategica>

Table 1. "Factors of successful internationalization after the crisis"

Countries	Internal factors	External factors
Spain	product price, human resources, brand, strategic alliances, management's international experience attitude, innovation	domestic market shrinkage
Portugal	international business experience, innovation, partnerships	domestic market saturation
Poland	managerial attitude and reaction, own network of relations, innovation	high demand abroad, business opportunities, network
Czech Republic	managerial global vision, knowledge, innovation	-
Slovakia	innovation, mind-set of management, product development	-
Hungary	managerial attitude and strategic partnerships, product development, innovation	new opportunities abroad
Estonia	quality of products, good contacts, low production cost, professional expertise of employees, managers	accessible markets
Latvia	innovation, proactive attitude of manager, marketing	-
Lithuania	skilled labour, personal contacts, management vision	opportunities abroad

Source: Adapted from Éltető (2018)

Table 2. "Share of companies according to firm size, 2016, %"

		Micro 0-10	Small 11-49	Medium 50-249	Total SME	Large 250 +
PT	Number	95.1	4.2	0.6	99.9	0.1
	Employment	40.9	20.9	16.4	78.1	21.9
	Value added	24.2	22.1	22.3	68.5	31.5

Source: Adapted from Éltető (2018)

Table 3. "Export value increase/decrease of SMEs according to size and area between 2008-2013 and 2013-2015"

	2013/08	Micro	Small	Medium	Large	2015/13	Micro	Small	Medium	Large
PT	Extra-EU	1.69	1.76	1.71	1.14	Extra-EU	0.80	0.98	1.01	0.91
	EU	1.62	1.45	1.05	1.11	EU	1.00	1.09	1.10	1.08

Source: Adapted from Éltető (2018)

ANNEX C: Methodology Figures

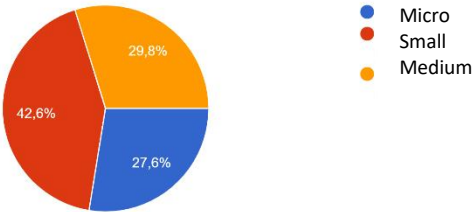


Figure 1. Firms' size
 Source: Research database

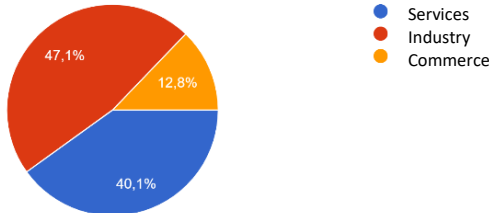


Figure 2. Firms' activity sectors
 Source: Research database



Figure 3. Firms' business volume in 2020
 Source: Research database

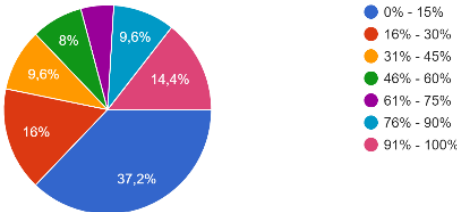


Figure 4. Proportion of international sales on the firms' business volume, in 2020
 Source: Research database

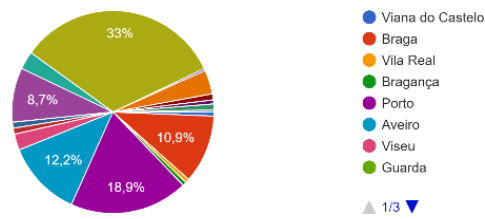


Figure 5. Firms' locations

Source: Research database

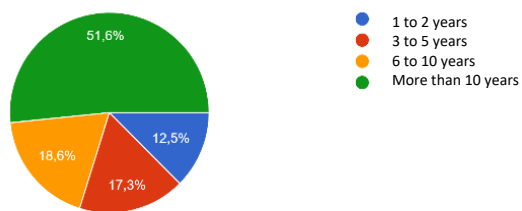


Figure 6. Number of years the firms have been operating abroad

Source: Research database

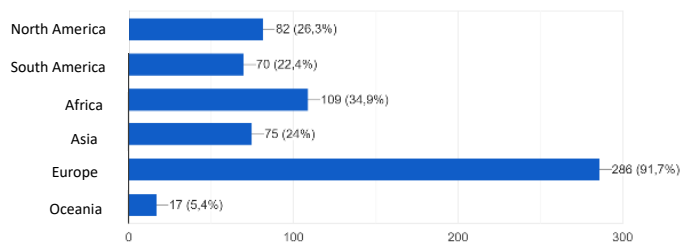


Figure 7. Markets where the firms are operating in

Source: Research database

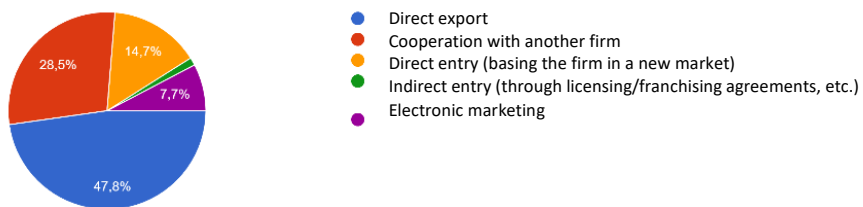


Figure 8. The firms' chosen internationalization strategy

Source: Research database

ANNEX D: Results Tables & Graphs

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	In 2020, with the pandemic, what was the proportion of international sales on the firm's business volume?	46,6990%	309	32,71448%	1,86106%
	In 2019, before the pandemic, what was the proportion of international sales on the firm's business volume?	50,5016%	309	32,78458%	1,86505%

Table 1: Descriptive statistics of both variables

		N	Correlation	Sig.
Pair 1	In 2020, with the pandemic, what was the proportion of international sales on the firm's business volume? & In 2019, before the pandemic, what was the proportion of international sales on the firm's business volume?	309	,879	,000

Table 2: Correlation between both variables

		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference		t	df	Sig. (2-tailed)
					Lower	Upper			
Pair 1	In 2020, with the pandemic, what was the proportion of international sales on the firm's business volume? - In 2019, before the pandemic, what was the proportion of international sales on the firm's business volume?	-3,80259%	16,09700%	0,91573%	-5,60446%	-2,00072%	-4,153	308	,000

Table 3: Hypothesis test on the average population difference between both variables

			What is the firm's size?	In 2019, before the pandemic, what was the proportion of international sales on the firm's business volume?	In 2020, with the pandemic, what was the proportion of international sales on the firm's business volume?
Spearman's rho	What is the firm's size?	Correlation Coefficient	1,000	,198**	,259**
		Sig. (2-tailed)	.	,000	,000
		N	309	309	309
	In 2019, before the pandemic, what was the proportion of international sales on the firm's business volume?	Correlation Coefficient	,198**	1,000	,880**
		Sig. (2-tailed)	,000	.	,000
		N	309	309	309
	In 2020, with the pandemic, what was the proportion of international sales on the firm's business volume?	Correlation Coefficient	,259**	,880**	1,000
		Sig. (2-tailed)	,000	,000	.
		N	309	309	309

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

Table 4: Correlation Matrix of variables firm's size, proportion of international sales 2019 and 2020

Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method
1	Medium dummy variable, In 2019, before the pandemic, what was the proportion of international sales on the firm's business volume?, Small dummy variable ^b		Enter

a. Dependent Variable: In 2020, with the pandemic, what was the proportion of international sales on the firm's business volume?

b. All requested variables entered.

Table 5: Variables entered and removed from the MLRM

Model Summary^b

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	,883 ^a	,780	,778	15,41173%	1,979

a. Predictors: (Constant), Medium dummy variable, In 2019, before the pandemic, what was the proportion of international sales on the firm's business volume?, Small dummy variable

b. Dependent Variable: In 2020, with the pandemic, what was the proportion of international sales on the firm's business volume?

