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The Internationalization of Portuguese Scaleups

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Abstract

Given their high economic impact and innovative nature, scaleups have in recent years attracted considerable attention from investors, policymakers, and public institutions alike. A key part of the scaling up process is the entrance in new markets. Internationalization is essential for startups that want to grow, whether in terms of revenue, employment, or productivity. Thus, scalability is intrinsically connected to a firm's ability to internationalize its business model. Research, however, has mainly focused on the internationalization of small, innovative, and resource-constrained startups, overlooking the fact that many of them disappear over time. This created a gap in literature regarding the internationalization paths and strategies adopted by scaleups. In light of such scarcity of previous works, particularly in the Portuguese case, the research question that emerges is: What are the internationalization paths and strategies adopted by Portuguese scaleups? From this research question, another sub-question arises: Is the internationalization path of scaleups consistent with existing theoretical frameworks of internationalization? An empirical study grounded on the experience of Portuguese scaleup companies in which primary data was collected through 11 in-depth interviews to founders of scaleups was developed.

The key findings in this study indicate that the small size of the domestic market and growth aspirations worked as triggers of early internationalization of scaleups. Because the entrance in new markets happened soon after foundation, in order to grow, firms leveraged the knowledge and networks of domestic and foreign investors, local partnerships and ICT resources. In terms of entry modes, it was found that scaleups are more prone to establish foreign subsidiaries that provide higher control levels, contrary to startups. Additionally, firms select new markets to enter mostly based on the market's dimension and potential and often encounter barriers resultant from linguistic and cultural distance and legal requirements. These barriers seem to be more easily surpassed due to the flexibility of the business model. Lastly, the international success of these firms mostly relies on offers that are highly innovative, disruptive or of superior quality than those offered by competitors. Although no internationalization framework fully explains the international paths of these firms, strong links were found with INV/BG theories and Network Models.

Key words: scaleup; startup; internationalization; business model scalability; entrepreneurship.

Resumo

Recentemente, as *scaleups* têm atraído a atenção de investidores, responsáveis políticos e instituições públicas devido ao seu caráter inovador e elevado impacto económico. Uma parte fundamental do processo de "escalar" e crescer, seja em termos de receitas, emprego ou produtividade é a internacionalização. Assim, a escalabilidade está intrinsecamente ligada à capacidade de uma empresa em internacionalizar o seu modelo de negócio. Investigações prévias, contudo, tem-se concentrado principalmente na internacionalização de pequenas startups, inovadoras, mas com recursos limitados, ignorando o facto de que muitas delas falham. Isto criou uma lacuna na literatura relativa às trajetórias e estratégias de internacionalização adotadas pelas *scaleups*. Face a esta escassez de trabalhos anteriores, particularmente no caso português, a questão da investigação que surge é: Quais são as trajetórias e as estratégias de internacionalização seguidas pelas *scaleups* portuguesas? A partir desta questão de investigação, surge uma segunda: Serão os padrões de internacionalização das *scaleups* coerentes com os modeles teóricos de internacionalização existentes? Para responder a estas questões, foi desenvolvido um estudo empírico baseado na experiência das *scaleups* portuguesas no qual se recolheram dados através de 11 entrevistas a fundadores e representantes destas empresas. As principais conclusões deste estudo indicam que a pequena dimensão do mercado interno, conjuntamente com aspirações de crescimento desencadearam a rápida internacionalização das *scaleups*. Sendo que a entrada em novos mercados se deu pouco após a fundação, para crescerem no estrangeiro, as empresas aproveitaram o conhecimento e redes de contactos de investidores nacionais e estrangeiros. Relativamente aos modos de entrada, verificou-se que as *scaleups* são mais propensas ao estabelecimento de subsidiárias, ao contrário das *startups*. Além disso, as empresas selecionam novos mercados para entrar principalmente com base na dimensão e potencial desses mercados e deparam-se frequentemente com barreiras resultantes da distância linguística e cultural e dos requisitos legais. Por último, o sucesso internacional destas empresas depende sobretudo da oferta de produtos e serviços altamente inovadores, disruptivos ou de qualidade superior em relação à concorrência. Embora nenhum modelo de internacionalização explique totalmente as trajetórias internacionais destas empresas, foram encontradas fortes ligações com os modelos de BG/INV e Network Models.

Palavras-chave: scaleup; startups; internacionalização; escalabilidade do modelo de negócio; empreendedorismo.

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Introduction: motivations, research subject and objectives

Considering the hypercompetitive environment companies face nowadays, entrepreneurs must strive for original, sustainable, and scalable business models (Blank & Dorf, 2012; Durmaz & Ílhan, 2015). The attention given in the last decades to the startup phenomenon reveals a great focus on initial stages of the business cycle, overlooking the fact that many startup companies have limited growth ambitions and chances of survival (Shane, 2009). Contrastingly, research has revealed that just a few unusually scaling ventures can generate disproportionate social and economic benefits and transform the entrepreneurial culture in a region by means of new technology, services, wealth creation and increased high skilled employment (Coutu, 2014; Isenberg, 2012; Reypens, van Blitterswijk, & Haley, 2019).

In recent years, the world has seen startups such as Airbnb and Uber emerge and scale globally at an incredibly fast pace while this type of internationalization process has not been systematically studied (Bailetti, 2012; Strandberg, 2018). The earlier a startup internationalizes, the stronger its aptitude for exploiting growth-seeking opportunities worldwide (Bailetti, 2012). Hence, scalability is intrinsically connected to a firm's ability to internationalize its business model (Jabłoński, 2016) – particularly when national markets are too small, mature, or isolated to generate significant growth (Blank, 2014; Neubert, 2018). At the same time, scalability is critically linked to the companies' level of digitalization (Autio & Zander, 2016). Digitalization allows companies to internationalize and achieve significant scale faster and without possessing a critical mass of employees or other tangible assets (OECD, 2018).

Despite the number of studies, International Entrepreneurship (IE) literature is fragmented, and lacks general explanations of how and why scaleups develop and implement their internationalization strategies, and what makes them successful (da Rosa, de Mello, & de Castro Ferreira, 2018). The blatant scarcity of works on this topic seems to arise both from the newness of the scaleup concept (Coviello, 2019; Monteiro, 2019) and from the fact that existing literature has not kept abreast with the development of this type of firms, which can be confirmed by the disparity between the number of websites, programmes and events aiming scaleups (or the scaling up of startups) and the lack of results in reference databases for the term "scaleup" or "scale-up" (Appendix A) - which calls for further research.

After asserting the novelty of this work, it becomes essential to explain the reasons behind our focus on the Portuguese case. On one hand, given the size of their domestic market, Portuguese firms must internationalize earlier in order to exploit growth opportunities in foreign markets (Bailetti, 2012; EIT Digital & BGI, 2019). Moreover, there is limited literature about scaleups in Portugal and, to the best of our knowledge, none about the internationalization paths of these companies. Lastly, recent reports indicated that the Portuguese scaleup ecosystem, despite being quite recent, has been growing fast and gaining momentum (EIT Digital & BGI, 2019).

Altogether, these reasons emphasise the need for and the originality of the present study, which entails a pioneering research on Portuguese scaleup companies. The dissertation aims to address the following research question: "**What are the internationalization paths and strategies adopted by Portuguese scaleups**?" In order to answer the main research question, a second one arises:

- Is the international path of scaleups consistent with existing theoretical frameworks of internationalization?

The main objectives of this dissertation, which guided its respective structure, were:

(1) To conduct a comprehensive literature review providing the foundations for defining key concepts and for the systematization of the most relevant theoretical frameworks of internationalization that will inform the second part of the dissertation. Additionally, the first chapter analyses literature on entry modes, followed by an assessment of the links between key notions that underpin the dissertation: internationalization, scalability, and digitalization. Lastly, types of funding available to scaleups are examined.

(2) To implement an empirical study grounded on structured interviews targeting Portuguese founders and CEOs of scaleups with the goal of obtaining in-depth insights into their international market engagement choices, and into whether the relevant IB theories are pertinent to understand these paths. In order to answer the research questions, several topics had to be examined including: time between foundation and internationalization, entry modes, factors relevant in the selection of new markets, the companies' motivations to internationalize, success factors in international markets and barriers faced in the process. It is also expected that this research will enable to draw conclusions on the impact of such choices on the transformation of startups into scaleups, as well as to inform appropriate public policy measures.

Chapter 1. Literature review

This chapter of the dissertation centres firstly on clarifying main relevant definitions that will be necessary throughout the rest of the study (startup and scaleup) and on identifying the stages of an entrepreneurial venture's life cycle. The following section analyses relevant literature on entrepreneurial ecosystems and particularly on the Portuguese ecosystem. Then, the theoretical frameworks of internationalization that underpin the topic under research will be examined as well as literature on entry modes. The last section of the literature review explores links between digitalization, business model scalability and the internationalization of scaleups and concludes with an assessment of the sources of financing that potentiate the scaling up process.

1.1. Clarifying concepts: startup and scaleup

The two following subsections will present several definitions provided by diverse authors and institutions regarding the terms startup and scaleup. Given the lack of commonly accepted definitions for both terms, this section is essential for the present study. After a detailed analysis of these concepts, we address the interconnection of the two concepts in the entrepreneurial venture's life cycle.

1.1.1. Startup

The inexistence of a universally accepted definition for the term "startup" has been mostly ascribed to the usage of several different metrics: age, profitability, growth metrics and others (Autio, 2016; European Commission, 2016). This subchapter is dedicated at exploring several definitions given by different authors and culminates in a working definition of "startup".

A part of the confusion around this concept seems to derive from unresolved disparities between the concepts of "startup" and "SMEs". Relevant literature posits that while a SME is stable and risk averse firm that targets safe market niches and does not seek to disrupt the status quo, the term "startup" refers to firms working towards innovation and development of products or services with strong potential for wealth or employment creation that often challenge established incumbents. (Autio, 2016; Mercandetti, Larbig, Tuozzo, & Steiner, 2017). Moreover, there are critical policy implications in differentiating SMEs from startups and scaleups. While supporting SMEs can be done through subsidies, generic resource provision, and advisory services, such measures are not as fitting for innovative startups that are considerably growth oriented, in which case policies should focus, for instance, on stimulating internationalization (Autio, 2016).

Furthermore, startups have also regularly been defined merely as small businesses in their initial stages (e.g. Criscuolo, Nicolaou, & Salter, 2012; OECD, 2016). Although startups and new enterprises share some mutual features such as age and size, age-based definitions are, as pointed out by Autio (2016), inadequate for they do not denote the characteristics (e.g. growth orientation) that are frequently associated with startups in the extant literature. Nonetheless, this concept has been evolving in the past few years to meet the type of firm experts, investors and entrepreneurs perceive as a startup. For instance, in a recent EU Startup Monitor report, Steigertahl,, Mauer and Say (2018) used three criteria simultaneously to conceptualize startups: age – only firms younger than 5 to 10 years depending on sector - innovation – of the product, service or business model – and the pursuit of scalability - intention to grow whether in number of employees and/or markets in which the firm operates.

Ries (2011, p. 7) presented a definition in which "a start-up is a human institution designed to create a new product or service under conditions of extreme uncertainty" while Tanev (2017) regards startups as new international ventures that leverage innovative technologies and business models to generate new market niches. Blank and Dorf (2012), for instance, employed a definition in which startups are new - typically 3 to 5 years - independent, and temporary organizations that have not yet settled upon a scalable business model and are still experimenting intensely. Likewise, Filippov and Hofheinz (2016), defined startups as entrepreneurial ventures designed to search for a repeatable and scalable business model and highlight that these newly created companies are usually highly innovative and built on ideas, technologies or business models that did not exist before. Thus, startups exhibit features such as innovativeness, scalability, and rapid growth, particularly during their initial stages of activity.

Autio (2016, p.8) defines startup as a "new, independent firm, up to six years old, which is strongly growth-oriented, has not yet settled upon a scalable business model, and spends at least 15% of its operating expenses on R&D" (Autio, 2016, p. 8). Expenditure in research and development relates to the fact that continuous innovation is essential for the maintenance of a startups – and scaleups – competitive advantage (Zahra & George, 2002). Also, due to this innovative nature, startups are often associated with high technology sectors. However, and considering the pervasive effect that IT and Web 2.0 are having in the overall economic landscape, a comprehensive definition of startup cannot exclude firms operating outside IT sectors (Autio, 2016). An integration of the main definitions of startup can be observed in Table A.1. – Appendix C.

In light of the different definitions present above, in this dissertation we adopt the following working definition of startup companies:

> *New firms – up to 5 years – developed by an entrepreneurial individual (or team) that leverage an innovative product or service and seek to grow and implement a scalable business model.*

1.1.2. Scaleup

As mentioned before, efficient scalability, which transforms startups into scaleups (Coutu, 2014; Monteiro, 2019) is a great challenge faced by entrepreneurs. A "scalable startup" is capable of seizing an innovative idea and search for a scalable and repeatable business model that will transform it into a high growth, highly profitable company (Blank, 2013).

The "scaleup" concept was envisioned to be similar to the term startup in order to establish the connection between the process of first starting and then scaling a company (Hellmann, Frydrych, Hicks, & Rauch, 2016). Since the term "scaleup" has only quite recently (in the last 4 to 5 years) materialised in the business vocabulary, it still does not possess a universally accepted definition (Coviello, 2019; Monteiro, 2019).

Broadly defined, scaleups can be regarded as high potential startups that have gained momentum and are breaking new barriers (Monteiro, 2017) or simply as successful startups (Bailetti, 2012). Nevertheless, growing interest in this typology of company has led several authors to propose distinct definitions, which will be explored in the next paragraphs.

First, it is frequent to see scaleups defined through the terminology of high-growth firms (HGFs) (Coviello, 2019; Hellman et al., 2016). According to the Eurostat-OECD (2007) Manual on Business Demography Statistics, HGFs are firms that possess more than 10 employees and have presented growth levels of at least 20 per cent a year for three consecutive years (in number of employees or profits). However, defining scaleups merely as HGF is a major limitation for research on scaleups (Coviello, 2019), given that "any scale-up is an HGF, but not every HGF is a scale-up" (Monteiro, 2019, p. 102) and that "scaling is not just about high growth" (Coviello, 2019 p. 5). Hence, while this definition is relevant for understanding the growth aspect of scaleups, if it is not combined with other criteria it could include any type of firm, from established companies to SMEs (Monteiro, 2019). In light of such limitations, Monteiro (2019) defined scaleups as a subset of HGF whose accelerated cycle of growth and wealth creation is fundamentally based on the scalability of its business model.