Table 6: Variability of proportion of international sales in 2020 explained by the independent variables

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	257188,941	3	85729,647	360,934	,000 ^b
	Residual	72444,069	305	237,522		
	Total	329633,010	308			

a. Dependent Variable: In 2020, with the pandemic, what was the proportion of international sales on the firm's business volume?

b. Predictors: (Constant), Medium dummy variable, In 2019, before the pandemic, what was the proportion of international sales on the firm's business volume?, Small dummy variable

Table 7: ANOVA test for significance of the independent variables to explain the proportion of international sales in 2020

Residuals Statistics^a

	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	12,0777%	92,7012%	46,6990%	28,89687%	309
Residual	-70,27937%	47,92231%	0,00000%	15,33649%	309
Std. Predicted Value	-1,198	1,592	,000	1,000	309
Std. Residual	-4,560	3,109	,000	,995	309

a. Dependent Variable: In 2020, with the pandemic, what was the proportion of international sales on the firm's business volume?

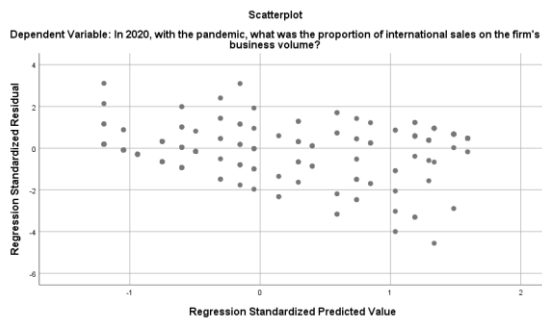
Table 8: Residuals Statistics

Correlations

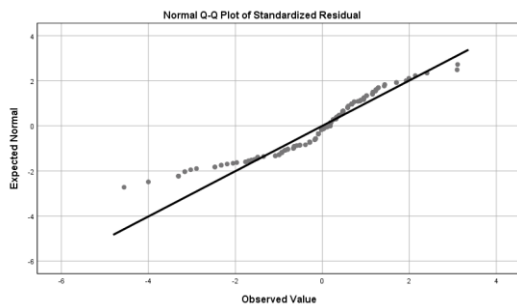
		In 2019, before the pandemic, what was the proportion of international sales on the firm's business volume?	In 2020, with the pandemic, what was the proportion of international sales on the firm's business volume?	What is the firm's size?	Unstandardized Residual
In 2019, before the pandemic, what was the proportion of international sales on the firm's business volume?	Pearson Correlation	1	,879**	,193**	,000
	Sig. (2-tailed)		,000	,001	1,000
	N	309	309	309	309
In 2020, with the pandemic, what was the proportion of international sales on the firm's business volume?	Pearson Correlation	,879**	1	,253**	,469**
	Sig. (2-tailed)	,000		,000	,000
	N	309	309	309	309
What is the firm's size?	Pearson Correlation	,193**	,253**	1	,000
	Sig. (2-tailed)	,001	,000		1,000
	N	309	309	309	309
Unstandardized Residual	Pearson Correlation	,000	,469**	,000	1
	Sig. (2-tailed)	1,000	,000	1,000	
	N	309	309	309	309

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

Table 9: Independent variables and residuals correlations



Graph 1: Scatterplot to verify residuals' homoscedasticity



Graph 2: Residuals Q-Q Plot

Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method
1	North dummy variable, Islands dummy variable, Do these factors still restrict the firm's international operations with the pandemic? Cultural distance, South dummy variable ^b	.	Enter

a. Dependent Variable: In 2020, with the pandemic, what was the proportion of international sales on the firm's business volume?

b. All requested variables entered.

Table 10: Variables entered and removed from the MLRM

Model Summary^b

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	,148 ^a	,022	,009	32,56470%	1,962

- a. Predictors: (Constant), North dummy variable, Islands dummy variable, Do these factors still restrict the firm's international operations with the pandemic? Cultural distance, South dummy variable
- b. Dependent Variable: In 2020, with the pandemic, what was the proportion of international sales on the firm's business volume?

Table 11: Variability of proportion of international sales in 2020 explained by the independent variables

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	7253,280	4	1813,320	1,710	,148 ^b
	Residual	322379,729	304	1060,460		
	Total	329633,010	308			

- a. Dependent Variable: In 2020, with the pandemic, what was the proportion of international sales on the firm's business volume?
- b. Predictors: (Constant), North dummy variable, Islands dummy variable, Do these factors still restrict the firm's international operations with the pandemic? Cultural distance, South dummy variable

Table 12: ANOVA test for significance of the independent variables to explain the proportion of international sales in 2020

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	261,311 ^a	1	,000		
Continuity Correction ^b	249,899	1	,000		
Likelihood Ratio	146,120	1	,000		
Fisher's Exact Test				,000	,000
Linear-by-Linear Association	260,466	1	,000		
N of Valid Cases	309				

- a. 1 cells (25,0%) have expected count less than 5. The minimum expected count is 2,36.
- b. Computed only for a 2x2 table

Table 13: Results of Chi-square test of independence

Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method
1	Electronic Marketing dummy variable, Indirect Entry dummy variable, Cooperation with another firm dummy, Direct Export dummy variable ^b	.	Enter

- a. Dependent Variable: In 2020, with the pandemic, what was the proportion of international sales on the firm's business volume?
- b. All requested variables entered.

Table 14: Variables entered and removed from the MLRM

Model Summary^b

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	,335 ^a	,112	,101	31,02293%	1,974

a. Predictors: (Constant), Electronic Marketing dummy variable, Indirect Entry dummy variable, Cooperation with another firm dummy, Direct Export dummy variable

b. Dependent Variable: In 2020, with the pandemic, what was the proportion of international sales on the firm's business volume?

Table 15: Variability of proportion of international sales in 2020 explained by the independent variables

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	37056,704	4	9264,176	9,626	,000 ^b
	Residual	292576,306	304	962,422		
	Total	329633,010	308			

a. Dependent Variable: In 2020, with the pandemic, what was the proportion of international sales on the firm's business volume?

b. Predictors: (Constant), Electronic Marketing dummy variable, Indirect Entry dummy variable, Cooperation with another firm dummy, Direct Export dummy variable

Table 16: ANOVA test for significance of the independent variables to explain the proportion of international sales in 2020

Residuals Statistics^a

	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	22,5000%	57,9392%	46,6990%	10,96877%	309
Residual	-42,93919%	64,10112%	0,00000%	30,82082%	309
Std. Predicted Value	-2,206	1,025	,000	1,000	309
Std. Residual	-1,384	2,066	,000	,993	309

a. Dependent Variable: In 2020, with the pandemic, what was the proportion of international sales on the firm's business volume?

Table 17: Residuals Statistics

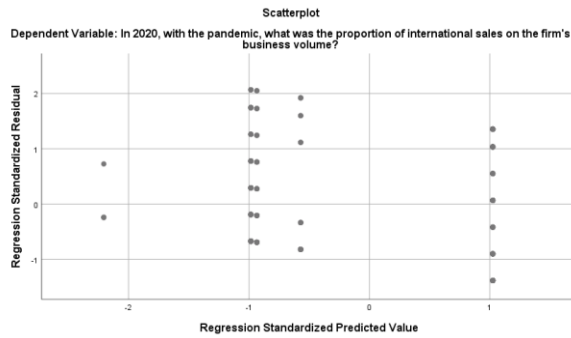
Correlations

		Direct Export dummy variable	Cooperation with another firm dummy	Direct Entry dummy variable	Indirect Entry dummy variable	Electronic Marketing dummy variable	In 2020, with the pandemic, what was the proportion of international sales on the firm's business volume?	Unstandardized Residual
Direct Export dummy variable	Pearson Correlation	1	-.607 ^{**}	-.394 ^{**}	-.109	-.271 ^{**}	,330 ^{**}	,000
	Sig. (2-tailed)		,000	,000	,055	,000	,000	1,000
	N	310	310	310	310	310	309	309
Cooperation with another firm dummy	Pearson Correlation	-.607 ^{**}	1	-.262 ^{**}	-.073	-.180 ^{**}	-.210 ^{**}	,000
	Sig. (2-tailed)	,000		,000	,203	,001	,000	1,000
	N	310	310	310	310	310	309	309
Direct Entry dummy variable	Pearson Correlation	-.394 ^{**}	-.262 ^{**}	1	-.047	-.117 [*]	-.130 [*]	,000
	Sig. (2-tailed)	,000	,000		,408	,040	,023	1,000
	N	310	310	310	310	310	309	309
Indirect Entry dummy variable	Pearson Correlation	-.109	-.073	-.047	1	-.032	-.085	,000
	Sig. (2-tailed)	,055	,203	,408		,570	,137	1,000
	N	310	310	310	310	310	309	309
Electronic Marketing dummy variable	Pearson Correlation	-.271 ^{**}	-.180 ^{**}	-.117 [*]	-.032	1	-.054	,000
	Sig. (2-tailed)	,000	,001	,040	,570		,341	1,000
	N	310	310	310	310	310	309	309
In 2020, with the pandemic, what was the proportion of international sales on the firm's business volume?	Pearson Correlation	,330 ^{**}	-.210 ^{**}	-.130 [*]	-.085	-.054	1	,942 ^{**}
	Sig. (2-tailed)	,000	,000	,023	,137	,341		,000
	N	309	309	309	309	309	309	309
Unstandardized Residual	Pearson Correlation	,000	,000	,000	,000	,000	,942 ^{**}	1
	Sig. (2-tailed)	1,000	1,000	1,000	1,000	1,000	,000	
	N	309	309	309	309	309	309	309

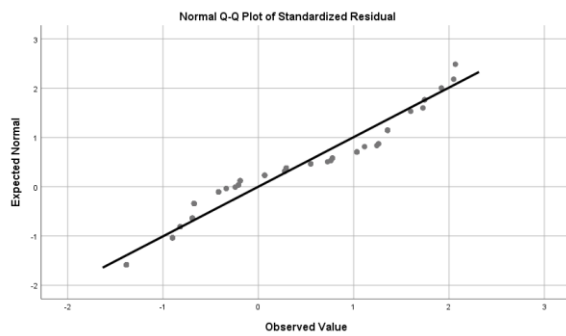
** . Correlation is significant at the 0.01 level (2-tailed).

* . Correlation is significant at the 0.05 level (2-tailed).

Table 18: Independent variables and residuals correlations



Graph 3: Scatterplot to verify residuals' homoscedasticity



Graph 4: Residuals Q-Q Plot

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	,779 ^a	2	,677
Likelihood Ratio	,779	2	,677
Linear-by-Linear Association	,734	1	,392
N of Valid Cases	295		

a. 0 cells (0,0%) have expected count less than 5. The minimum expected count is 16,39.

Table 19: Results of Chi-square test of independence

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	34,727 ^a	1	,000		
Continuity Correction ^b	32,624	1	,000		
Likelihood Ratio	31,956	1	,000		
Fisher's Exact Test				,000	,000
Linear-by-Linear Association	34,614	1	,000		
N of Valid Cases	309				

a. 0 cells (0%) have expected count less than 5. The minimum expected count is 12,74.

b. Computed only for a 2x2 table

Table 20: Results of Chi-square test of independence (Lack of demand)

What were the main limitations/ constraints when internationalizing, before the pandemic? Lack of demand * Do these factors still restrict the firm's international operations with the pandemic? Lack of demand Crosstabulation

		Do these factors still restrict the firm's international operations with the pandemic? Lack of demand			
		No	Yes	Total	
What were the main limitations/ constraints when internationalizing, before the pandemic? Lack of demand	No	Expected Count	184,7	83,3	268,0
		% within What were the main limitations/ constraints when internationalizing, before the pandemic? Lack of demand	75,0%	25,0%	100,0%
		% within Do these factors still restrict the firm's international operations with the pandemic? Lack of demand	94,4%	69,8%	86,7%
	Yes	Expected Count	28,3	12,7	41,0
		% within What were the main limitations/ constraints when internationalizing, before the pandemic? Lack of demand	29,3%	70,7%	100,0%
		% within Do these factors still restrict the firm's international operations with the pandemic? Lack of demand	5,6%	30,2%	13,3%
Total	Expected Count	213,0	96,0	309,0	
	% within What were the main limitations/ constraints when internationalizing, before the pandemic? Lack of demand	68,9%	31,1%	100,0%	
	% within Do these factors still restrict the firm's international operations with the pandemic? Lack of demand	100,0%	100,0%	100,0%	

Table 21: Lack of demand before and during the pandemic Crosstabulation

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	135,699 ^a	1	,000		
Continuity Correction ^b	126,820	1	,000		
Likelihood Ratio	72,203	1	,000		
Fisher's Exact Test				,000	,000
Linear-by-Linear Association	135,259	1	,000		
N of Valid Cases	309				

a. 1 cells (25,0%) have expected count less than 5. The minimum expected count is 1,97.

b. Computed only for a 2x2 table

Table 22: Results of Chi-square test of independence (Cultural distance)

What were the main limitations/ constraints when internationalizing, before the pandemic? Cultural distance * Do these factors still restrict the firm's international operations with the pandemic? Cultural distance Crosstabulation

			Do these factors still restrict the firm's international operations with the pandemic? Cultural distance		Total
			No	Yes	
What were the main limitations/ constraints when internationalizing, before the pandemic? Cultural distance	No	Expected Count	261,0	19,0	280,0
		% within What were the main limitations/ constraints when internationalizing, before the pandemic? Cultural distance	98,6%	1,4%	100,0%
		% within Do these factors still restrict the firm's international operations with the pandemic? Cultural distance	95,8%	19,0%	90,6%
	Yes	Expected Count	27,0	2,0	29,0
		% within What were the main limitations/ constraints when internationalizing, before the pandemic? Cultural distance	41,4%	58,6%	100,0%
		% within Do these factors still restrict the firm's international operations with the pandemic? Cultural distance	4,2%	81,0%	9,4%
Total	Expected Count	288,0	21,0	309,0	
	% within What were the main limitations/ constraints when internationalizing, before the pandemic? Cultural distance	93,2%	6,8%	100,0%	
	% within Do these factors still restrict the firm's international operations with the pandemic? Cultural distance	100,0%	100,0%	100,0%	

Table 23: Cultural distance before and during the pandemic Crosstabulation

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	176,022 ^a	1	,000		
Continuity Correction ^b	168,932	1	,000		
Likelihood Ratio	115,812	1	,000		
Fisher's Exact Test				,000	,000
Linear-by-Linear Association	175,452	1	,000		
N of Valid Cases	309				

a. 1 cells (25,0%) have expected count less than 5. The minimum expected count is 4,43.

b. Computed only for a 2x2 table

Table 24: Results of Chi-square test of independence (Unfavorable international regulations)

What were the main limitations/ constraints when internationalizing, before the pandemic? Unfavorable international regulations * Do these factors still restrict the firm's international operations with the pandemic? Unfavorable international regulations Crosstabulation