When studying scaleups, many authors consider the level of venture capital raised to date as the most appropriate criteria, given that equity financing plays a vital role in the survival and scaling up of startups (Davila, Foster, & Gupta, 2003; Pisoni & Onetti, 2016). Autio (2016), for instance, regards scaleups as new, entrepreneurial firms, up to 10 years old, that are clearly growth oriented and have attracted at least €1 Million of venture capital (VC) funding. Similarly, the Startup Europe Partnership Monitor (2017) defines scaleups as startups that raised over €1 million in VC funding. Mind the Bridge (2017, p. 2) regards scaleups has "fast-growing, high-tech companies that have raised at least $1M, with at least one round of funding after 2010". Once again, this measure has its limitations since it may fail to consider startups that are scaling-up in a sustainable way - such as bootstrapped companies – while at the same time including startups that raised enormous seed investment but are still in the "search phase" (Startup Europe Partnership Monitor, 2017).

Many authors have also focused their definitions on the scaling-up moment of startups. In other words, scaleups are companies that have proved a business concept and aim to deliver it to a wider audience through market penetration and geographic expansion (Hellmann et al., 2016). Likewise, Onetti (2014) defines a scaleup as a business still in development-stages, specific to high technology markets, that intends to grow in terms of market access, revenues and number of employees, adding value through the identification and execution of opportunities for collaborating with reputable firms. Duruflé, Hellmann and Wilson (2017) also provide a definition intrinsically connected to the lifecycle phases of startups. The authors describe scaleups as entrepreneurial companies that are past their exploratory phase, have determined their initial product or service offering and market segment and are entering a growth phase in which they aim significant market penetration. Zhao, Dalziel, Barge, Walker and Salminen (2019, p. 7) regard scaleups as "market validated firm[s] with high growth ambitions and potential for scalable business".

The Kauffman Foundation (2017, p. 10) defines a scaleup by emphasising employment growth: "employer firms up to ten years old and younger that start with fewer than fifty employees and grow to employ at least fifty people by their tenth year of operation".

Lastly, a different terminology used to refer to scaleups is that of high growth innovative enterprises (HGIE) (Kolar, 2014). HGIE have been described as "very diverse group, mostly characterised by the lack of common characteristics" (Kolar, 2014, p. 5). Coad, Daunfeldt, Hölzl, Johansson and Nightingale (2014) attempted to identify the main characteristics about what HGIE are and how they operate, which include:

- A small number of these firms generate a large share of new jobs;
- They are usually young but are rarely recent startups (known as *gazelles*: HGF up to five years old).
- They can be of all sizes (from SMEs to large firms) depending on the choice of growth indicators;
- They exist in all sectors – which denies the common belief that firms in high-tech sectors are more likely to achieve high growth – but the jobs they create tend to require higher human capital levels.

In light of the above, the working definition of scaleup adopted in the remainder of the literature review is as follows:

A high growth and successful startup – up to 10 years old - which has received considerable amounts of venture capital funding, validated a scalable business model and is looking to increase market penetration and geographic expansion.

1.1.3. Entrepreneurial venture's life cycle

Startups and scaleups can be regarded as different phases of an entrepreneurial business life cycle. Hence, when a startup matures to the point where it has a validated product, a clear and sizable market, and a robust distribution channel, it enters the scaleup phase (Hoffman & Yeh, 2018).

Building on Picken (2017) it is possible to identify four stages of an entrepreneurial venture's lifecycle: startup, transition, scaling, and exit. The author pointed out the main challenges faced by entrepreneurial firms as well as the company's characteristics at each stage. According to Picken's (2017) model, while at the startup stage the goal of these firms is to define and validate their business concept, in the scaling phase they have validated their business concept and possess a sustainable business model. Hence, at scaleup, entrepreneurial ventures aim is to add significant resources and leverage processes and partnerships to grow the business.

WEF (2014) put forward a distinct life cycle model to support innovation-driven entrepreneurship in Europe. The model identifies three phases of entrepreneurial growth: Stand-Up, Start-up and Scale-up. The first stage consists simply in the individual or team's decision to start a company or join an innovative venture. The second phase – startup – is about concept development and implementation of the business model. At startup, the entrepreneurs' focus is on gathering the financial resources and human capital to turn the firm into a viable, operating venture and to increase the prospect of scaling up. In the scaleup phase, the venture's objective becomes to scale sustainably or, in other words, to grow in terms of market access, revenues, added value and number of employees.

More recently, Coviello (2019) advanced a model of the stages of development of a tech scaleup similar to those exposed above. The model includes three stages: start-up, grow-up and scale-up and exposes the events within the company that take place at each stage, with higher focus on human capital management and culture. At scaleup, international markets become key to firms' growth and the company should have a diverse top management team dedicated to building efficient organizational structure (Coviello, 2019).

1.2. The rising importance of entrepreneurial ecosystems

Entrepreneurial ecosystems refer to a set of interdependent entrepreneurial actors, organizations (e.g. venture capitalists), institutions (e.g. universities) and processes which formally and informally combine efforts to connect, mediate and govern the performance within the local entrepreneurial environment (Mason & Brown, 2014).

Currently, most countries develop national entrepreneurship strategies which consist of stimulating entrepreneurial ecosystems and the scaling up of startups through several initiatives (Pisoni & Onetti, 2016). The most dynamic ecosystems usually locate in places where living standards are higher, business opportunities are exceptional and innovation networks can be found at the local, regional, and national level (Oksanen & Hautamäki, 2014). According to Davidsson and Henrekson (2002), a few factors characterize a vibrant entrepreneurial ecosystem: high rates of firm creation, high incidence of nascent entrepreneurs and the most profitable ideas result in a significant number of scaleups.

The entrepreneurial ecosystem plays a vital role in the performance of a firm, especially in its initial stages (Oksanen & Hautamäki, 2014). According to Passaro, Quinto, Rippa and Thomas (2016), at the startup stage, the ecosystem's actors that play the most relevant part are: incubators, accelerators, co-working spaces, crowdfunding platforms, venture capitalists and partners (suppliers, customers, SMEs, large firms, other startups).

Startup culture and entrepreneurship are proliferating across the world and different ecosystems have been gaining momentum and significantly impacting economies. New companies that scale fast are frequently inserted in a variety of networks and alliances that might help them to overcome resource constraints, especially under internationalization pressures (Chetty & Campbell-Hunt, 2004).

Over the last decade, Europe has witnessed a global change in the paradigm of entrepreneurship and innovation, reflected by the intense proliferation of startup programs and support projects (Mind the Bridge, 2019). In recent years, the European scaleup ecosystem revealed a sustained growth pattern (Mind the Bridge, 2019). Even so, Europe's performance falls short when compared with international benchmarks such as the United States and China. A major cause of this problem are the so-called "dual companies", defined as scaleups that move their headquarters abroad while typically maintaining a part of their (R&D, product development, engineering) operations domestic. In Europe, one out of seven scaleups are dual companies and approximately 83% of these migrating firms move to the United States mainly because they struggle to access later-stage funding in Europe (Mind the Bridge, 2017). Although dual companies raise on average 30% more capital than non-dual companies (Startup Europe Partnership Monitor, 2017), for Europe, losing these scaleups means losing the benefits they bring to the local economy. Recent works have also highlighted that building scaleup ecosystems is a lot harder and more ambitious than producing a greater number of startups. Moreover, fostering a vibrant scaleup ecosystem requires cooperation between multiple stakeholders including governments, universities, research institutes, NGOs, and companies (Zhao et al., 2019).

1.2.1. The Portuguese entrepreneurial ecosystem

Given our focus on Portuguese scaleups, this section is devoted to revealing main insights about the current state of the Portuguese startup and scaleup scene. Despite being quite recent, the Portuguese entrepreneurial ecosystem is growing at a fast pace (EIT Digital & BGI, 2019). Many factors have contributed to the growth of the Portuguese entrepreneurial ecosystem over the last decade, including: a highly skilled labour force resulting from a significant increase in the quality of higher education; existence of an advanced national technological infrastructure; increasing maturity of the various agents that compose the entrepreneurial ecosystem (business angels, venture capitalists, incubators and accelerators, associations and universities); favourable governmental policies to the development of entrepreneurship; and the consolidation of Portuguese tech companies that give credibility to the entrepreneurial effort and encourage others to participate (EIT Digital & BGI, 2019; TICE.PT, 2013).

Important Government initiatives include the Startup Portugal program, launched in 2016, aiming to "promote the creation and development of innovative companies, with fast and sustainable scalability, to showcase Portugal's unique infrastructures, as well as the country's open, prone to risk/venture culture." (retrieved from website: Startup Portugal, 2020, page no. not available). The Startup Portugal program has implemented several measures such as Startup Momentum, Startup Voucher, Incubation Voucher, creation of the National Incubators and Accelerators Network, among others. In 2018, the Portuguese government announced a new set of projects and an enhanced National Strategy for Entrepreneurship named Startup Portugal+ providing more public funds and supporting programs on three axis: Ecosystem, Funding and Internationalization (retrieved from website: Startup Portugal, 2020). The program implemented a variety of support initiatives such as the Startup Visa or the 200M co-investment fund. The latter is a matching fund dedicated to the promotion of co-investment in innovative startups with high potential in Portugal, through national and international private co-investors. The main goals of this fund rest in the attraction of international entrepreneurs, startups and funds to Portugal and on stimulating co-investment between Portuguese and international investors – particularly for firms at startup stage (retrieved from website: PME Investimentos, 2020).

Recent reports indicate that Portugal's venture capital financing stems mostly from foreign sources, particularly from the United States and United Kingdom, nevertheless, domestic investors play a vital role in financing startups at earlier stages (Seed) (EIT Digital & BGI, 2019).

In 2012, before most of the current public measures targeting entrepreneurial firms were available, Portugal Ventures was created and partly financed by public funds. Portugal Ventures focuses on growth, competitiveness and increasing the internationalization capacity of entrepreneurial businesses at initial funding stages (Pre-Seed and Seed) (Retrieved from website: Portugal Ventures, n.d.). More recently, the Portuguese government employed the funds provided by the European Innovation Fund to endow three Portuguese VCs, including: Indico Capital Partners, whose main goal is to select high potential tech startups and help them scale globally through VC funding ranging from €200k to €5M; Faber Ventures, an early-stage VC Fund dedicated to high-tech startups and Armilar Venture Partners that focuses on investment on leading-edge technologies across a range of sectors (Retrieved from website: Indico Capital Partners, n.d.; Faber Ventures, n.d. & Armilar Venture Partners, n.d.).

Apart from the increasing availability of capital and investment for startups, Portugal has a wide network of large university centres and research communities which continuously promote technological development. Another component of the ecosystem that has been reinforcing Portugal's image internationally since 2016 is the Web Summit – the largest technological conference with a focus on startups – which has been held annually in Lisbon from that year (retrieved from website: Startup Portugal, 2020).

1.3. Internationalization: Concept and theoretical foundations

Internationalization – defined as "expanding across country borders into geographic locations that are new to the firm" (Hitt, Hoskisson, & Ireland, 1994, p. 298) – has been systematically studied for almost half a century (Strandberg, 2018). By examining the most influential and relevant theoretical approaches to internationalization, the following section will establish a useful background and theoretical reference point to the empirical application of the dissertation.

1.3.1. The Stages Model

The Uppsala stages model was formulated by Johanson and Vahlne (1977) while investigating the international behaviour of Swedish multinational (MNE) manufacturing firms in the 1970s. The model depicted a slow and incremental internationalization process and focused on the gradual acquisition and integration of knowledge and on growing resource commitment with foreign markets.

The stages model is dynamic which implies that, in the model, the outcome of one decision embodies the input of the next. Hence, the underlying assumption was that as firms learned more about a specific market, there was an increase in the firm's level of commitment, reflected in a greater endowment of resources into that market. In other words, the model described how tacit market knowledge, obtained through international experience, led to a gradual intensification of foreign market commitment – reflected in higher order entry modes (e.g. wholly owned subsidiaries) and penetration in increasingly distant markets in terms of language, culture, political systems, level of education or industrial development (Johanson & Vahlne, 1977).

The authors identified four sequential steps of a firm's internationalization process. In the first stage of Johanson and Vahlne (1977) "establishment chain", firms focused mainly on attaining a strong domestic market base and had no regular export activities. Subsequently, the firm would enter foreign markets first by exporting via agents and later, as sales grew, by establishing overseas sales subsidiaries which would enable it to take control of information channels. Ultimately, when in possession of sufficient knowledge and information about the host market, firms would devote greater amounts of resources to it by setting up overseas manufacturing facilities.

This process stemmed from the liability of foreignness (Johanson & Vahlne, 1977) defined as the additional costs that firms operating in foreign markets had to endure in comparison with local firms. These costs would derive from factors such as higher transportation and coordination costs; lack of information networks and the firms' unfamiliarity with the host market (Zaheer, 1995). In the Uppsala model, the liability of foreignness increases along with psychic distance and decreases as the firm acquired more knowledge about foreign markets. (Johanson & Vahlne, 2009).

Johanson & Vahlne (2009) later revisited their model and included new considerations. One of the most relevant is that networks play a central part in the internationalization process as they increase firm's knowledge, help build trust and commitment and influence foreign market and entry modes selection. The contributions of the revisited Uppsala Model originally stemmed from the Network Model of Internationalization developed by Johanson & Mattsson (1988), which will be analysed in the following section.

1.3.2. Network models

The Network Models, based on the ideas formulated by Johanson and Mattsson (1988) are a different line of internationalization research that has been investigated by several authors (e.g. Johanson & Vahlne, 2009; Knight & Cavusgil, 2004; Madsen & Servais, 1997). The original authors defined the network model as "a model that describes industrial markets as networks of relationships between firms" (Johanson & Mattsson, 1988, p. 287).

Three factors that influence the competitiveness of the firm are portrayed in the model: the competitiveness and structure of the network of relationships, the position of the firm on the network and the firms' ability to develop connections with the more dynamic elements of the network. This suggests that firms are dependent on each other and, consequently, that their activities need to be coordinated (Johanson & Mattsson, 1988).

In the network model, successful internationalization is conceptualized as the process of establishing and developing positions in foreign markets through the entry in networks. Accordingly, firms are more likely to enter markets where their strongest partners are located (Johanson & Vahlne, 2009). The network model posits that such networks of relationships facilitate successful cross border business activities by serving as bridges to foreign markets, reducing the liability of foreignness and investment risks (Coviello & Munro, 1997). Moreover, as the company's degree of internationalization increases, the amount and depth of high commitment connections established all over the world increases.

These inter-firm networks can be defined as voluntary agreements between independent firms that enable the participants to access knowledge, information, technologies, and markets (Martin-Rios, 2014). Two types of within-network interactions can be identified: formal (business-related) agreements and informal relationships. An important finding regarding networks is that the rapid and dispersed involvement of high-technology entrepreneurial firms in foreign markets often stems from opportunities provided by their network relationships, often leading these firms' distribution of activities to appear random or illogical (Coviello & Munro, 1995).

Conversely, network contacts can become constraints on a firm's internationalization activities due to strong dependence on partners and loss of autonomy (Coviello & Munro, 1995). Moreover, firms in the network model face a liability of outsidership (Johanson & Vahlne, 2009) which reflects a company's difficulty in accessing a network position in the target network in the host country. Considering that internationalization is determined by the network of relationships of the firm, "outsiders" will face additional challenges when going abroad (Johanson & Vahlne, 2009). In order to overcome the liability of outsidership and get embedded in the local network, firms select entry modes that enable them to minimize costs and investment risks and focus on the development of networks in the foreign market based on trust, knowledge, and commitment (Johanson & Vahlne, 2009).

1.3.3. Born Globals and International New Ventures

Contrary to the stage's theory, smallness and newness do not always represent an obstacle to internationalization. Both the concepts of born global (Rennie, 1993) and international new venture (Oviatt & McDougall, 1994), uphold that while still being affected by scarce financial, human and tangible resources, new and small firms can leverage innovation and knowledge to enter foreign markets early in their existence (Knight & Cavusgil, 2004). Rennie's (1993) study on Australian companies that internationalized from inception, which he labelled "born globals" was one of the first to investigate small and medium-sized enterprises (SMEs) that initiated exports to international markets remarkably early, on average two years after foundation (Rennie, 1993). Concurrently, Oviatt and McDougall's (1994) identified international new ventures as "business organizations that from inception seek to derive significant competitive advantage from the use of resources and the sale of outputs in multiple countries" (Oviatt & McDougall, 1994, p. 49). The distinguishing feature of these firms was that "their origins are international as demonstrated by observable and significant commitments of resources (e.g., material, people, financing, time) in more than one nation" (Oviatt & McDougall, 2005, p. 31). The born globals were later defined by Knight and Cavusgil (2004, p. 124) as "entrepreneurial start-ups that, from or near their founding, seek to derive a substantial proportion of their revenue from the sale of products in international markets". INVs and BGs are the most frequently used terms to designate the phenomenon of early and rapid internationalization (Øyna & Alon, 2018).

Regardless of conceptual debate related to which terminology is the most appropriate, there is a general agreement that BGs and INVs are characterized by their youth, smallness, scarcity of resources and lack of experience (Oviatt & McDougall, 1994; Knight & Cavusgil, 1996). The following paragraphs briefly review the distinguishing characteristics of BG/INV commonly found in literature.

The most fundamental feature of these companies is that they are highly engaged in foreign operations from or near foundation and begin to export their products or services within a two to three years after inception (Hennart, 2014; Knight & Cavusgil, 2004; Rennie, 1993). Their proactive and determined approach to international markets emerges from management teams that are highly oriented towards international entrepreneurship at foundation and not afraid to take risks and constantly innovate (Johnson, 2004). Moreover, according to Cavusgil and Knight (2009), BGs leverage innovative information and communication technologies (ICT) to cater highly specialized global buyer's needs. ICT allows them to process information efficiently and communicate with partners and customers worldwide without incurring in additional costs (Tanev, 2012). BGs can appear across many industries (Moen, 2002) however, they are most commonly found in high-technology sectors where they create value through product differentiation and leading-edge technological products (Rialp, Rialp, Urbano, & Vaillant, 2005). More specifically, BGs often exploit pre-emptive technologies or marketing approaches, initiating overseas activity by selling a unique product or service in key global markets Oviatt, McDougall and Loper (1995). Another feature of these firms is that they are often pioneers in a global niche market (Cavusgil and Knight, 2009; Paul & Rosado-Serrano, 2019).

Lastly, they usually expand internationally through exports either by leveraging external, independent intermediaries for distributing their products abroad or via direct international sales. Such modes of entry enable flexibility and facilitate entries and withdraws from foreign markets (Tanev, 2012). Still, they rely heavily on personal and business networks at the local and international level in order to successfully reach global markets (Rialp et al., 2005).

In the process of building a channel or network and establish relationships with potential customers, the most important choice for BGs is the type of channel for fast global growth, which included: "MNEs acting as systems integrators or global customers; MNEs distributing or licensing born global products/services; networks of supportive firms and/or business associates; the Internet; or combination of two or more channels" (Gabrielsson, Kirpalani, Dimitratos, Solberg, & Zucchella, 2008, p. 391).

The main factors that dictate the pursuit of early and rapid internationalization strategies are, according to Kudina, Yip, and Barkema (2008), Steigertahl, et al. (2018) and Tanev (2017): (a) Domestic markets too small to support the scale at which firms need to operate. This is particularly observable in high-tech industries where the firm's innovative products may have only a few (if any) potential domestic clients; (b) Majority of potential customers are foreign; (c) Product or service offered has few trade barriers; (d) Product or service possesses important first mover advantages or network effects; (e) Company has top managers highly experienced in international business; and (f) Company is seeking new capital markets to approach for further funding.

According to Chen (2006), for startups about to internationalize, selecting the appropriate entry mode can decrease the liability of newness and foreignness that they experience. The following section analyses entry modes available to firms, their main features and reasons for selecting each one.

1.4. Entry mode choices

A company's internationalization process to a new target market can be materialized in distinct modes of entry, namely direct or indirect (through intermediary) exports; contractual forms (licensing, franchising, management contracts, turnkey contracts, subcontracting, production sharing and strategic alliances), and foreign direct investment (FDI) (Dunning, 2015). According to Ulrich, Hollensen, and Boyd (2014), indirect exports through agents or distributors are a less resource demanding but also lower control entry mode. Firms that want higher control over international activities without pouring significant resources into a new market may select joint ventures or strategic alliances. The highest control but also the most resource draining entry mode is the setting up of a wholly owned subsidiary (Ulrich, et al., 2014). Companies that have accumulated knowledge of foreign business practices through top managers international experience are better able to cope with the uncertainties associated with international operations and thus more prone to select FDI entry modes (Hollensen, Boyd, & Ulrich, 2011). Another relevant factor that impacts entry mode decision is the available economic or financial resources which can lead firms to select lower commitment entry modes which entail less risk. Moreover, previous research indicates that market potential in terms of the size and growth of a country favours high investment entry modes (Ulrich, Hollensen, & Boyd, 2014).

In recent years, digital approaches have enabled spontaneous internationalization to occur for products and services that can be instantly distributed through digital platforms (Watson, Weaven, Perkins, Sardana, & Palmatier, 2018). Consequently, virtual export/sales channels, which represent the simplest and lowest resource-demanding entry mode, must also be considered. Virtual channels consist of using the e-commerce website or platform of the digital product provider to serve a certain market (Rask, 2005).

In general, existing research has shown that for startup firms the preferable entry modes are often those which entail less resource commitment and focus on commercialization instead of production abroad (Burgel & Murray, 2000). Likewise, Moen, Galven & Endresen (2004) found that the first international effort of startups was usually made through a network partner and in a psychically close market. Regarding the internationalization process of scaleups, Coviello (2019, p. 11) found that "firms with higher scalability are relatively 'asset-light' in international markets" which indicates high growth with low resource commitments.

It must be noted that companies in technology-intensive industries selling complex products often select higher commitment entry modes because they seek to amortise their high R&D expenses (McDougall, Shane, & Oviatt, 2003). However, even when these firms introduce new technological innovations superior to those offered by market incumbents, they often remain inferior to established firms in terms of complementary assets, brand recognition and reputation, leading them to cooperate with incumbents instead of competing (Hashai & Markovich, 2017). The formation of an alliance is a major strategic action, usually undertaken by two firms with important strategic complementarities. Research has found that alliances can stimulate growth by helping firms to: access key resources and capabilities they do not possess – e.g. distribution channels; overcome legitimacy barriers; better cooperate with suppliers; build strong ties with the outside and access know-how, capital and networks. Nevertheless, cooperation can also have costs, such as shared revenues and the risk of seeing its technological innovations imitated by incumbents (Hashai & Markovich, 2017).

1.5. Digitalization, scaling up and internationalization

Regardless of age, size, industry or extent of internationalization, international firms have seen the framework in which they operate change drastically in the last decade because of technological advancements (Coviello, Kano, & Liesch, 2017). The phenomenon of digitalization, which at first concerned only a narrow set of firms in digital sectors, currently affects all industry sectors, from manufacturing to services (Whitaker, Mithas, & Krishnan 2010). Digitalization and digital-enabled companies are starting to dominate industries outside of traditional high-tech and even those industries that provide physical products are now integrating with software (Hoffman & Yeh, 2018).

Since the concepts of startup and scaleup are inherently associated with the digital economy (Cavallo, Ghezzi, Dell'Era, & Pellizzoni, 2019), the following subsections of the dissertation are dedicated at examining linkages in extant literature between the concepts that underpin this research: internationalization; scalability and digitalization.

1.5.1. How digitalization challenged traditional international business theories

The digital transformation has challenged business practices and theoretical frameworks developed during the pre-digital era, decreased the costs of entrepreneurial experimentation, questioned basic notions about the structure of global production (Cahen, 2019; Doh, 2005) and provided new ventures with opportunities to rapidly and flexibly scale and internationalize their operations (Autio, 2016; Autio & Zander, 2016).

Digitalization – the employment of digital technologies to assist the firm in the switch of business model and identification of opportunities for increasing value and profit (Gartner, 2018) – brought four fundamental changes (Autio & Zander, 2016; Neubert, 2018; Wittkop Zulauf, & Wagner, 2018):

(1) In digital markets, value chain efficiencies lose their relevance as a source of competitive advantage while factors such as brand recognition and product uniqueness become incredibly important.

(2) Transaction costs drop as internal and external communications are simplified and processes become standardized. Purchase and delivery logistics become easier to coordinate because of virtual delivery channels and automated ordering systems.

(3) Asset and location specificity decrease in importance, allowing digital companies to become relevant players in a market without a physical presence.

(4) Digital firms often outsource or offshore part of their value chains but are able to stay profitable by rapidly scaling up without being constrained by physical infrastructures.

1.5.2. Digital firms' characteristics and internationalization framework

A digital firm is one that executes transactions that are digitally mediated or offers products or services that are experienced digitally (Weill & Woerner, 2013). The spectrum of digital businesses is very broad, comprising a wide range of firms and business activities with products that exist on a scale encompassing both physical and digital elements – the "digital continuum" (Zhang., Lichtenstein, & Gander, 2015, p. 245). Digital firms can provide products and services that are "almost entirely digitally realized (e.g. social media platform), an interface for digital products (e.g. a mobile device), incorporate digital elements within a physical object (e.g. fitness gear) or are a physically rendered service" (Zhang. et al., 2015, p. 245). Hence, firms with a physical product/service can also rely on digital technologies for the production and sale of their outputs. The same digital continuum is observable in these firms' value chains which incorporate digital and physical elements (Zhang et al., 2015).

Shaheer and Li (2020) explained that digital firms significantly differ from traditional firms in the nature of products provided, distribution channels, organization of the value chain and pricing strategies. Thus, digital firms operating within the digital space automatically have the potential to be born global, due to the very nature of the digitally mediated, real-time communication channels that connect buyers and sellers worldwide (Watson et al., 2018). Several studies have confirmed that digitalization affects the time and pace of international market entry; the choices of location and entry modes; the attainability of indispensable resources & capabilities in home and host countries; the acquisition of knowledge of foreign markets and the firms' capacity to overcome liabilities of outsidership and foreignness (Autio & Zander, 2016; Coviello et al., 2017; Neubert, 2018).

Consequently, it has been argued that the higher the level of digitalization in the firm, the lower the need for a physical footprint in international markets and, contrastingly, that the higher the tangibility of products, the higher the need for physical footprint (Shaheer & Li, 2020; Coviello et al., 2017; Coviello, 2019).

Hazarbassanova (2016) used different terms to describe the internationalization process of Internet firms, which can be passive or active. Passive internationalization is defined as: "having a general or domestic website and serving foreign customers through it. IFs in this situation do not actively pursue or target foreign customer through any adaptations of their domestic offer" (Hazarbassanova, 2016, p. 350) while active internationalization means actively seeking foreign clients through the establishment of physical presence in the local market or adaptations to the firm's website or output to the local languages and preferences. While investigating active internationalization of this type of firms, Wenturp (2016) divided the international market entries of the of Online Service Providers (OSP) in online and offline, the former meaning that a firm initially enters a new market only by making their product available online for that market and the latter meaning that a firm decides to initiate local operations. The author also posed that it is common for this type of firms to centralize their activities in the home market. Another characteristic is that offline entries happen only after online entries and the firms often engages in local partnerships, recruits staff, and invests in offline resources that gradually increase the level of engagement with the local market (Wenturp, 2016).

1.5.3. Business model scalability

Internationalization is greatly induced by business models that are replicable, scalable, and adaptable to adjust to certain markets or clients. Even though scale and scalability remain under-researched in management literature (Zhang et al., 2015), the present section attempts to define and describe scalability and understand the driver forces behind scaling up.

In general terms, scalability can be defined as a company's capacity to grow rapidly without being deterred by the constrains resultant from its structure (OECD, 2019). Zhang et al.

(2015, p. 243) defined business model (BM) scalability as "the extent to which a business model design may achieve its desired value creation and capture targets when user/customer numbers increase and their needs change, without adding proportionate extra resources". Hence, a scalable business model is one that enables the firm to easily replicate activities or transactions in a way that increases its revenue without increasing costs, thus gaining scale (Monteiro, 2019).

The digital economy has brought a range of new opportunities for scaling up, cutting costs, and supporting the creation of new business models that can challenge existing ones in fundamentally new ways (Goldfarb & Tucker, 2019). Moreover, it has been observed that digital products and services scale faster than physical products and services (Autio & Zander, 2016). Besides digitalization, Jabłoński (2016) indicated other driving forces behind scalability, including: a firm's capacity to tailor the product to the customer's expectations and requirements; to transfer and internationalize its BM; the adaptability of the BM to differences resulting from international, cross-cultural, and legal exchanges; the firm's capacity to leverage the network effect – in which new connections in the network increase its value making the individual nodes more beneficial and urging more potential nodes to join; and also the firm's capacity to form partnerships with the network members.