			Do these factors still restrict the firm's international operations with the pandemic? Unfavorable international regulations		Total
			No	Yes	
What were the main limitations/ constraints when internationalizing, before the pandemic? Unfavorable international regulations	No	Expected Count	239,4	33,6	273,0
		% within What were the main limitations/ constraints when internationalizing, before the pandemic? Unfavorable international regulations	96,7%	3,3%	100,0%
	Yes	Expected Count	31,6	4,4	36,0
		% within What were the main limitations/ constraints when internationalizing, before the pandemic? Unfavorable international regulations	19,4%	80,6%	100,0%
	Do these factors still restrict the firm's international operations with the pandemic? Unfavorable international regulations	Expected Count	271,0	38,0	309,0
		% within Do these factors still restrict the firm's international operations with the pandemic? Unfavorable international regulations	87,7%	12,3%	100,0%
Total	Expected Count	271,0	38,0	309,0	
	% within Do these factors still restrict the firm's international operations with the pandemic? Unfavorable international regulations	100,0%	100,0%	100,0%	

Table 25: Unfavorable international regulations before and during the pandemic Crosstabulation

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	166,221 ^a	1	,000		
Continuity Correction ^b	160,769	1	,000		
Likelihood Ratio	127,088	1	,000		
Fisher's Exact Test				,000	,000
Linear-by-Linear Association	165,683	1	,000		
N of Valid Cases	309				

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 7,77.

b. Computed only for a 2x2 table

Table 26: Results of Chi-square test of independence (Exchange rate/ price fluctuations)

What were the main limitations/ constraints when internationalizing, before the pandemic? Exchange rate/ price fluctuations ~ Do these factors still restrict the firm's international operations with the pandemic? Exchange rate/ price fluctuations Crosstabulation

			Do these factors still restrict the firm's international operations with the pandemic? Exchange rate/ price fluctuations		Total
			No	Yes	
What were the main limitations/ constraints when internationalizing, before the pandemic? Exchange rate/ price fluctuations	No	Expected Count	218,8	40,2	259,0
		% within What were the main limitations/ constraints when internationalizing, before the pandemic? Exchange rate/ price fluctuations	96,1%	3,9%	100,0%
		% within Do these factors still restrict the firm's international operations with the pandemic? Exchange rate/ price fluctuations	95,4%	20,8%	83,8%
	Yes	Expected Count	42,2	7,8	50,0
		% within What were the main limitations/ constraints when internationalizing, before the pandemic? Exchange rate/ price fluctuations	24,0%	76,0%	100,0%
		% within Do these factors still restrict the firm's international operations with the pandemic? Exchange rate/ price fluctuations	4,6%	79,2%	16,2%
Total	Expected Count	261,0	48,0	309,0	
	% within What were the main limitations/ constraints when internationalizing, before the pandemic? Exchange rate/ price fluctuations	84,5%	15,5%	100,0%	
	% within Do these factors still restrict the firm's international operations with the pandemic? Exchange rate/ price fluctuations	100,0%	100,0%	100,0%	

Table 27: Exchange rate/ price fluctuations before and during the pandemic Crosstabulation

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	185,481 ^a	1	,000		
Continuity Correction ^b	181,192	1	,000		
Likelihood Ratio	172,234	1	,000		
Fisher's Exact Test				,000	,000
Linear-by-Linear Association	184,881	1	,000		
N of Valid Cases	309				

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 17,01.

b. Computed only for a 2x2 table

Table 28: Results of Chi-square test of independence (Exportation costs/risks)

What were the main limitations/ constraints when internationalizing, before the pandemic? Exportation costs/risks * Do these factors still restrict the firm's international operations with the pandemic? Exportation costs/risks Crosstabulation

		Do these factors still restrict the firm's international operations with the pandemic? Exportation costs/risks		Total	
		No	Yes		
What were the main limitations/ constraints when internationalizing, before the pandemic? Exportation costs/risks	No	Expected Count	181,0	55,0	236,0
		% within What were the main limitations/ constraints when internationalizing, before the pandemic? Exportation costs/risks	94,9%	5,1%	100,0%
		% within Do these factors still restrict the firm's international operations with the pandemic? Exportation costs/risks	94,5%	16,7%	76,4%
	Yes	Expected Count	56,0	17,0	73,0
		% within What were the main limitations/ constraints when internationalizing, before the pandemic? Exportation costs/risks	17,8%	82,2%	100,0%
		% within Do these factors still restrict the firm's international operations with the pandemic? Exportation costs/risks	5,5%	83,3%	23,6%
Total		Expected Count	237,0	72,0	309,0
		% within What were the main limitations/ constraints when internationalizing, before the pandemic? Exportation costs/risks	76,7%	23,3%	100,0%
		% within Do these factors still restrict the firm's international operations with the pandemic? Exportation costs/risks	100,0%	100,0%	100,0%

Table 29: Exportation costs/risks before and during the pandemic Crosstabulation

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	103,938 ^a	1	,000		
Continuity Correction ^b	100,205	1	,000		
Likelihood Ratio	89,889	1	,000		
Fisher's Exact Test				,000	,000
Linear-by-Linear Association	103,601	1	,000		
N of Valid Cases	309				

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 11,41.

b. Computed only for a 2x2 table

Table 30: Results of Chi-square test of independence (Political/economic instability)

What were the main limitations/ constraints when internationalizing, before the pandemic? Political/economic instability * Do these factors still restrict the firm's international operations with the pandemic? Political/economic instability
Crosstabulation

			Do these factors still restrict the firm's international operations with the pandemic? Political/economic instability		Total
			No	Yes	
What were the main limitations/ constraints when internationalizing, before the pandemic? Political/economic instability	No	Expected Count	198,4	63,6	262,0
		% within What were the main limitations/ constraints when internationalizing, before the pandemic? Political/economic instability	86,3%	13,7%	100,0%
		% within Do these factors still restrict the firm's international operations with the pandemic? Political/economic instability	96,6%	48,0%	84,8%
	Yes	Expected Count	35,6	11,4	47,0
		% within What were the main limitations/ constraints when internationalizing, before the pandemic? Political/economic instability	17,0%	83,0%	100,0%
		% within Do these factors still restrict the firm's international operations with the pandemic? Political/economic instability	3,4%	52,0%	15,2%
Total	Expected Count	234,0	75,0	309,0	
	% within What were the main limitations/ constraints when internationalizing, before the pandemic? Political/economic instability	75,7%	24,3%	100,0%	
	% within Do these factors still restrict the firm's international operations with the pandemic? Political/economic instability	100,0%	100,0%	100,0%	

Table 31: Political/economic instability before and during the pandemic Crosstabulation

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	71,160 ^a	1	,000		
Continuity Correction ^b	69,134	1	,000		
Likelihood Ratio	74,078	1	,000		
Fisher's Exact Test				,000	,000
Linear-by-Linear Association	70,929	1	,000		
N of Valid Cases	309				

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 47,12.

b. Computed only for a 2x2 table

Table 32: Results of Chi-square test of independence (Market uncertainty)

What were the main limitations/ constraints when internationalizing, before the pandemic? Market uncertainty * Do these factors still restrict the firm's international operations with the pandemic? Market uncertainty Crosstabulation

			Do these factors still restrict the firm's international operations with the pandemic? Market uncertainty		Total
			No	Yes	
What were the main limitations/ constraints when internationalizing, before the pandemic? Market uncertainty	No	Expected Count	112,1	92,9	205,0
		% within What were the main limitations/ constraints when internationalizing, before the pandemic? Market uncertainty	71,7%	28,3%	100,0%
		% within Do these factors still restrict the firm's international operations with the pandemic? Market uncertainty	87,0%	41,4%	66,3%
	Yes	Expected Count	56,9	47,1	104,0
		% within What were the main limitations/ constraints when internationalizing, before the pandemic? Market uncertainty	21,2%	78,8%	100,0%
		% within Do these factors still restrict the firm's international operations with the pandemic? Market uncertainty	13,0%	58,6%	33,7%
Total	Expected Count	169,0	140,0	309,0	
	% within What were the main limitations/ constraints when internationalizing, before the pandemic? Market uncertainty	54,7%	45,3%	100,0%	
	% within Do these factors still restrict the firm's international operations with the pandemic? Market uncertainty	100,0%	100,0%	100,0%	