More recently, a study on Canadian tech scaleups (Coviello, 2019) found a positive connection between scalability and revenue growth, sales growth, customer retention and international sales. Coviello's (2019) research indicates the existence of three main factors behind firm scalability. First, processes – companies with scalable business models attempt to use standardized, repeatable practices; automate; sell across multiple verticals or segments and to easily adapt the product/service to meet different regulatory constraints outside the home market. Second, scalable businesses have top management teams with individuals from diverse backgrounds and different kinds of expertise. Lastly, Coviello (2019) suggested a connection between scalability and fast international markets entries (one to two years from foundation) while remarking that this process can take longer for products and services that require regulatory approval to enter new markets.

Previous research indicates that the growth potential intrinsic to business model scalability seems to have a positive impact on investor attractiveness (Stampfl, Prügl, & Osterloh, 2013). In the following section the main sources of finance used by scaleups will be reviewed.

1.6. Types of finance for scaling up the firm

One of the major hurdles both to internationalization and to the scaling up process of a startup is usually finding and securing the financial resources that will enable the entrepreneur to focus on growth and enter several foreign markets (Drover, Busenitz, Matusik, Townsend, Anglin & Dushnitsky, 2017). As the company grows and evolves, different forms of capital will make more sense and be available at each stage (Filippov & Hofheinz, 2016). Scaleups are financed differently from startups since their capital needs are much greater. Such financing usually requires large venture equity rounds (Duruflé et al., 2017) and, consequently, the availability of large funds. Another reason for the focus on equity financing is that startups with high growth potential are also frequently high risk firms: firms with low or zero profitability, very limited cashflows and heavy investments in intangible assets – thereby not having any asset liquidity (Vanacker & Moonigart, 2010). Subsequently, a brief review of the key sources of equity capital that fuels growth is presented.

Venture capital (VC) is the most relevant form of equity financing available for startups (Gompers & Lerner, 2000). Venture capitalists (VCs) "raise funds from a set of limited partners (university endowments, pension funds, etc.) and seek to provide a return to these investors through selective investments into a portfolio of young, innovative companies" (Drover et al., 2017, p. 1821). Venture capitalists finance these high-risk projects with high potential for above-average returns by purchasing equity stakes while the companies are still privately held (Gompers & Lerner, 2000). Reypens et al. (2019) recently reported that entrepreneurs mainly seek finance from VCs when they desire rapid international expansion, the achievement of first-mover advantages and to become dominant players in the industry. In fact, previous studies have shown that VCs can help trigger internationalization to new markets where they offer knowledge and reputation resources. (Fernhaber & McDougall-Covin, 2009). Because VCs provide returns to their limited partners within 10 or so years, there is often a focus on executing opportune exits via an acquisition or initial public offering (IPO) (Drover et al., 2017). According to Stampfl et al. (2013), business model scalability is extremely valued by VC investors in initial investment rounds as they expect the firm to expand into new markets quickly and to yield high soon while preserving low fixed costs.

Secondly, corporate venture capital (CVC) designates the systematic practice by established corporations of making equity investments in external startup firms. This type of financing results from the investment of funds by industry incumbents as extensions of their primary focus in order gain a specific competitive advantage. At the same time, corporate investors can largely impact the companies in which they invest by providing capital, complementary assets, shared industry knowledge and access to customers (Drover et al., 2017).

Third, angel investors are accredited individuals who invest their own personal capital into young ventures, typically in exchange for ownership equity in the company. According to Drover et al. (2017), angels are often former entrepreneurs who seek to fund and add value/ guidance to investee firms in their area of expertise. Moreover, they usually take a less formal approach to investing, particularly with regard to the level of due diligence conducted and the formality of contracts and control involved. More recently, the appearance of angel investor groups (Kerr, Lerner, & Schoar, 2014) has amplified their impact. Such groups form and provide platforms, both online and in person, for individual angels to evaluate and invest in high potential firms collectively.

Other sources of funding include crowdfunding and accelerator programmes. These sources are a rapidly growing phenomenon (Drover et al., 2017) but their primary function is to launch nascent ventures and help them overcome initial sales challenges.

Chapter 2. An empirical study on the internationalization strategies and paths of Portuguese scaleups

This chapter includes the empirical part of the dissertation and is organized in the following order: methodology adopted; clarifications regarding preliminary interviews with experts and the interview guidelines and criteria used for sample selection; data gathering procedures and final sample. The second part of the chapter presents and analyses the empirical results. This latter part is divided in two sections: an individual description of case studies, followed by a cross-case analysis, with the aim of identifying elements of convergence (patterns). The chapter concludes with a general analysis of the results, which are contrasted with the relevant literature and from which lessons and conclusions are then extracted.

2.1. Methodology

Given that the main goal of this study was to add to the understanding of the internationalization process of Portuguese scaleups, the qualitative methodology was deemed the most appropriate to investigate the international strategies and paths adopted by such firms. The selection of qualitative research methods also arose from the inexistence of available databases containing sufficient amounts of data on scaleups that could lead to a quantitative approach. Within qualitative research, the case study method was retained for this dissertation for several reasons. First, it is the most suitable for studying topics that have not attracted much prior research attention (Yin, 1994). Second, it is used for investigating "contemporary phenomenon in depth (…) especially when the boundaries between phenomenon and context are not clearly evident" (Yin, 2003, p. 18) and it has been praised for providing the relevant and most accurate information for understanding complex processes in the particular field of International Business (Vissak, 2010). Moreover, the case study method successfully provides a dynamic and holistic view of the investigated events (Yin, 2003) and it has been deemed valuable for closing the gap between academia and business (Vissak, 2010).

Although the case study method is commonly utilized to answer *how* and *why* research questions, given that some types of "*what*" questions are exploratory in nature, the conduction of exploratory case studies is adequate (Yin, 2003). An exploratory study is a valuable method to "determine what is happening, to seek new insights, to ask questions and to assess phenomena in a new light" (Robson, 2002, p. 59).

Case study research comprises two different designs: single and multiple cases (Yin, 2003). Multiple case studies were the selected method because they retain several benefits compatible with the research question and objectives of this dissertation. By utilizing multiple case studies instead of a single case approach, the researcher is able to unveil elements of convergence and divergence, augment external validity (Leonard-Barton, 1990), make patterns more easily perceivable and facilitate the inference of broad generalizations and cross-case conclusions (Yin, 2003). In addition, case studies enable the combination of pre-existing theoretical knowledge with new empirical insights (Yin, 1994).

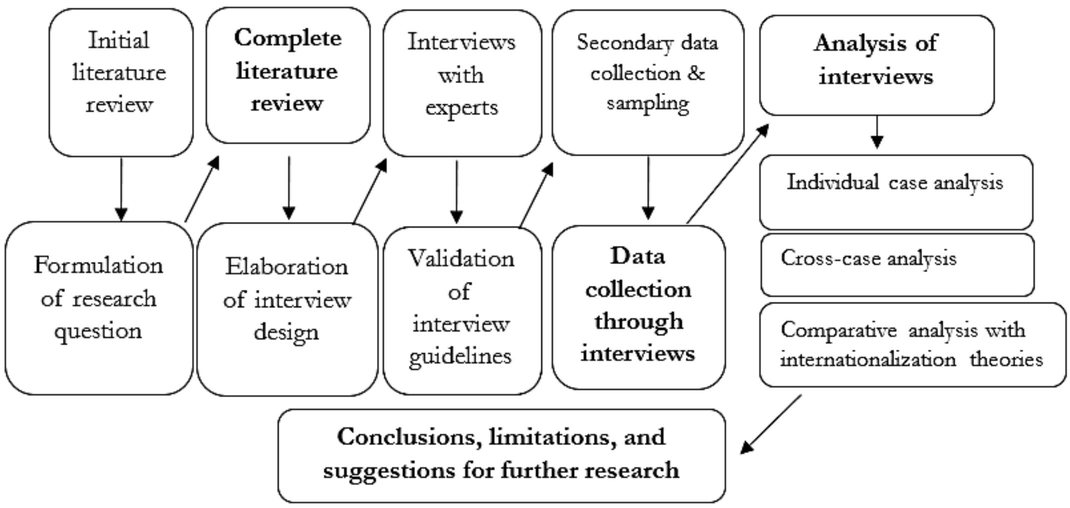
For the elaboration of the case studies, the primary data collection method was the execution of a series of in-depth structured interviews to founders and representatives of scaleups who were deeply involved with key decision-making processes in their respective firms. According to Boyce & Neale (2006, p. 3) "intensive individual interviews with a small number of respondents [are conducted] to explore their perspectives on a particular idea, program or situation.".

In order to establish a chain of evidence that allowed for several perspectives on each case firm and increase construct validity, besides the interviews, we made combined use of the following information sources: company's website, blogs and social media accounts and also archival data such as online news, media interviews and articles. Using several data collection methods "allows triangulation, reduces the respondent bias, provides additional information, increases support for the researcher's conclusions and may lead to new questions that can be answered in later research" (Vissak, 2010, p. 380) while contributing to a holistic view of the issue examined. Even though the interviews were structured, pre-defined open questions were also included with the purpose of gaining deeper understanding of the process and strategies adopted by each company to engage in international activities.

Each interview had an average duration of 40 minutes and the information retrieved was then analysed (intra- and inter-case).

The analysis of the collected data was qualitative, supported by a considerable number of tables and figures (charts) – Appendix C and D – that portray and describe the basic features of the data in the study. These visual aids were important for unveiling elements of convergence (tendencies) and divergence within the information gathered. Full write-ups were constructed on each company in the form of detailed case studies, focusing on the specific paths of each firm. The research flow diagram in Figure 1 synthesizes the methodology adopted.

Figure 1. Research flow.



Source: Own elaboration.

2.1.1. Interviews with experts

Given the lack of previous studies on the internationalization process of scaleups focused particularly on the Portuguese case, the first set of interviews were conducted to six renowned experts who have worked in close proximity with startups and scaleups for several years. The interviewees were specialists from diverse spheres within the Portuguese entrepreneurial ecosystem, ranging from venture capital funding to startup initiatives and incubators and even encompassing public policy. The interviews to experts, which took place between the 3rd of june and the 2nd of july were of utmost importance for:

(1) Validating the most appropriate definition or set of definitions of scaleup;

(2) Discussing the most relevant questions to pose to the interviewed companies;

(3) Reviewing the list of scaleups which were to be interviewed;

(4) Understanding the mechanics behind the Portuguese entrepreneurial ecosystems;

(5) Understanding the role of digitalization in the scaling-up process.

Table A.3 (Appendix C) further describes the expert's roles and which topics were discussed in each interview.

2.1.2. Interview guidelines

The interview guidelines were formulated exclusively for this research. The sources of the topics included in the guidelines were the literature review and the interviews to experts in the field under research. Moreover, following advice from experts and recent works on this topic (Yin, Moon, & Lee, 2019) we also used a "benchmarking" approach which stresses learning by "adopting industry's best practices, the widely accepted norms in the industry by firms and consumers" (p.45). By investigating industry's current best practices, it was possible to understand if the questions were compatible with the reality of the entrepreneurship field.

Considering the definitions of startup and scaleup adopted earlier, the questionnaire was focused on internationalization choices of scaleups in order to identify paths and strategies and understand to what extent they impacted the company's general growth.

The interview guidelines (Appendix A) comprise in-depth and structured questions and are divided into the following five sections:

A. General data about the company;

B. Sources of financing;

C. Internationalization process;

D. The role of digitalization;

The interviews encompassed open questions and closed questions. For the second type, several hypotheses were developed and classified using 5-points Likert scales[1] according to the answers provided.

[1] 0 – Not applicable; 1 – Nothing Important; 2 - Not very important; 3 - Moderately important; 4 - Very Important; 5 - Extremely important.

2.1.3. Criteria for the selection of the companies

Because there is no universally accepted definition of scaleup (Autio, 2016; Coviello, 2019; Monteiro, 2019), a review of the distinct definitions used in previous research was carried out (Section 1.1.2.). This process resulted in a crucial working definition and enabled the identification of the most relevant criterion to operationalize such definition (Appendix C – Table A.2). The criteria were then used to ensure that the companies interviewed were consistent with the objective of the study and the most widely accepted theoretical definitions.

In the present study a purposive research sampling method was adopted. The purposive sampling technique is based on a deliberate choice of participants that possess certain characteristics. This method is commonly used in qualitative research to identify and select information-rich cases and make the most out of the available resources. Besides, purposive sampling focuses on identifying and selecting individuals or groups that are proficient and well-informed about the phenomenon under research and considers participants' availability and willingness to contribute. Within purposive sampling we adopted the homogeneous sampling method in which the sample is selected for having a shared characteristic or set of characteristics relevant to the study (Etikan, Musa, & Alkassim, 2016).

In order to assure the pertinence of and the relevance of the information derived from the data collection, the studied companies were chosen for being scaleups (Criteria in Appendix C – Table A.2), but also had to possess the following characteristics:

(1) Scaleups with Portuguese founders and that are currently headquartered in Portugal or outside of the country – while having a major part of their operations in Portugal – to include "dual companies".

(2) Being engaged in internationalization.

In order to select the companies that were to be interviewed, a careful research was made with the purpose of finding the most relevant reports, databases and other documents that could contain information on Portuguese scaleups. Subsequently, the most relevant lists of Portuguese startups and scaleups were compiled in Excel, including those from:

1. Dealroom.co: the foremost data provider on startups, scaleups and tech ecosystems around the globe.

2. The top 50 list by EIT Digital and BGI (2019) resultant from the most recent report on the Portuguese scaleup ecosystem.
3. The companies in Portuguese venture capital agencies' portfolio – namely that from 200M Fund (by PME Investments) and Portugal Ventures.

The selection process aimed to be as thorough as possible, in order to ensure that no company relevant for this study would be left out. After compiling relevant companies 4 lists a total of 77 potential scaleups was identified and the criteria used for the sample selection described above was applied. This manual assessment process required the analysis of multiple secondary sources on each firm and resulted on a total of 31 companies that could be considered to fit all the criteria and were thus potentially suitable for this study. The drastic reduction from 77 to 31 companies derived from a rigorous application of criteria to exclude startups with insignificant growth; non-existent international activities; for which no data on internationalization and/or funding rounds and amounts were available; that received less than 1 million euros of total funding; without scalable business models or older than 10 years.

2.1.4. Sample

Based on the selection criteria, the initial sample included 31 firms. However, due to a lack of access to contacts, a lack of response and/or of availability to execute the interview, out of the initial 31 possible participants, 20 were not included in this study. Hence, under the scope of this dissertation, 11 interviews were successfully conducted with the company's founders and CEOs, corresponding approximately to 35.5 per cent of the initial sample. The following section presents an individual comprehensive description of each case study.

2.1.5. Data gathering procedures

After defining the research sample, the experts initially interviewed provided contact information of the founders and CEOs of 23 out of 33 total scaleups and an email was sent to the companies explaining the purpose of the research and requesting their collaboration for an interview. Some of the companies responded immediately and interviews were scheduled while others did not respond and were contacted again via LinkedIn.

A total of 11 interviews to scaleups were scheduled and executed under the scope of this dissertation. The interviews took place during the months of July and August of 2020. Given the coronavirus outbreak, which was occurring during this period, all interviews were performed via Zoom and Skype. The pandemic outbreak constituted an obstacle at this stage translated in firm's unavailability to agree on giving interviews and in longer time frames to obtain answers and schedule the interviews.

The interviews conducted lasted on average 40 minutes and were organized according to the procedures suggested by Sousa & Baptista (2011, p. 84):

1. Thank willingness to collaborate in research and explain the scope and purpose of the investigation as well as the interview's structure.
2. Guarantee the confidentiality of company's name and any sensitive information disclosed in the interview.
3. Follow the sequence of the interview guidelines, firstly exposing the questions as open questions in order to understand more immediate causal links and then using the Likert scales to qualify some of the answers.
4. Asking the interviewee if there was nothing else to add besides the issues examined up to that point and thank contribution.

2.2. Empirical results and analysis

The first section of this subchapter entails an individual analysis in which 11 case studies are described, with greater emphasis on the main aspects that characterize and distinguish each internationalization process. The subchapter closes with a global analysis of the selected firms highlighting the key aspects that characterize the whole group in order to identify tendencies in the internationalization of the selected sample and derive the main conclusions.

2.2.1. Individual analysis – description of selected case studies

In this section, based on the information collected during the interview process and from secondary sources, 11 case studies will be presented. The main aspects highlighted during the interviews will be described in each case study, aiming to understand the internationalization paths of the selected scaleups, including motivations, reasons for market selection, main barriers, main factors contributing for the growth of the companies abroad and other relevant case-specific aspects. In order to ensure more accurate and non-biased answers, the firms' representatives were informed that the names of the companies would be omitted from the case studies and instead a character (A, B, C, etc.) was attributed to each company. Moreover, firms were informed in advance that they could opt for not answering some of the questions.

1. Company A

Company A is a multi-sided platform (MSP) created in 2013 that has doubled their profits every year since inception. This company focuses on job recruitment by connecting tech companies looking to hire new talent to employees around the world which are qualified for those positions. Its source of competitive advantage comes from a rigorous evaluation of the worker's profiles and their subsequent match to the most adequate opportunities for them which facilitates the recruiters' selection process.

The founder reported that the reduced size of the Portuguese market, together with previous international experience of the two founders and high demand for the companies' service abroad were the main motivations to internationalize. Their first international client – from Spain - appeared soon after the launch.

Company A's active internationalization course started in 2015 with an initial effort to venture abroad through physical entry modes by opening a foreign office in London supported by venture capital the company received. The UK was chosen due to high market potential. However, in 2017, changes in the political environment (Brexit) led the founders to take a step back and change their internationalization strategy by focusing instead on Germany and the Netherlands without a physical presence. The choice of these two countries resulted from the fact that they offer higher wages, which attracts candidates. Concurrently, given the high affluence of candidates from South America, the cultural proximity and pre-established informal network contacts, the company entered the Spanish market. In short, selection of markets to enter mainly resulted from the dimension, potential and salaries of the countries and from cultural closeness between the market and the candidates.

Besides Brexit, the founder reported that cultural and linguistic differences represent a big challenge for a digital firm in close contact with clients. Hence, the company translated their website to German, Dutch and Spanish and hired workers with the language skills to operate such markets. Another significant barrier encountered in the beginning was the lack of brand-awareness, which led the company to increase online engagement with tech companies and find partnerships with recruitment agencies in Germany that enabled expansion to several cities.

The firm's only office is in Lisbon while the users of the platform are scattered around the world. On the demand side (recruiters) they operate in Portugal, Spain, the Netherlands and Germany and, on the offer side (tech professionals) they receive applications from candidates in Europe, America and Africa. The company also established a partnership with a German recruitment agency, that enabled expansion to several cities in the country.

The key drivers of international growth for Company A were: (1) favourable price-value ratio of the service provided (2) high quality of the service offered and (3) a strong network composed of personal and business ties that integrated Company A in a network of already internationalized companies (which helped expansion in Germany and Spain by increasing the firms' reputation and brand-awareness).

Company A operates entirely digitally (and reports having no need for physical presence). While the website functions as their core communication tool both with recruiters and candidate, the scaleup also leveraged machine learning to automatize correspondence between profile recommendations and recruiters and between job opportunities and candidates.

2. <u>Company B</u>

Company B was created in 2012, after 8 years of academic research, by two Portuguese founders. The company is dedicated to delivering intelligent networking software for connected cars and autonomous vehicles, focusing on smart mobility applications and wireless networks. Currently, Company B has over 180 registered patents and moves massive amounts of data between vehicles and the cloud. It has also received great amounts of venture capital funding. In 2013, the company established their presence in the domestic market by testing their solution and created the world's largest interconnected network of vehicles. Product activation on a domestic basis at an early stage allowed the company to correct existent flaws and eliminate features that did not add value to the final customer, thus increasing the firm's reliability – crucial for initiating international activities. In 2014, two well-known American managers entered the board of the firm as investors and co-founders. Soon after, the company transferred its legal headquarters to the USA, more precisely to Silicon Valley. This decision resulted from the dimension and potential of the US market; a greater financial availability for consumption and investment there and having two American managers who helped bring product and brand-awareness to US investors, had knowledge of existing business opportunities and partners and understood the country's *modus operandis* and legislation. Furthermore, the automotive industry is concentrated in a few markets – which include the US and the company had some early adopters there, thus deciding to prioritize that market.

Regarding their internationalization process, the founder identified the following motivations to initiate it: (1) the small size of the domestic market; (2) the need to access new markets – the company's solution was destined for global markets; (3) growth aspirations; and (4) the founder's previous international experience.

Besides the US, opportunities have emerged at a global level and the Asian market (Japan and Singapore), as well as the European market (Germany and France), are simultaneously being developed. The barriers found in their internationalization relate to different time zones and very distant business cultures. The founder reported that European companies in their sector are risk-averse and often do not feel comfortable working with startups.

The company currently has three physical locations: US (HQ), Porto (R&D, majority of the employees) and Singapore (local operations and partnerships). In total, the company operates in 6 markets: Portugal, Singapore, US, Japan, Germany, and France and attributes their competitive advantage to the development of a high quality and highly disruptive product. Highest sales volume is registered in Japan and in the US. Entry modes include FDI, local partnerships and direct negotiation with potential customers.

3. Company C

Company C has a patented technology that provides clean energy and reduces CO^2 emissions. It was established in 2014 and in two year it had reached minimum viable product (MVP) and initiated sales. This company has high-profile clients with subsidiaries spread throughout multiple countries.

Regarding the internationalization process, "immediately moving to a global strategy after having MVP was not possible due to lack of funding" which led the founders to search for international investors. In 2017, after securing a German investor that could provide funding, knowledge, and contacts in that market; the company started selling in Germany.

The main motivations to initiate internationalization were: (1) the smallness of the Portuguese market for their product - the founder reported their solution was created to "solve a global problem"; (2) the presence of international external equity investors which as mentioned and (3) influence of the firms' network partners – namely another high-profile client that represented a great reference and the Portuguese subsidiary of the first German client they reached.

The high demand for the firm's product in foreign markets was the most relevant factor for market selection – namely Germany and France where most truck manufacturers are located and the Netherlands, Sweden and Denmark where trucks are not allowed to make a lot of noise in order to enter the cities thus creating high demand for electric solutions. Concerning entry modes, Company C sells via direct and indirect exports (intermediaries). However, it was mentioned that distributors ask for large profit margins and are frequently not efficient.

While selling to global players is the most efficient internationalization strategy for the company, since most of their clients are headquartered in Germany they typically have to initiate sales to the German HQs which then "spreads" their product across European subsidiaries. In fact, subsequent international entries (after Germany) have mostly taken this form. The barriers to internationalization were several, including linguistic and cultural barriers (which led them to operate with local distributors and hire a German employee); reputation and credibility issues mostly when starting the business (which were surpassed through recommendations from network clients).

Last year, the Company entered the Spanish and the French markets and has now implemented their product in 7 markets while registering the highest sales volume in The Netherlands and Scandinavian countries (Sweden, Denmark, and Finland).

Lastly, the founder stated that "in order to increase business volume and scale we had to increase digitalization". Thus, besides the extremely high incorporation of technology in the physical product, Company C offers their clients a long-term subscription service of maintenance and guarantee on their platform (where data is automated and integrated through artificial intelligence systems).

4. Company D

Company D was created in 2015 in Porto (where it is currently headquartered) and sells a software-as-a-service (SaaS) for managing large and complex infrastructures (shopping centres, hotels, hospitals, etc.) that must supervise hundreds of daily tasks of maintenance, hygiene, and assessment. Company D has increased revenues by three digits consecutively over the last three years.

The founder of this firm explained that their vision, from inception, was "becoming a global benchmark in our sector". Hence, the company positioned itself towards global markets (via online presence) from start and closed a deal with an Angolan client in the first year. The first year was also dedicated mostly at finding product-market fit and execute necessary product adaptations using feedback from their first costumers. In the second year the company was committed to scaling-up sales, mainly in the Portuguese-speaking markets where the company had networks of contacts. While their internationalization process to Angola, Mozambique and Cape Verde was passive (the clients contacted the company), Brazil required an active internationalization process: frequent business visits and creating a network of partnerships to explore the market, eventually resulting in the establishment of a foreign subsidiary. In 2018, with an established presence in the PALOP markets, Company D received an investment round which enabled them to tap into the UK and Spanish markets (with physical presence).

Currently, the company is still headquartered in Porto, has four subsidiaries: in the UK, the US, Brazil, and Spain – all for sales and customer support – and clients in 14 markets. Hence, regarding entry modes, besides direct sales through virtual channels the company entered through FDI in four markets and reported having four partners who distribute their solution in UAE, Botswana, Senegal, and Jamaica. The decision to open subsidiaries relates to the fact that "the industry is used to buy software through a consulting model where on-site contact is often needed in order to build trust from clients". More specific reasons for selecting the UK, Spain, and Brazil and the US to open the company's subsidiaries were:

(3) Since the company was designed to scale fast and raise several funding rounds, presence in a relevant global market was essential, hence the entry in the UK and US;

(4) Entry in Spain derived from a risk diversification strategy, language and cultural proximity and contact of potential clients in that market;

(5) Entry in Brazil resulted from the establishment of a strong network of partners with high growth potential.

As mentioned, the remaining markets were not actively targeted by the firm and, according to the founder, the contact from clients is such markets resulted from inbound marketing[2]. The main barriers found, so far, have been: (1) lack of brand-awareness abroad; (2) lack of employer branding which hampers talent acquisition (finding workers in Portugal or available to move to the country that possess the language skills they need). These two issues have been tackled through product differentiation, experienced international investors, and strong local partnerships. Lastly, the language barrier was also significant – their software has to be translated to multiple languages and because it undergoes constant updates the company had to create a translation framework that automatizes the translation of new product features to 6 different languages.

The firm stated that their main competitive advantage results from digitalization: "although we have many global competitors, because of our innovative approach, the highly disruptive technologies that we use and the quality of our product we have been able scale-up at a fast pace". Investment in R&D and the development of new and more complex product features was regarded as essential for sustaining innovation leadership in their sector.

[2] A business methodology that attracts the attention of potential clients through strategic content creation and experiences that are tailored to their unique needs and buying journey. Inbound marketing relates to establishing connections, answering clients' questions, and solving problems.

5. Company E

This company was created in 2017 and it is dedicated at serving a specific market niche: pet owners. Through a B2C subscription model, pet owners receive food personalized to the dog's diet and access to an online veterinary care service. Their high revenue growth helped them secure a 5 million euros Series A of venture capital funding – with several Portuguese investors and a Spanish investor.

During the first year the company decided to test their business model domestically. In the second year, they initiated internationalization to Spain by opening a physical office there. However, Company E soon realized it did not need subsidiaries and instead decided to centralize the entire operation in Portugal which included hiring native people (Spanish) to work from Portugal in customer support and market management. Currently, the company does not own any subsidiaries.

In the third year of operations, the company internationalized to Italy. The founder stated that "for a company like us who is trying to grow at a fast pace and expand in many countries, having an operation playbook is essential because it helps us replicate our successes and avoid repeating mistakes". The company also initiated their internationalization to Germany at the start of the current year, but the process was paused due to the covid-19 pandemic.

The founder identified two phases in the company's internationalization process. The first phase, which lasts nearly one year, consists in launching their service to a new market using replication logic – reproduce their exact *modus operandis* abroad. The second phase occurs after the company has achieved sustainable and accelerated growth in that market. In the second phase the company uses localization strategy to address purchasing habits, customer behaviours and overall cultural differences in the new country. This stage is highly connected to strong digital marketing and exploring local partnerships with pet-friendly business partners and local veterinarian clinics.

Company E's market selection is based on a rigorous analysis of Google data regarding online growth of their sector, costs of client acquisition and other relevant variables. Hence, the dimension and potential of a market as well as high demand for the firm's service in a new market are important factors in the choice of markets to enter.

According to Company E, the main internationalization barriers found so far relate to (1) client acquisition (2) cultural distance and (3) linguistic distance – specially in what concerts to language used on the website, app, and digital advertising. While the Spanish market presented some challenges because it was the first international market where the company entered, expansion to Italy was deemed the most difficult. This was due to higher cultural and linguistic distance than that found in Spain and to the need to create entirely new operations and open distribution channels.

The founder attributed their growth to the extremely high quality of the service provided, the favourable price-value ratio of the service and investment in localized digital marketing. Although delayed by the coronavirus outbreak, the company has plans to soon initiate activities in the German market.

6. Company F

Company F is an open source platform that enhances the app content discovery experience through social interaction, tailored recommendations, and the opportunity for users to create and share their own personal stores. Hence, besides having its own app store, the firm focuses on providing a content sharing platform and registers 100 million users worldwide, by the interview date.