Table 33: Market uncertainty before and during the pandemic Crosstabulation

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	151,520 ^a	1	,000		
Continuity Correction ^b	146,555	1	,000		
Likelihood Ratio	119,082	1	,000		
Fisher's Exact Test				,000	,000
Linear-by-Linear Association	151,030	1	,000		
N of Valid Cases	309				

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 8,74.

b. Computed only for a 2x2 table

Table 34: Results of Chi-square test of independence (Limited/lack of resources)

What were the main limitations/ constraints when internationalizing, before the pandemic? Limited/lack of resources * Do these factors still restrict the firm's international operations with the pandemic? Limited/lack of resources Crosstabulation

			Do these factors still restrict the firm's international operations with the pandemic? Limited/lack of resources		Total
			No	Yes	
What were the main limitations/ constraints when internationalizing, before the pandemic? Limited/lack of resources	No	Expected Count	213,7	45,3	259,0
		% within What were the main limitations/ constraints when internationalizing, before the pandemic? Limited/lack of resources	94,2%	5,8%	100,0%
		% within Do these factors still restrict the firm's international operations with the pandemic? Limited/lack of resources	95,7%	27,8%	83,8%
	Yes	Expected Count	41,3	8,7	50,0
		% within What were the main limitations/ constraints when internationalizing, before the pandemic? Limited/lack of resources	22,0%	78,0%	100,0%
		% within Do these factors still restrict the firm's international operations with the pandemic? Limited/lack of resources	4,3%	72,2%	16,2%
Total	Expected Count	255,0	54,0	309,0	
	% within What were the main limitations/ constraints when internationalizing, before the pandemic? Limited/lack of resources	82,5%	17,5%	100,0%	
	% within Do these factors still restrict the firm's international operations with the pandemic? Limited/lack of resources	100,0%	100,0%	100,0%	

Table 35: Limited/lack of resources before and during the pandemic Crosstabulation

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	47,977 ^a	1	,000		
Continuity Correction ^b	32,498	1	,000		
Likelihood Ratio	14,124	1	,000		
Fisher's Exact Test				,000	,000
Linear-by-Linear Association	47,821	1	,000		
N of Valid Cases	309				

a. 1 cells (25,0%) have expected count less than 5. The minimum expected count is ,17.

b. Computed only for a 2x2 table

Table 36: Results of Chi-square test of independence (Lack of know-how)

What were the main limitations/ constraints when internationalizing, before the pandemic? Lack of know-how * Do these factors still restrict the firm's international operations with the pandemic? Lack of know-how Crosstabulation

			Do these factors still restrict the firm's international operations with the pandemic? Lack of know-how		Total
			No	Yes	
What were the main limitations/ constraints when internationalizing, before the pandemic? Lack of know-how	No	Expected Count	294,2	5,8	300,0
		% within What were the main limitations/ constraints when internationalizing, before the pandemic? Lack of know-how	99,0%	1,0%	100,0%
		% within Do these factors still restrict the firm's international operations with the pandemic? Lack of know-how	98,0%	50,0%	97,1%
	Yes	Expected Count	8,8	,2	9,0
		% within What were the main limitations/ constraints when internationalizing, before the pandemic? Lack of know-how	66,7%	33,3%	100,0%
		% within Do these factors still restrict the firm's international operations with the pandemic? Lack of know-how	2,0%	50,0%	2,9%
Total	Expected Count	303,0	6,0	309,0	
	% within What were the main limitations/ constraints when internationalizing, before the pandemic? Lack of know-how	98,1%	1,9%	100,0%	
	% within Do these factors still restrict the firm's international operations with the pandemic? Lack of know-how	100,0%	100,0%	100,0%	

Table 37: Lack of know-how before and during the pandemic Crosstabulation

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	138,908 ^a	1	,000		
Continuity Correction ^b	133,251	1	,000		
Likelihood Ratio	97,936	1	,000		
Fisher's Exact Test				,000	,000
Linear-by-Linear Association	138,459	1	,000		
N of Valid Cases	309				

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 5,70.

b. Computed only for a 2x2 table

Table 38: Results of Chi-square test of independence (Lack of capital)

What were the main limitations/ constraints when internationalizing, before the pandemic? Lack of capital * Do these factors still restrict the firm's international operations with the pandemic?Lack of capital Crosstabulation

		Do these factors still restrict the firm's international operations with the pandemic?Lack of capital			
		No	Yes	Total	
What were the main limitations/ constraints when internationalizing, before the pandemic? Lack of capital	No	Expected Count	230,7	34,3	265,0
		% within What were the main limitations/ constraints when internationalizing, before the pandemic? Lack of capital	96,2%	3,8%	100,0%
		% within Do these factors still restrict the firm's international operations with the pandemic?Lack of capital	94,8%	25,0%	85,8%
	Yes	Expected Count	38,3	5,7	44,0
		% within What were the main limitations/ constraints when internationalizing, before the pandemic? Lack of capital	31,8%	68,2%	100,0%
		% within Do these factors still restrict the firm's international operations with the pandemic?Lack of capital	5,2%	75,0%	14,2%
Total		Expected Count	269,0	40,0	309,0
		% within What were the main limitations/ constraints when internationalizing, before the pandemic? Lack of capital	87,1%	12,9%	100,0%
		% within Do these factors still restrict the firm's international operations with the pandemic?Lack of capital	100,0%	100,0%	100,0%

Table 39: Lack of capital before and during the pandemic Crosstabulation

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	121,668 ^a	1	,000		
Continuity Correction ^b	113,608	1	,000		
Likelihood Ratio	66,422	1	,000		
Fisher's Exact Test				,000	,000
Linear-by-Linear Association	121,274	1	,000		
N of Valid Cases	309				

a. 1 cells (25,0%) have expected count less than 5. The minimum expected count is 2,16.

b. Computed only for a 2x2 table

Table 40: Results of Chi-square test of independence (Lack of capacity)

What were the main limitations/ constraints when internationalizing, before the pandemic? Lack of capacity * Do these factors still restrict the firm's international operations with the pandemic? Lack of capacity Crosstabulation

			Do these factors still restrict the firm's international operations with the pandemic? Lack of capacity		Total
			No	Yes	
What were the main limitations/ constraints when internationalizing, before the pandemic? Lack of capacity	No	Expected Count	259,2	20,8	280,0
		% within What were the main limitations/ constraints when internationalizing, before the pandemic? Lack of capacity	97,9%	2,1%	100,0%
		% within Do these factors still restrict the firm's international operations with the pandemic? Lack of capacity	95,8%	26,1%	90,6%
	Yes	Expected Count	26,8	2,2	29,0
		% within What were the main limitations/ constraints when internationalizing, before the pandemic? Lack of capacity	41,4%	58,6%	100,0%
		% within Do these factors still restrict the firm's international operations with the pandemic? Lack of capacity	4,2%	73,9%	9,4%
Total	Expected Count	286,0	23,0	309,0	
	% within What were the main limitations/ constraints when internationalizing, before the pandemic? Lack of capacity	92,6%	7,4%	100,0%	
	% within Do these factors still restrict the firm's international operations with the pandemic? Lack of capacity	100,0%	100,0%	100,0%	

Table 41: Lack of capacity before and during the pandemic Crosstabulation

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	,336 ^a	1	,562		
Continuity Correction ^b	,088	1	,767		
Likelihood Ratio	,361	1	,548		
Fisher's Exact Test				,778	,404
Linear-by-Linear Association	,335	1	,563		
N of Valid Cases	285				

a. 1 cells (25,0%) have expected count less than 5. The minimum expected count is 4,02.