The firm was launched in 2011, in Lisbon. The first version of the platform was developed in Portuguese and later in Spanish, due to the geographic and cultural proximity of the country. Soon after, an English version was made available. Fast user growth in the Iberian market increased downloads in Latin America (especially Mexico and Brazil), influenced by *word-of-mouth* among the user community.

Although the initial focus was on the European and South American markets, the company's founders decided, in 2015, to extend the company's scope to the Asian market. This decision was made after conducting market studies, which pointed to a huge explosion in smartphone usage in Asia. At this point, internationalization consisted in making the service (Appstore) available in new countries and translated accordingly. To tap into the Asian market, the co-founders sought a series A investment round. The investment enabled the company to accelerate its growth in target markets, including Latin America and Southeast Asia, and to build relationships with regional partners in Asia. In 2016, supported by these pre-established networks, offices were opened in China and Singapore. The factors that led the company to select these two markets were, respectively: (1) regional partnerships with Chinese integrators and electronic equipment manufacturers (OEM) that enabled the Company's app store to be pre-installed on mobile devices and (2) Singapore had a great investment hub and the company secured a local investor with knowledge about the market that aided the opening of a local office. Besides the establishment of subsidiaries, Company F recently created a joint venture with a French global automotive supplier.

Regarding the barriers found in the internationalization process, the founder explained that "network effects were a big barrier in initial stages since the company needed apps to attract users but also needed users to attract app developers". Today, the only country where the company does not register users nor downloads is China due to legal barriers, namely the Great Firewall of China that disables connections to foreign platform. The organic growth that occurred worldwide resulted from platform's features, particularly the fact that it allows users to share their favourite apps and games with the user community. Digital marketing strategies also aid user attraction and retention.

Although the company is entirely digital, in-app localization strategies are vital. The firm is highly careful with interface translation in each market and with contents creation (banners and groups of apps) – as stated by the founder, "it is vital to understand each country's culture and holidays and adjust our platform accordingly".

At the time of the interview, the company registered most of the downloads in India, Brazil and Indonesia while the majority of in-app sales were registered in the United States, Germany and France. Company F is currently in a Series A of funding (received in 2015).

7. Company G

Company G was founded in 2011 and is call centre software company operating B2B markets, mostly focused on MNEs. It is currently in a Series C investment round and the General Manager stated that "the reason why we do not merely use our profits to grow – in a bootstrapping logic – is because we seek to grow at an exceptionally fast pace which is facilitated by venture capital".

Company G was, from inception, divided between Portugal and the United States. More precisely, although it is headquartered in San Francisco, the founders are Portuguese, and the totality of R&D operations are located in four Portuguese cities. In 2016, Company G decided to actively pursue internationalization and operate larger markets, including Canada, England, Spain, France, and Germany. According to the representative interviewed, "the reason why it took us five years to enter European markets (besides Portugal) was the dimension of the US market – we had much room to grow there before exploring other options". Hence, motivations to internationalize were mostly related to a desire to prove the global nature of the company and its solution.

In terms of factors that favour firm's growth in international markets, the representative pointed out the extremely high quality of the product which results in satisfied clients and positive word-of-mouth and also the way the company treats costumers – "we dedicate a lot of time into assessing client satisfaction, making sure product implementation was successful and asking if there is anything that we can improve". In fact, their global clients, specially the most well-known ones, often act as partners, making reference-calls to other company's and recommending the firm's product. A factor that helped the company enter the European markets was the cultural and linguistic proximity and networks it had in Portugal, which helped the firm secure high-profile Portuguese clients that it would not otherwise have been able to acquire and that function as extremely good references when internationalizing.

According to the General Manager, "all countries were hard to enter". The mains barriers found were the extremely high local competition related to the fact that the company's sector is not new and most clients in a new market are already using different solutions. This lack of brand-awareness required high investments in marketing and sales teams' training to persuade potential clients that their product was better and that the company was highly renowned and had good credentials. A different barrier found by the company were legal requirements – extremely high for telecommunications sector.

At the time of the interview, the representative reported that the company had physical operations in 7 countries – Canada, United States, England, Portugal, Spain, France and Germany while serving clients from over 75 countries. Europe, Middle East and Africa are all supervised by the European offices. The decision to open several offices derived from the need to provide quality customer support to highly demanding clients located overseas.

8. Company H

Company H was founded in 2013 and started with a simple idea: buying and renting motorhomes. For the first two years, the company was a small business focused only on the domestic market. Their internationalization process was triggered by a funding round (Seed) received in 2015 which also led the company to change their business model from buying and restoring motorhomes to a leasing system[3] - which reduced fixed assets and minimized investor's risk.

The company started operating the Spanish market without a physical presence and changed their vision, "we started thinking that we could be the biggest European company in the motorhome renting market". In 2016, the company expanded "officially" to Spain by opening physical infrastructures. In 2017 the company was well-established in the Portuguese and Spanish markets (with 15 locations) and the business was growing fast. Hence, it decided to open 35 locations in three new markets (France, Italy and Belgium). In 2018 the company had its second big expansion increasing its market presence by 4 markets (The Netherlands, Germany, Switzerland, and Croatia). In 2019, the company entered in three new markets (UK - England, Ireland, Scotland; Sweden; and Iceland). All these entries happen through the establishment of a new foreign branch, since "the nature of the service we provide automatically forces us to open legal entities (subsidiaries) in each country we enter and to subject ourselves to the legal requirements of that country". Additionally, logistics and operational activities require the presence of warehouses where costumers can collect the rented campervans and latter return them.

The main motivations to internationalize included: (1) the presence of external equity investors that provided initial capital; (2) focus on global niche – travellers and (3) desire to grow. Two factors impact the selection of new markets. First, the Company executes a meticulous assessment of the market: opportunities, competitors, amount of possible clients, etc. Second, logistics: when opening a new warehouse, it needs to be "supported" by other relatively close locations so that the company can adjust the number of motorhomes in each location in line with the demand.

[3] Contracts with fleet management firms specialized in buying motorhomes in bulk from manufacturers (at a much favourable price) and then renting them to be explored by other companies.

Concerning barriers to internationalize, the bureaucracy associated with the process of creating legal entities and opening warehouses often delays the launching of new locations. Local distrust and low brand-awareness also represent an obstacle but are tackled by the company through highly localized digital marketing strategies (starting in the months that precede a new entry). Lastly, local competitors also represented an obstacle, particularly in The Netherlands where there were pre-established players. Moreover, Switzerland and the UK were also "difficult", the former due to legal requirements that differ from those of the European Union and the latter because steering wheels are on the right.

The representative reported that "the company has been growing by three digits every year" making 15 million euros in revenues in the past year alone. Such growth partly explains why the company received a 9 million euros Series A investment round at the start of the present year. Remarkably, a big part of this growth is underpinned in the Spanish market because (1) the company does not have any direct competitors there and (2) it is highly localized - to the point where locals believe it is a Spanish firm.

9. <u>Company I</u>

Company I focuses on the development and commercialization of medical devices, with a greater emphasis on adaptation technologies and, more precisely, within the market of creating prothesis. It was founded in 2015 in Porto but, in 2018, after receiving a Pre-Series A of funding it moved the headquarters to the United Kingdom. In the 5-year period between foundation and starting international sales the company focused on developing and improving their technology, securing financing, and surpassing legal barriers to enter the North American markets – obtaining FDA approval.

Regarding their internationalization, the main motivations to initiate the process were (1) the small number of potential clients for their product in the Portuguese market; (2) the company's vision, from inception, to operate and grow in global markets; and (3) the presence of external equity investors that provided funding but also knowledge. More specifically, in 2018, the company received funding from a Portuguese investor with a great network in their sector as well as knowledge related to intellectual property and a well-known British investor with a lot of experience and many companies in their portfolio.

The main factors for market selection - both to move the headquarters to the UK and, more recently, to start internationalization to the US and Canada were, respectively, the strong links between the British market and the US market and the need to obtain international financing (which was easier for a UK-based company than for a Portuguese-based one); and, secondly, the fact that the US and Canadian markets are the world's biggest consumers for their type of product – where most potential clients are located and where consumers are more willing to pay for the latest technological solutions in terms of prothesis.

According to the founder, his lack of previous international experience and knowledge represented an obstacle and led the company to hire an experienced chairman who had helped internationalize several companies – mostly from the UK to the USA. Other barriers found in this process were mainly the geographic distance and different time zones and also the linguistic and cultural distance. Besides, as mentioned above the company faced regulatory obstacles – commonly observed in their sector – but the founder explained that because the chairman they hired had international knowledge and experience this barrier was more easily overcome. Lastly, obtaining enough funding to scale and initiate sales in the US was also a challenge given the populational and geographic dimensions of the country.

The company currently has physical operations in two locations: (1) Portugal - where all the R&D activities are located and where the company currently focuses on the development of more product and (2) UK – where the company has sales and management activities. The sales to the USA take place through a distribution agreement that the company was able to secure with one of the largest distributors for medical devices in the US.

A worth-mentioning topic in Company I's internationalization trajectory is that although the company is physically present in Portugal and in the UK, it does not have plans to sell in neither of these two markets since these type of services are provided through the NHS (National Health System) and contracts are extremely hard to obtain (because these type of technologies are not considered a priority). Nevertheless, the founder highlighted that "Starting-up in Portugal was essential because we would not have been able to develop our technology at such lower costs anywhere else; there is an incredible cost-quality relationship for talented workers which allowed us to get much more done at a much lower cost".

10. Company J

Founded in 2013, Company J soon received their first investment round (a Pre-Seed from domestic investors) to develop their core technology – a completely new and disruptive hybrid solar and wind power generation system. It took them nearly 3 years to mature the product and get it ready to be sold. Although the company sells hardware, the level of technology incorporation is extremely high and over 50% of the staff is dedicated to R&D activities.

As described by the founder and CEO "we had an international vision from the start and so, as soon as the product was ready, we set off to sell it abroad". Hence, in 2016 the company selected a few key locations from where they knew their technology could rapidly spread, namely USA, Singapore, Dubai, Germany, UK, France and China (Southeast Asia region). Today, the company has installations of their product in over 30 countries and registers the highest business volume in the United States and Europe. Southeast Asia was pointed out as the market with higher growth potential and where the company is developing their largest and longest-term projects (although still in initial phases).

Like Company C, this firm also uses exports as their entry mode of choice. Either direct exports (sales to multinational clients) or indirect exports via local partners that already have open distribution channels in certain markets and start commercializing the company's technology. As described by the founder "we were focused from the start on finding partnerships with large players who, after the first well-succeeded project, could open doors for us in new markets".

In contrast to the other companies, Company J saw Portugal as a strategic location for their operations (for being halfway between US and China) and realized they could, from Portugal, coordinate their activities in the entire world – without the need for a physical presence in other locations. The company also knew from the beginning that their product was fit for global markets. Besides these two motivations, "internationalization helps mitigating risks and scaling-up since some of these markets are evolving at a higher pace and are more interested in the product".

In terms of factors for market selection, having contact with multinational partners was crucial because such partners bring the company's solution to new markets. Moreover, the dimension and potential of markets, as well as their level of technological development was decisive, namely in the Southeast Asia entry.

Considering that the product is highly innovative and there is nothing alike in the market, the company has not struggled with competition and has been growing in terms of reputation and brand awareness since it started operating abroad (also due to strong investment in content marketing). Hence, the barriers found mostly relate to inefficiencies in distribution and linguistic and cultural differences that arise when dealing with so many different countries. China was mentioned as an extremely hard market to operate due to cultural differences while the United States were referred to as a place where "the legislation is basically made to block new entrants".

11. Company K

Company K was created in 2015 and provides a platform that allows banks to create a digital channel that is integrated, secure and in strict compliance with current legislation. Although the company's main clients are within banking and insurance sectors, retail and even healthcare companies are also in the portfolio. The company only initiated sales after two years of developing their platform (establishing MVP).

In 2017 the company wanted to consolidate their presence domestically and secure several relevant clients that could later serve as references. However, by the third year of operations, one of the firm's investors leveraged their contact network and secured them a high-profile client in Hong Kong. Then, another market player in the Spanish banking sector was guaranteed. The company has also attained prominent clients in Norway and, more recently, in France. Besides having clients in these 4 international locations, the company opened, in 2017, an office in London. When questioned about the reasons for opening the English office the founder clarified that "a client recommended us to open a subsidiary in London because it made our firm appear well-established and banks trust bigger companies a lot more than startups". However, the London office is empty, and Company K described that their internationalization process was (up to three months ago) passive.

However, this year the company initiated an active internationalization strategy and is currently focused on opening offices and hiring workers in Spain to "address the market in a more structured way". The Spanish market was selected because (1) Company K already had an important Spanish client that serves as a great reference and helps them attract new clients and (2) linguistic proximity – because the internationalization process is at initial stages and the founders want to learn from clients it is important that they speak the language. Moreover, the company still registers highest business volume in Portugal and Spain.

Company K had three main motivation to initiate internationalization, namely the founder's previous international experience and the fact that the company serves a small niche (banks) which means that markets are rapidly exploited. Hence, as stated by the founder "internationalization was not really a decision to us, it was a mandatory step".

Regarding the internationalization obstacles found so far, the founder identified linguistic barriers and barriers related to legal requirements. For instance, although the company has a Chinese client, it decided not to accept more clients in that market because of the linguistic and cultural distance and different time zones.

In terms of funding, the company is still in a Seed round but, according to the founder "from the start we never had to look for clients nor investors and we have been able to scale although we operate in a bootstrapping logic". Since the company operates B2B markets where contracts can go up to 2 million euros, the firm's revenues have been able to sustain high R&D – half of the staff is dedicated to constantly upgrading the firm's platform – and growth expenses.

2.2.2. Cross-case analysis

In the previous section, an individual analysis of the case studies was presented to highlight specific characteristics of each internationalization process and of each interviewed scaleup. A general analysis will be developed in this section with the aim to have an overall perspective of the 11 companies interviewed (Table 1) and expose the main findings as well as patterns and discrepancies in their internationalization paths. The analysis will follow the questionnaire, starting with financing, internationalization process and international growth and, lastly, the role of digitalization. The main findings will be contrasted with prior studies described in the literature review. Table A.4. in Appendix C details the general attributes of each firm (Interview Guidelines Section A) such as the location of the headquarters, number of employees, industry, revenue model, among others.

i. Funding

Regarding the types and sources of funding received by the companies (Interview Section B), our findings indicate that venture capital was the prevalent form of funding received by scaleups, similarly to previous works by Gompers and Lerner (2000) and EIT & BGI (2019). Other sources of funding such as personal savings and bank loans helped firms initiate the business but were very residual. Only in one case the majority of the funding came from a public-private investment fund.

The provenience of VC funds was as follows: 8 out of the 13 interviewed companies received both domestic and foreign capital. 3 companies received exclusively international funding and only one firm funding derived entirely from domestic investors. However, the results strongly imply a clear tendency: at initial funding stages (Seed), domestic investors played a vital role (10 out of 17 investors were Portuguese) but in subsequent funding rounds (especially for Series A), domestic investors lose relevance and are surpassed by foreign investors (17 out of 29), mostly from the United States (12 out of 17 investors). These findings are consistent with recent reports by EIT Digital and BGI (2019) on the Portuguese scaleup ecosystem and can be observed in Table A.5. (Appendix C).

Our results also reveal that VC investors can directly and indirectly impact the internationalization of the firms. On one hand, most firms (7 in 11) reported that investors had a direct impact on their international growth by providing information, knowledge, incentives, and access to networks that helped the firms enter and penetrate a new market. The positive impact of venture capitalists on internationalization through knowledge provision corroborates previous finding by Fernhaber and McDougall-Covin (2009). On the other hand, for 3 of the companies (D, G and H), venture capital had an indirect impact by allowing the firm to scale fast and with high revenues while providing enough cash flow to support R&D and digitalization activities.

Table 1. Synthesis of the companies' main features and internationalization process.

Firm	Founda-tion	Total funding	Series	Subsidi-aries	Foreign Markets	Overview of the internationalization process	Theoretical similarities
A	2013	€2.8M	A	0	4	First foreign clients soon after inception. Opening offices in a market with high potential – then changing the strategy and operating only through digital channels. Leveraging partnerships with other firms and local investors in Germany. International outlook from inception due to the smallness of the domestic market and high foreign demand.	BG/INV and Network Model
B	2012	€33.5M	B	2	6	Highly disruptive technology aimed at global markets. Domestic market was relevant for testing the technology. Strong investors and networks in Silicon Valley led the firm to move their HQ to that market. Physical presence in Singapore to manage local partnerships.	INV/BG and Network Model
C	2014	Confiden-cial	A	0	6	Entry in foreign markets after achieving MVP, first through exports and then through intermediaries (to surpass linguistic and cultural barriers). International outlook from inception due to the nature of the product; Leveraging partnerships to penetrate foreign markets; Global clients spread the company's product through their subsidiaries.	INV/BG, Stages Model and Network Models
D	2015	€4.6M	Seed	3	14	Global vision and positioning from inception. First two years passive internationalization to linguistically close markets (PALOP). Active internationalization to Brazil 2 years after foundation (establishment of partnerships and eventually subsidiary) and, soon after, to Spain and the UK (strong local presence for customer support and partnerships).	BG/INV. Digital internationalization framework and Network Model
E	2017	€7.8M	A	0	3	Establishment in the domestic market before initiating foreign sales. Entry in Spain less than 1 year after foundation and then Italy. Operation centralized in the home market. Leverage partnerships with local businesses. Currently initiating internationalization to Germany.	Uppsala Model. INV/BG and Network Model

F	2011	€4.4M	A	4	Global	Passive online internationalization after inception. Company focused on translating the app to Spanish in order to tap into South American markets. Simultaneously, important partnerships and local investors in Asia led to the establishment of 2 foreign subsidiaries. Leverages strong network effects that usually hamper competitors.	INV/BG; Network Model and Digital internationalization framework.
G	2011	€243M	C	7	Over 75	Born between Portugal and the US (instantly internationalized). First years focused on the domestic – US – market and then initiated internationalization. Gigantic international expansion through virtual channels and establishment of foreign commercial subsidiaries in key markets.	INV/BG, Uppsala Model and digital internationalization framework.
H	2013	€9.1M	A	15	14	Entry in Spain 2 years after inception without physical presence. Then establishment of subsidiary and in 2017 entry (equity entry modes) in France and Italy. Subsequent entries were faster (12 markets in the last three years). Physical entrance required by high operational complexity.	INV/BG and Uppsala Model
I	2015	€3M	Pre-Series A	2	3	Recruitment of top manager with international experience to help surpass regulatory barriers in the US. Distribution agreement in the US reduced the need for physical presence. Financial needs, the dimension of the market, reputable local investors & strong ties to the US led the company to change the HQ to the UK.	INV/BG and Network Model
J	2013	€3M	Pre-Series A	0	30	Initiated international activities as soon as the product was ready (disruptive technology). Direct exports to MNE clients that help penetrate the market or local distribution agreements with big companies.	INV/BG, Network Model and Uppsala Model
K	2015	€1.2M	Seed	2	4	Passive acceptance of foreign clients soon after initiating sales followed by the opening of a foreign office in London to increase firm's reputation and active internationalization to Spain.	INV/BG and Internationalization framework of digital firms

Source: Own elaboration.

ii. Internationalization process

The results regarding the time between foundation and internationalization of the firms show that Portuguese scaleups internationalized, on average, 1.9 years after foundation, as observable in Table A.6. (Appendix C). A brief note concerning company I, which took longer to venture overseas is that, because they sell a medical device, there was a longer period for product development after inception and for surpassing regulatory barriers. Rapid internationalization is consistent with born global theories (Cavusgil & Knight, 2009; Rennie, 1993) – a connection which is further addressed in Section 2.2.3.

In terms of entry mode choices (Appendix C – Table A.7.), 10 out of 11 companies used a combination of two or more entry modes. Whereas past researchers have found that both startups (Burgel & Murray, 2000) and scaleups (Coviello, 2019) are more prone to select entry modes that entail less resource commitment, the present study depicts a different pattern: most companies (7 in 11) have entered foreign markets through the establishment of a subsidiary. One interpretation of these findings is that, as firms walk up the scalability ladder – often generating high revenues or having received significant funding – they are more prone to select higher commitment entry modes that provide higher control levels that allow the company to build local responsiveness.

A general analysis of Table A.7. (Appendix C) concerning the first international markets in which the companies entered or registered sales, allows us to verify the prevalence of 4 markets: Spain, the United Kingdom, the United States and Germany. While starting to internationalize in Spain is likely related to the cultural and geographic proximity, initiating international activities to the UK, the US and Germany derives from the dimension, potential and high demand for the companies' products in those markets. Similarly, in Table A.8. (Appendix C) we can observe that most companies (7 out of 11) highest sales volume is currently registered either in the United States or in Spain.

Factors relevant in the selection of new markets to enter were divided in non-equity and equity entry modes (Appendix D – Figure A.1.). However, the results indicated low variations between the factors that lead to the adoption of lower versus higher commitment entry modes. In general, the selection of markets to enter was based on three main factors:

a) Market dimension and potential;
b) High demand for the firm's products in a foreign market;

c) Existing personal or business ties (which include the aforementioned VC investors).

In the selection of markets for the establishment of physical presence, there is a clear tendency for the entrance in key global markets that increase firms' legitimacy (Appendix C – Table A.7.). Additionally, firms often choose to set up subsidiaries in markets where they can leverage the contacts and reputation of foreign investors or find good partnerships with other companies. This consideration is corroborated by Coviello & Munro (1995). It can also be observed that two of the firms in the study (B and I) are dual companies (Mind the Bridge, 2017) meaning that they initiated activities in Portugal and, as the firm grew, decided to move their headquarters to another country (US and UK, respectively). Three reasons led these firms to "flip" their headquarters: the presence of investors from those markets, the markets dimension and growth potential and increased reputation resultant simply from being located there.

Concerning motives given to start internationalization (Appendix D – Figure A.2.) there is a clear tendency since most companies' immediate answer was that the smallness of the Portuguese market and strong growth aspirations led them to venture overseas. In some cases, internationalization was a compulsory step for the sheer survival of the firm (B, C, I, J, F, G) and in other cases, an essential step to continue their growth paths (A, D, E, H, K). The two least mentioned motivations were the need to obtain international funding – only mentioned once – and the influence of the firm's network partners – since these firms initiate activities soon after inception, they were often still not embedded in relevant networks.

Having analysed the speed of internationalization, entry mode choices, factors for market selection and motivations to venture overseas, the following step was to investigate the factors that enabled and hampered international growth of the firms.

During interviews, two factors were mentioned the most times as highly contributors to the successful internationalization of the scaleups (Appendix D – Figure A.3.). All interviewed companies explained that their growth was supported by the fact that they created disruptive innovations or offered products or services that were superior in quality or features to those offered by competitors. This result is consistent with Kudina et al. (2008) on born globals. Moreover, the firms reported that their competitive advantage derives from understanding and adapting to the client's changing needs – through new products, features, or verticals.

The two least mentioned factors to contribute to the successful international market entry were (1) reputation of the company and (2) building an efficient distribution network. Company's reputation is not influential since scaleups are often unknown when they enter foreign markets and must invest in digital marketing and leverage networks as well as partnerships with other companies to establish themselves. As for building an efficient distribution network (which was only applicable for some firms) it does not aid growth because there are often inefficiencies in distribution channels.

One of the main barriers found during internationalization (Appendix D – Figure A.4.) were linguistic and cultural differences. This barrier, however, did not seem to deter foreign entrances and was surpassed through the help of foreign investors and hiring workers with the needed language skills. A conclusion that emerges is that scaleups are much more willing to take risks abroad, a common characteristic of entrepreneurial firms (Autio, 2016). Despite being the second most-mentioned barrier, regulatory constraints were expected by most firms when entering new markets and in all cases surpassed. These findings are coherent with Jabłoński (2016) who proposed that firms with scalable business models expect and flexibly adapt to obstacles stemming from international, cross-cultural, and legal exchanges. Lastly, the lack of brand-awareness was the third most mentioned barrier which occurs because when entering new markets, even though these firms are growing at a high pace, their reputation is not immediately an asset. To surpass this barrier, firms serving B2B markets mentioned that targeting large customers and partners with global reach positively impacted the international growth and increased the firms' reputation – this finding is consistent with Kudina et al. (2008). As for companies serving B2C markets (or a combination of B2B and B2C) strong digital marketing strategies were deemed relevant. Table A.10. (Appendix C) syntheses the answers given by firms regarding the countries where they faced the highest obstacles to enter and what were those constraints.

Regarding networks, most companies explained they leverage partnerships either with firms in the same industry or in related industries that have complementary activities and helped them enter a certain market (Appendix C – Table A.11.). Leveraging these cross-border networks influences scalability (Jabłoński, 2016). When asked about the importance of such partnerships, most interviewees answered that they are extremely relevant in their internationalization process because they help surpass different obstacles. Such findings are consistent with Bailetti's (2012) proposition that successful startups are highly engaged in collaborations and proactively leverage new and existing networks to locate and interact with potential customers, partners, and suppliers. This topic will be further addressed in Section 2.8 and connected to the network models of internationalization.

When asked about long-term objectives, all firms stated that further development of their internationalization, along with continuous investment in innovation are the main goals.

iii. Digitalization and innovation

Regarding the last section of the interview guidelines, it was found that the majority of these companies (9 out of 11) undertake high R&D investments and all of them regard innovation as an important barrier to competitors and as part of their competitive advantage. 8 in 11 companies specifically reported having a very high percentage of their teams dedicated to R&D activities – from the development of new products to the maintenance and improvement of existing ones. Another common feature of all the firms is that (even for those with foreign headquarters or subsidiaries) R&D activities are located in Portugal due to the abundance of talented and highly skilled human capital.

All companies interviewed leverage digitalization and ICT. The Internet was used for distributing content of the company's product or service by all firms but to a different extent. Only 4 companies leveraged the Internet to sell their product/service through an online store or application. Other usages included, in general, interacting with costumers and potential customers, providing costumer support, and increasing feedback and brand recognition. There is a clear tendency for companies operating B2C markets (namely A, E, F, H) for higher investments in digital marketing.

A key finding was that these firms not only leveraged but also had a strong impact on the Portuguese entrepreneurial ecosystem. On one hand, these firms leverage funding, knowledge and networks provided by domestic VC investors (especially at initial stages); they benefit from easier access to domestic players (in the same industry or related industries) with established global presence who are more willing to implement technologies and innovations created by Portuguese startups; and, lastly, these firms often have strong ties to the Portuguese institutional scene (universities and research centres) where their business ideas emerged and/or their technologies were firstly developed. On the other hand, as these firms grow, their impact on the Portuguese entrepreneurial ecosystem increases through job creation (often jobs that require higher human capital levels), employment of large numbers of recent college graduates, selection of office/headquarters location in smaller Portuguese cities where the firms have an active role in stimulating entrepreneurial activity, among others. These findings are consistent with

2.2.3. Analysis in the light of relevant internationalization theories

For this section of the dissertation, interviews were examined in the light of the most pertinent internationalization theories (Section 1.3.) as well as in comparison to previous studies on the internationalization patters of digital firms (Section 1.5.2.). A synthesis of the main characteristics of each internationalization framework and the companies that fit each characteristic can be observed in Appendix C – Table A.12.)

Firstly, the key features of the Uppsala Model were not identified in most of the internationalization paths within our sample. Yet, the internationalization process of two of the firms (namely E and H) started via direct sales in psychically closer markets (particularly Spain) and then advanced to more distant markets. These findings suggest a possible connection between gradual internationalization processes and higher levels of operational complexity, even for companies growing fast internationally. In addition, these two firms were the same companies that entered foreign markets only after being established in the domestic market. It was also noted that for 6 firms, gradual knowledge acquisition of foreign markets motivated an increase in commitment in those markets. This knowledge-acquisition process resulted from pre-existent partnerships, lower commitment entry modes at initial stages or having strong clients in such markets). Some companies incurred in additional costs due to being foreign - liability of foreignness (D, F, G, H, J). This liability was surpassed by selecting higher commitment entry modes (subsidiaries) which are more effective for establishing and managing local relationships. This finding is consistent with previous works by Chen (2006).

Second, the success of the interviewed firms can be largely attributed to their effective use of networks. Most firms (9 out of 11) stressed the importance of leveraging partnerships with other players in the same industry or related industries. A key finding was that many firms (7 out of 11) entered markets where their business partners were located – either local investors and/or clients with global reach. Such findings are consistent with previous works on the topic (Chetty & Campbell-Hunt, 2004; Coviello & Munro, 1995). The heavy reliance on personal and business networks at the local and international level for the successful entrance in global markets (Rialp et al., 2005) is a feature that most companies demonstrated and that is present both in Network Models but also in BG/INV literature.