b. Computed only for a 2x2 table

Table 42: Results of Chi-square test of independence (Technological and innovative breakthroughs)

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	,015 ^a	1	,904		
Continuity Correction ^b	,000	1	1,000		
Likelihood Ratio	,014	1	,905		
Fisher's Exact Test				1,000	,573
Linear-by-Linear Association	,015	1	,904		
N of Valid Cases	285				

a. 1 cells (25,0%) have expected count less than 5. The minimum expected count is 1,85.

b. Computed only for a 2x2 table

Table 43: Results of Chi-square test of independence (Government exportation support programs)

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	,129 ^a	1	,720		
Continuity Correction ^b	,024	1	,876		
Likelihood Ratio	,127	1	,721		
Fisher's Exact Test				,691	,431
Linear-by-Linear Association	,128	1	,720		
N of Valid Cases	285				

a. 0 cells (0,0%) have expected count less than 5. The minimum expected count is 10,12.

b. Computed only for a 2x2 table

Table 44: Results of Chi-square test of independence (Firm's product/service innovation)

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	,121 ^a	1	,728		
Continuity Correction ^b	,000	1	1,000		
Likelihood Ratio	,115	1	,734		
Fisher's Exact Test				,725	,468
Linear-by-Linear Association	,121	1	,728		
N of Valid Cases	285				

a. 1 cells (25,0%) have expected count less than 5. The minimum expected count is 2,50.

b. Computed only for a 2x2 table

Table 45: Results of Chi-square test of independence (Excess capacity)

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	,501 ^a	1	,479		
Continuity Correction ^b	,263	1	,608		
Likelihood Ratio	,495	1	,482		
Fisher's Exact Test				,560	,301
Linear-by-Linear Association	,499	1	,480		
N of Valid Cases	285				

a. 0 cells (0,0%) have expected count less than 5. The minimum expected count is 12,18.

b. Computed only for a 2x2 table

Table 46: Results of Chi-square test of independence (Firm's know-how)

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	6,530 ^a	1	,011		
Continuity Correction ^b	5,501	1	,019		
Likelihood Ratio	6,010	1	,014		
Fisher's Exact Test				,019	,012
Linear-by-Linear Association	6,507	1	,011		
N of Valid Cases	285				

a. 0 cells (0,0%) have expected count less than 5. The minimum expected count is 8,92.

b. Computed only for a 2x2 table

Table 47: Results of Chi-square test of independence (Firm's global network)

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	,017 ^a	1	,897		
Continuity Correction ^b	,000	1	1,000		
Likelihood Ratio	,017	1	,897		
Fisher's Exact Test				1,000	,550
Linear-by-Linear Association	,017	1	,897		
N of Valid Cases	285				

a. 0 cells (0,0%) have expected count less than 5. The minimum expected count is 7,29.

b. Computed only for a 2x2 table

Table 48: Results of Chi-square test of independence (Firm's other sources of competitive advantage)

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	,064 ^a	1	,801		
Continuity Correction ^b	,002	1	,968		
Likelihood Ratio	,064	1	,800		
Fisher's Exact Test				1,000	,494
Linear-by-Linear Association	,063	1	,801		
N of Valid Cases	285				

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 8.59.

b. Computed only for a 2x2 table

Table 49: Results of Chi-square test of independence (National market saturation)

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	,178 ^a	1	,673		
Continuity Correction ^b	,038	1	,845		
Likelihood Ratio	,173	1	,677		
Fisher's Exact Test				,654	,411
Linear-by-Linear Association	,177	1	,674		
N of Valid Cases	285				

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 7,07.

b. Computed only for a 2x2 table

Table 50: Results of Chi-square test of independence (Foreign market opportunities)

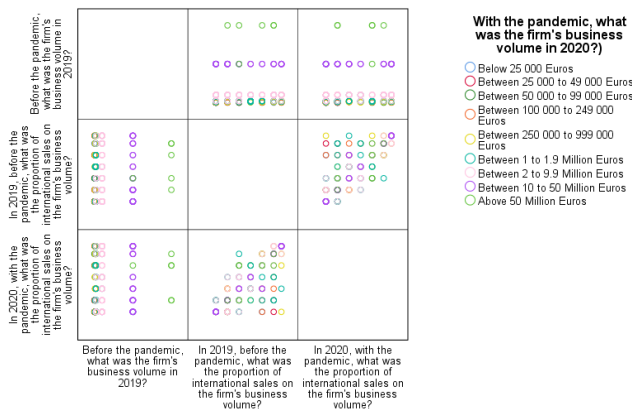
Correlations

		With the pandemic, what was the firm's business volume in 2020?	Before the pandemic, what was the firm's business volume in 2019?	In 2019, before the pandemic, what was the proportion of international sales on the firm's business volume?	In 2020, with the pandemic, what was the proportion of international sales on the firm's business volume?
With the pandemic, what was the firm's business volume in 2020?	Pearson Correlation	1	,910**	,064	,103
	Sig. (2-tailed)		,000	,281	,083
	N	284	283	284	284
Before the pandemic, what was the firm's business volume in 2019?	Pearson Correlation	,910**	1	,113	,138*
	Sig. (2-tailed)	,000		,057	,020
	N	283	285	285	285
In 2019, before the pandemic, what was the proportion of international sales on the firm's business volume?	Pearson Correlation	,064	,113	1	,879**
	Sig. (2-tailed)	,281	,057		,000
	N	284	285	309	309
In 2020, with the pandemic, what was the proportion of international sales on the firm's business volume?	Pearson Correlation	,103	,138*	,879**	1
	Sig. (2-tailed)	,083	,020	,000	
	N	284	285	309	309

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

* Correlation is significant at the 0.05 level (2-tailed).

Table 51: Correlation Matrix of variables firm's business volume in 2020, firm's business volume in 2019, proportion of international sales in 2019 and proportion of international sales in 2020



Graph 5: Scatterplot of variables firm's business volume in 2020, firm's business volume in 2019, proportion of international sales in 2019 and proportion of international sales in 2020

Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method
1	In 2020, with the pandemic, what was the proportion of international sales on the firm's business volume?, Before the pandemic, what was the firm's business volume in 2019?, In 2019, before the pandemic, what was the proportion of international sales on the firm's business volume? ^b		Enter

a. Dependent Variable: With the pandemic, what was the firm's business volume in 2020?
b. All requested variables entered.

Table 52: Variables entered and removed from the MLRM

Model Summary^b

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	,911 ^a	,830	,828	8,202482	1,920

a. Predictors: (Constant), In 2020, with the pandemic, what was the proportion of international sales on the firm's business volume?, Before the pandemic, what was the firm's business volume in 2019?, In 2019, before the pandemic, what was the proportion of international sales on the firm's business volume?
b. Dependent Variable: With the pandemic, what was the firm's business volume in 2020?

Table 53: Variability of Firm's business volume in 2020 explained by the independent variables

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	91831,302	3	30610,434	454,966	,000 ^b
	Residual	18771,319	279	67,281		
	Total	110602,622	282			

a. Dependent Variable: With the pandemic, what was the firm's business volume in 2020?
b. Predictors: (Constant), In 2020, with the pandemic, what was the proportion of international sales on the firm's business volume?, Before the pandemic, what was the firm's business volume in 2019?, In 2019, before the pandemic, what was the proportion of international sales on the firm's business volume?

Table 54: ANOVA test for significance of the independent variables to explain the Firm's business volume in 2020

Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method
1	More than 10 years dummy, 3 to 5 years dummy, 6 to 10 years dummy ^b		Enter

a. Dependent Variable: In 2020, with the pandemic, what was the proportion of international sales on the firm's business volume?
b. All requested variables entered.

Table 55: Variables entered and removed from the MLRM

Model Summary^b

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	,417 ^a	,174	,166	29,87671%	1,975

a. Predictors: (Constant), More than 10 years dummy, 3 to 5 years dummy, 6 to 10 years dummy

b. Dependent Variable: In 2020, with the pandemic, what was the proportion of international sales on the firm's business volume?

Table 56: Variability of proportion of international sales in 2020 explained by the independent variables

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	57384,539	3	19128,180	21,429	,000 ^b
	Residual	272248,470	305	892,618		
	Total	329633,010	308			

a. Dependent Variable: In 2020, with the pandemic, what was the proportion of international sales on the firm's business volume?

b. Predictors: (Constant), More than 10 years dummy, 3 to 5 years dummy, 6 to 10 years dummy

Table 57: ANOVA test for significance of the independent variables to explain the proportion of international sales in 2020

Residuals Statistics^a

	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	20,9211%	58,9308%	46,6990%	13,64967%	309
Residual	-43,93082%	62,40741%	0,00000%	29,73085%	309
Std. Predicted Value	-1,889	,896	,000	1,000	309
Std. Residual	-1,470	2,089	,000	,995	309

a. Dependent Variable: In 2020, with the pandemic, what was the proportion of international sales on the firm's business volume?

Table 58: Residuals Statistics

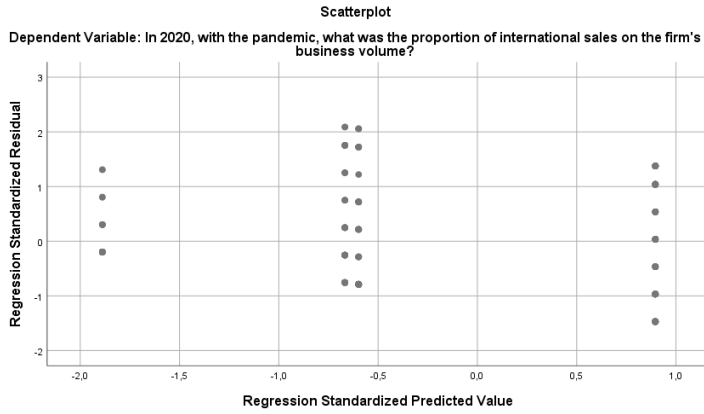
Correlations

		1 to 2 years dummy	3 to 5 years dummy	6 to 10 years dummy	More than 10 years dummy	In 2020, with the pandemic, what was the proportion of international sales on the firm's business volume?	Unstandardized Residual
1 to 2 years dummy	Pearson Correlation	1	-.172**	-.179**	-.384**	-.296**	,000
	Sig. (2-tailed)		,002	,002	,000	,000	1,000
	N	310	310	310	310	309	309
3 to 5 years dummy	Pearson Correlation	-.172**	1	-.220**	-.471**	-.128*	,000
	Sig. (2-tailed)	,002		,000	,000	,024	1,000
	N	310	310	310	310	309	309
6 to 10 years dummy	Pearson Correlation	-.179**	-.220**	1	-.492**	-.120*	,000
	Sig. (2-tailed)	,002	,000		,000	,035	1,000
	N	310	310	310	310	309	309
More than 10 years dummy	Pearson Correlation	-.384**	-.471**	-.492**	1	,386**	,000
	Sig. (2-tailed)	,000	,000	,000		,000	1,000
	N	310	310	310	310	309	309
In 2020, with the pandemic, what was the proportion of international sales on the firm's business volume?	Pearson Correlation	-.296**	-.128*	-.120*	,386**	1	,909**
	Sig. (2-tailed)	,000	,024	,035	,000		,000
	N	309	309	309	309	309	309
Unstandardized Residual	Pearson Correlation	,000	,000	,000	,000	,909**	1
	Sig. (2-tailed)	1,000	1,000	1,000	1,000	,000	
	N	309	309	309	309	309	309

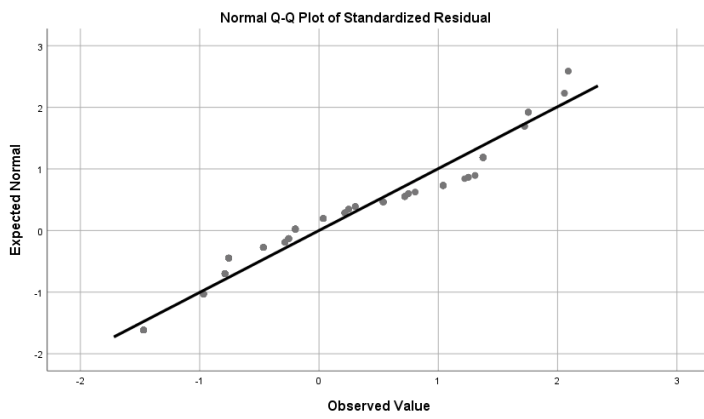
** Correlation is significant at the 0.01 level (2-tailed).

* Correlation is significant at the 0.05 level (2-tailed).

Table 59: Independent variables and residuals correlations



Graph 6: Scatterplot to verify residuals' homoscedasticity



Graph 7: Residuals Q-Q Plot

Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method
1	Strongly agree dummy, Strongly Disagree dummy, Neither agree nor disagree dummy, Agree dummy ^b		Enter

a. Dependent Variable: With the pandemic, what was the firm's business volume in 2020?

b. All requested variables entered.

Table 60: Variables entered and removed from the MLRM

Model Summary^b

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.134 ^a	.018	.004	19,741575	1,992

a. Predictors: (Constant), Strongly agree dummy, Strongly Disagree dummy, Neither agree nor disagree dummy, Agree dummy

b. Dependent Variable: With the pandemic, what was the firm's business volume in 2020?

Table 61: Variability of Firm's business volume in 2020 explained by the independent variables

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	2001,130	4	500,283	1,284	,277 ^b
	Residual	108734,613	279	389,730		
	Total	110735,743	283			

a. Dependent Variable: With the pandemic, what was the firm's business volume in 2020?

b. Predictors: (Constant), Strongly agree dummy, Strongly Disagree dummy, Neither agree nor disagree dummy, Agree dummy

Table 62: ANOVA test for significance of the independent variables to explain the Firm's business volume in 2020

ANNEX E: Online Questionnaire

Pandemic context and implications for Portuguese SMEs' Internationalization

This questionnaire has the purpose to better understand the implications of a pandemic context to Portuguese SMEs which are internationalized. The main goal is to perceive the perspectives of the internationalized SMEs on what changed, how the company overcame/benefited from the outcomes of this period.

Your contribution to this study is highly appreciated.

Perspectives before and during the pandemic

1. What were the firm's expectations for 2020 before the pandemic?

- Company would grow rapidly
- Company would grow at a constant rate
- Company would grow only if it internationalized its operations more
- Company would neither grow nor decrease its growth pace
- Company would decrease its growth pace
- Company would decrease its growth pace rapidly

2. What were the firm's expectations for 2020 during the first lockdown?

- Company would grow rapidly
- Company would grow at a constant rate
- Company would grow only if it internationalized its operations more
- Company would neither grow nor decrease its growth pace
- Company would decrease its growth pace
- Company would decrease its growth pace rapidly

3. What actually happened to the firm in 2020?

- Company grew rapidly
- Company grew at a constant rate
- Company was able to grow after internationalizing more
- Company neither grew nor decreased its growth pace
- Company decreased its growth pace
- Company decreased its growth pace rapidly

4. On a scale from 1 to 5, how negatively affected was the firm by the pandemic?

	1	2	3	4	5	
Not affected at all	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Extremely affected

5. On a scale from 1 to 5, how positively affected was the firm by the pandemic?

	1	2	3	4	5	
Not affected at all	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Extremely affected

6. In your opinion, during the pandemic, internationalization was...

- a source of competitive advantage
- a way to grow
- the only way for the firm to survive
- a risk/limitation
- a disadvantage

Firm's Characteristics

7. What is the firm's size?

- Micro (<10 employees)
- Small (<50 employees)
- Medium (<250 employees)

8. What is the firm's activity sector?

- Services
- Industry
- Commerce

9. Do you believe the firm faced more risks because of its activity sector?

- Yes
- No
- Does not know/ Does not answer

10. Based on the firm's activity sector, indicate the main threats arising from this pandemic

11. Before the pandemic, what was the firm's business volume in 2019?

- Above 50 Million Euros
- Between 10 to 50 Million Euros
- Between 2 to 9.9 Million Euros
- Between 1 Million to 1.9 Million Euros
- Between 250 000 to 999 000 Euros
- Between 100 000 to 249 000 Euros
- Between 50 000 to 99 000 Euros
- Between 25 000 to 49 000 Euros
- Below 25 000 Euros
- Does not know/ Does not answer

12. With the pandemic, what was the firm's business volume in 2020?

- Above 50 Million Euros
- Between 10 to 50 Million Euros
- Between 2 to 9.9 Million Euros
- Between 1 Million to 1.9 Million Euros
- Between 250 000 to 999 000 Euros
- Between 100 000 to 249 000 Euros
- Between 50 000 to 99 000 Euros
- Between 25 000 to 49 000 Euros
- Below 25 000 Euros
- Does not know/ Does not answer

13. With the pandemic, what is the expected firm's business volume in 2021?

- Above 50 Million Euros
- Between 10 to 50 Million Euros
- Between 2 to 9.9 Million Euros
- Between 1 Million to 1.9 Million Euros
- Between 250 000 to 999 000 Euros
- Between 100 000 to 249 000 Euros
- Between 50 000 to 99 000 Euros
- Between 25 000 to 49 000 Euros
- Below 25 000 Euros
- Does not know/ Does not answer

14. Before the pandemic, what was the proportion of international sales on the firm's business volume in 2019?

- 0%-15%
- 16%-30%
- 31%-45%
- 46%-60%
- 61%-75%
- 76%-90%
- 91%-100%

15. With the pandemic, what was the proportion of international sales on the firm's business volume in 2020?

- 0%-15%
- 16%-30%
- 31%-45%
- 46%-60%
- 61%-75%
- 76%-90%
- 91%-100%

16. Where is the firm located?

- Viana do Castelo
- Braga
- Vila Real
- Bragança
- Porto
- Aveiro
- Viseu
- Guarda
- Coimbra
- Castelo Branco
- Leiria
- Santarém
- Lisboa
- Portalegre
- Setúbal
- Évora
- Beja
- Faro
- Madeira
- Azores

17. How many years has the firm been operating abroad?

- 1 to 2 years
- 3 to 5 years
- 6 to 10 years
- More than 10 years

18. Do you believe the firm's experience operating abroad helped it overcome the pandemic adversities?

- Yes, most of them
- Yes but only some of them
- No

19. Which continents did the firm export to before the pandemic?

- North America
- South America
- Africa
- Asia
- Europe
- Oceania

20. Which continents did the firm export to during the pandemic?

- North America
- South America
- Africa
- Asia
- Europe
- Oceania

21. If the answer to the abovementioned question changed from its previous one, briefly explain that change.

22. Considering the following aspects, please give your level of agreement for eachone regarding its potential for the growth and continuity of the firm's operations, during the pandemic.

	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree
Firm's Network was essential for the growth and continuity of the firm's operations.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Inimitable Resources were essential for the growth and continuity of the firm's operations.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Entrepreneurial Know-how was essential for the growth and continuity of the firm's operations.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Electronic Marketing was essential for the growth and continuity of the firm's operations.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

23. What was the firm's internationalization strategy, before the pandemic?

- Direct export
- Cooperation with another firm
- Direct entry (basing the firm in a new market)
- Indirect entry (through licensing/franchising agreements,etc.)
- Electronic marketing

24. Did the firm need to adapt or change its internationalization strategy, with the pandemic?

- Yes
- No

25. In which way(s)?

Digitalization Factor

26. With the pandemic, what were the main communication channels to keep in contact with clients?

- E-mail
- Presential
- Telephone
- Digital Platforms

27. Can you identify a new digitalization transformation in the firm?

- Yes
- No

28. Which one(s)?

29. Please give your level of agreement with the following sentence:
"Digitalization impacted the firm positively".

	1	2	3	4	5	
Strongly Disagree	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Strongly Agree

30. Briefly justify.

New limitations and opportunities arising from the pandemic

31. What were the main external motivation factors that caused the firm to internationalize?

- National market saturation
- Foreign market opportunities
- Technological and innovative breakthroughs
- Government exportation support programs

Other: _____

32. What were the main internal motivation factors that caused the firm to internationalize?

- Firm's product/service innovation
- Excess capacity
- Firm's know-how
- Firm's global network
- Firm's other sources of competitive advantage

Other

33. Did the aforementioned factors change during the pandemic? If yes, which one(s)?

34. In your opinion, did the pandemic generate new opportunities/stimulation factors for internationalizing?

- Yes
- No

35. Which one(s)?

36. Which factors limited the firm during the pandemic? Choose the one(s) you agree with.

- Firm Size
- Antiquity/ Number of years internationalized
- Number of markets the company is operating in
- The markets the company is operating in
- National market saturation
- Less demand
- More competition
- Company's resources
- Managerial lack of experience
- Company's network
- Company's activity sector
- Company's internationalization strategy

Other:

37. What were the main limitations/ constraints when internationalizing, before the pandemic?

- Lack of demand
- Cultural distance
- Unfavorable international regulations
- Exchange rate/ price fluctuations
- Exportation costs/risks
- Political/economic instability
- Market uncertainty
- Limited/lack of resources
- Lack of know-how
- Lack of capital
- Lack of capacity

Other: _____

38. Do these factors still restrict the firm's international operations with the pandemic?

- Lack of demand
- Cultural distance
- Unfavorable international regulations
- Exchange rate/ price fluctuations
- Exportation costs/risks
- Political/economic instability
- Market uncertainty
- Limited/lack of resources
- Lack of know-how
- Lack of capital
- Lack of capacity

Other: _____

39. Which new limitations has the firm faced with the pandemic?

40. Please give your level of agreement with the following sentence: "My firm benefited or is benefiting from positive implications (new opportunities) arising from the pandemic."

1 2 3 4 5

Strongly Disagree Strongly Agree

41. Please give your level of agreement with the following sentence: "My firm overcame or believes it will overcome the negative implications (new limitations) arising from the pandemic."

1 2 3 4 5

Strongly Disagree Strongly Agree

42. Please give your level of agreement with the following sentence: "There are more limitations than opportunities arising from the pandemic."

1 2 3 4 5

Strongly Disagree Strongly Agree

Perspectives for the Future

43. What are the firm's expectations for 2021? (1st semester)

- Company will grow rapidly
- Company will grow at a constant rate
- Company will grow only if it internationalizes its operations more
- Company will neither grow nor decrease its growth pace
- Company will decrease its growth pace
- Company will decrease its growth pace rapidly

44. What are the firm's expectations for 2021? (2nd semester)

- Company will grow rapidly
- Company will grow at a constant rate
- Company will grow only if it internationalizes its operations more
- Company will neither grow nor decrease its growth pace
- Company will decrease its growth pace
- Company will decrease its growth pace rapidly

45. In your opinion, how long will it take for the company to recover?

- 1 to 2 years
- 3 to 5 years
- More than 5 years