Third, the results present higher similarities between the internationalization patters of the firms and BG/INV literature. The majority of the companies' founders (9 out of 11) had an international outlook from inception and most firms (9 out of 11) began to sell their products abroad soon (not more than 3 years) after initiating activities. Previous international business experience by top managers was also an influential internationalization trigger for almost all the firms. These results are consistent with previous works on BGs from several authors (e.g. Hennart, 2014; Knight & Cavusgil, 2004; Tanev, 2017). A feature of BGs that was not compatible with many of the companies in the study was the selection of low risk entry modes (direct sales or sales through intermediaries) since 7 in 11 companies have all established physical operations abroad. As for operating in high technology sectors and creating leading-hedge technological products this is a feature of 8 companies in this study. Additionally, all companies seek to derive substantial proportions of their revenue from international markets and it was found that for 8 out of 11 firms business growth was, indeed, mostly underpinned in foreign markets. Moreover, all the firms in our sample leveraged advanced innovative information and communications technologies (ICT) to grow in foreign markets.

Lastly, the internationalization process of digital firms was analysed through the frameworks of two authors (Hazarbassanova, 2016; Wentrup, 2016). Only 3 firms reported having a passive internationalization process in some countries, i.e. serving foreign customers without actively pursuing or targeting them and without any alterations of their offer (Hazarbassanova, 2016). However, in general, active internationalization was pursued by all the firms either through the establishment of presence in a foreign country and/or through adaptions of the website/output to foreign languages and preferences. As for Wentrup's (2016) framework of online and offline entries it was verified in 4 cases – the entrance of these firms in markets where they have established subsidiaries (offline entries) happened only an online (through website or platform).

The results from the comparison between the companies' internationalization and the internationalization theories presented in the literature review leads us to conclude that no singular theory can completely explain the internationalization process of the firms researched. In general, BG/INV theories were found to be the most adequate to explain the internationalization paths adopted by Portuguese scaleups. There is also a clear relevance of the Network Model in the internationalization of scaleups, especially in what concerns the selection of markets to enter.

Conclusion and discussion of main lessons gathered

The value of entrepreneurship as a driving force of economic activity and as a source of employment has long ago been recognized by the academic community as well as by the political and business world. It has also been acknowledged that when startups succeed, they may succeed spectacularly (OECD, 2018). As shown in this dissertation, an essential part of the scaling up process is the entrance in new markets. Internationalization is key for startups that want to grow and acquire significant scale (Coviello, 2019), especially for those created in small domestic markets and with disruptive technologies that may have only a few domestic clients (Kudina et al., 2008).

Research has mainly focused on startups and on the internationalization of these small, innovative, and resource-constrained companies, overlooking the fact that many startup companies fail to scale and eventually disappear. This focus has led to a significant gap in the literature regarding scaleups (da Rosa et al., 2018; Monteiro, 2019) – entrepreneurial companies that are past their exploratory phase, have secured significant funding, and have already entered several foreign markets (Duruflé et al., 2017; Zhao et al., 2019).

The present dissertation fills this gap and enriches the literature by addressing the following research question: What are the internationalization paths adopted by Portuguese scaleups? To answer this question, an empirical application containing 11 interviews with founders and representatives of scaled-up startups was developed. Subsequently, a comprehensive individual and cross-case analysis of the results gathered in the interview process was undertaken. The international market strategies of Portuguese scaleups were also analysed in light of prior internationalization studies and connected to main internationalization theories.

Some key conclusions that arise from the empirical application are: even though these firms follow, at times, very different internationalization courses (in terms of entry modes, for instance), their motivations to go abroad are the same and they often face common barriers. First, evidence obtained highlights that the imperative of Portuguese scaleups to internationalize arose from limitations of the domestic market, namely its small size for the products and services these firms offered. The absence of a strong domestic market has two main implications: (1) it pushes firms to go abroad soon after foundation or right after achieving *minimum viable product* and (2) it creates dual companies. Although the home market might not be sufficient to build a strong competitive advantage, all the firms in the study conduct their R&D activities domestically due the presence of high-skilled human resources. Second, firms faced barriers related to cultural and linguistic distance and legal requirements. Our results shown that these barriers were surpassed by leveraging the market knowledge and contacts of local investors but also due to the high flexibility of these firms business model.

Furthermore, the success of Portuguese scaleups mostly relies on their offer which is highly innovative or disruptive, in some cases and, in all cases, deemed as of superior quality than the solutions offered by competitors. The scaling up process of Portuguese scaleups was highly underpinned in international markets where they leveraged digitalization and the use of ICT as well as advice provided by investors and partnerships with other companies to grow.

When observed in the light of relevant internationalization theories, strong links were found between these companies internationalization and two theoretical models: International New Venture/Born Global models concerning rapid internationalization processes and the Network Models which places internationalization decisions on the amount and depth of relationships firms possess in a certain market. However, no single theory fully explains any of the internationalization patterns of these companies.

For practitioners, the most striking advice that can be withdrawn about successful internationalization is that startups seeking to grow should have an international outlook and entrepreneurial orientation from inception; an innovative product, service or business proposition; and be willing to take risks.

As stated in the introductory chapter, this dissertation enables the inference of public policy measures. First, following previous studies that have addressed the topic of re-focusing public policy on scaleups (Isenberg, 2012; Mason & Brown, 2014), we suggest that Portugal should have more entrepreneurship policies instead of "small business policies" (Mason & Brow, 2014, p. 20). While the first type of policies focuses on providing support to companies with high growth potential which have higher relational capital needs than funding needs (Mason & Brow, 2014; Shane, 2009), the second type focuses on creating more startups. Accordingly, public policies should be more oriented to high potential entrepreneurs with better economic prospects. Secondly, as asserted by Coad et al. (2014) and confirmed in this study, scaleups can be found in many sectors besides high technology. However, Portuguese venture policymakers display a strong tendency for investing in these sectors which they believed to be the main generators of potential scaleups. Hence, re-focusing public policy should take into consideration scaleups in all sectors of activity.

Further research should focus on three main areas. First, in order to advance the literature on scaleups, finding a universally accepted definition and common criteria to refer to this type of firms in future works is of utmost importance. In addition, more longitudinal studies observing the evolution of startups into scaleups and the concurrent evolution of their international activities are also called-for. Moreover, future research should focus on the development of frameworks and models to guide high potential startups from the exploration to exploitation of global opportunities.

Finally, similarly to any scholarly research, the present study retains some limitations. The number of case studies is limited to eleven, which should be taken into consideration when gauging the generalizability of this research. A second limitation relates the exceptional circumstances in which the empirical part of this dissertation was conducted. The pandemic outbreak made the process of getting in touch with companies and scheduling interviews extremely difficult and time consuming. The firms' willingness to participate in the study was also negatively impacted as most companies were dealing with new challenges and work dynamics. Lastly, the qualitative case study methodology did not enable the quantitative treatment of data gathered nor the use of statistical inference or econometric techniques. Simultaneously, using interviews as the main data collection method leaves space for subjectivity and biases caused by respondents' opinions.

Although the generalizability of the current results must be tested by future research, the present dissertation has identified relevant patterns in the internationalization decisions of scaleups.

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Appendices

Appendix A. Bibliometric analysis of the terms "scaleup" and "scale-up" in reference databases.

In order to find the most pertinent articles on the subject under investigation, a search in bibliometric databases for the keyword "scaleup" and its variation – "scale-up" - was performed on 25th November 2019, following the steps presented in Table 2.

Table 2. Bibliometric search of the terms "scaleup" or "scale-up".

Database	Web of Science	Scopus
Total results	52,058 documents	44,641 documents
Main categories	"Engineering Chemical", "Biotechnology applied microbiology", "Chemistry multidisciplinary", "Material science multidisciplinary" and "Energy fuels".	"Chemical Engineering", "Engineering", "Chemistry", "Biochemistry, "Genetics and Molecular Biology", "Medicine", "Materials Science", "Environmental Science" and "Computer Science"
Category selection	The search was refined by selecting the category "Economics", with a total count of 344 documents.	The search was refined by selecting the category "Business, Management and Accounting" with a total count of 656 documents.
Refinement	Subsequently, the categories "Management" and "Business" were singled out and **25 documents** emerged.	Then, the search was limited to Journals from the Economic and Management Fields such as "Journal of Business Research" and "International Journal of Innovation and Technology Management" (17 Journals in total) and 39 **document results** emerged.
Analysis	After a comprehensive analysis of their titles and abstracts, it was found that none of the articles matched the purpose of the research.	
Final remark	The scarcity of suitable results can be explained by the fact that even within the economic field, the term "scaleup" is used in contexts other than that under research (such as production scale, economies of scale, etc.)	

Source: Own elaboration based on the results found in Web of Science and Scopus databases.

Appendix B. Interview Questionnaire

Internationalization paths of Portuguese Scaleups

Through the testimony of scaleup founders and representatives, the present study aims to explore the internationalization paths that have led to these firms' exponential growth. The answers to this questionnaire are confidential and will be used exclusively for academic purposes in the context of the present dissertation.

Interviewee: ____________________ **Position in the company**: ____________________

A. General data about the company

Company name: ________________Year of foundation: ________

HQ location: ______________ No. of employees: _____________

Turnover (2019): ________________ Founders: ________________________________

Main shareholders: ____

A.1. Has the firm presented a sustained annual average growth of employees or a turnover of more than 20% per year for the last three years? Yes ☐ No ☐

A.2. Business category/sector: _________________

A.2.1. Industry: ______________________________

A.2.2. Revenue model:

a) Subscription ☐
b) Commission ☐
c) Manufacturing ☐
d) Ecommerce ☐
e) SaaS ☐
f) Freemium ☐
g) Other: ______________

A.3. Client Focus: B2B ☐ B2C ☐

B. Funding

B.1. Main sources of investment by category of investment:

Non equity financing ☐ **Equity financing** ☐

1. Debt/Grants	☐	Venture capital (VC)	☐
2. Personal savings	☐	Corporate VC	☐
3. Bootstrapping	☐	Angel investment	☐
		Accelerators	☐

Other ☐ Which? ____

B.2. If VC backed:

Series of funding:

Seed ☐ A ☐ B ☐ C ☐ Other: _____

Total funding raised: ___________ Number of rounds: ___________

Last round: ___________Year: ____________ Sum: ____________

Other rounds: _________ Year: ____________ Sum: ____________

B.3. Source of investment

Foreign ☐ %___________ Domestic ☐ %_____________

B.4. Main sources of investment by country/region:

Country 1: _____________ Country 2: ____________ Country 3: ____________

B.5. What was the role of the investors in the internationalization of the firm?

____

C. Internationalization process

C.1.1. Time between foundation and first international activity/operation: _________

C.1.2. Time between foundation and having MVP: ____________

C.1.3. At what moment did the internationalization process start?

____

C.2. Entry modes used by the firm (multiple answers possible)

1. Exports through distributor ☐
2. Direct exports executed by the firm ☐
3. Strategic alliances with local firms ☐
4. Establishment of subsidiaries abroad ☐
    a) Sales and/or customer support ☐

b) R&D ☐
c) Manufacturing ☐

5. Virtual export channels ☐
6. Other ☐ Please clarify: ______________________

C.3. How many subsidiaries does the firm possess? _______

C.3.1. Location and type of subsidiaries:

Country 1: _____________ Type: ________________________

Country 2: _____________ Type: ________________________

Country 3: _____________ Type: ________________________

C.4. What were the first 3 international markets entered? [oldest entry first]

Country 1: _________________ Year: _________

Country 2: _________________ Year: _________

Country 3: _________________ Year: _________

C.5. Number of countries/markets in which the firm operates (2020): __________

C.6. When selecting new markets to enter, which factors were considered the most important? (0 – Not applicable; 1 – Not at all important; 2 – Not very important; 3 – Moderately important; 4 – Very Important; 5 – Extremely important)

	Equity entry modes						Non-equity entry modes					
	0	1	2	3	4	5	0	1	2	3	4	5
1. Geographic closeness	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
2. Linguistic and cultural proximity	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
3. Market dimension/potential	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
4. Following clients or potential clients	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
5. Level of technological development of a country	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
6. High demand for the firm's offer abroad	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
7. Existing personal or business ties	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
8. Local investors	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

9. Others – Which ones? ____

C.7. In which countries does the firm registers the highest sales volume and when did it entered those markets?

Country 1: ________________ Year: _________

Country 2: ________________ Year: _________

Country 3: ________________ Year: _________

C.8. Motivations to internationalize

(0 – Not applicable; 1 – Not at all important; 2 – Not very important; 3 – Moderately important; 4 – Very Important; 5 – Extremely important)

	0	1	2	3	4	5
1. Previous international experience of top managers	☐	☐	☐	☐	☐	☐
2. Growth aspirations and desire to access new markets	☐	☐	☐	☐	☐	☐
3. Small size of the domestic market	☐	☐	☐	☐	☐	☐
4. The need to obtain international funding	☐	☐	☐	☐	☐	☐
5. The presence of external equity investors	☐	☐	☐	☐	☐	☐
6. Targeting of a market niche with great global prospects	☐	☐	☐	☐	☐	☐

7. Others ☐ Which ones? ____

C.9 Where was the firm growth underpinned?

Domestic market (Portugal) ☐ International markets ☐

Please clarify: ____

C.10. Which factors had the most impact on the growth of sales and of the business in foreign markets? (0 – Not applicable; 1 – Not at all important; 2 – Not very important; 3 – Moderately important; 4 – Very Important; 5 – Extremely important)

	0	1	2	3	4	5
1. High quality and innovative product/service	☐	☐	☐	☐	☐	☐
2. A strong network of partners	☐	☐	☐	☐	☐	☐
3. Favourable price-value ratio of the product/service	☐	☐	☐	☐	☐	☐
4. Reputation of the company	☐	☐	☐	☐	☐	☐
5. Building an efficient distribution network	☐	☐	☐	☐	☐	☐
6. Understanding the costumer's needs	☐	☐	☐	☐	☐	☐
7. Strong digital marketing strategies	☐	☐	☐	☐	☐	☐

C.11. Main factors that hampered the growth of the business in foreign markets:

(0 – Not applicable; 1 – Not at all important; 2 – Not very important; 3 – Moderately important; 4 – Very Important; 5 – Extremely important)

	0	1	2	3	4	5
1. Access to funding	☐	☐	☐	☐	☐	☐
2. Geographic distance and different time zones	☐	☐	☐	☐	☐	☐
3. Legal requirements	☐	☐	☐	☐	☐	☐
4. Linguistic and cultural differences	☐	☐	☐	☐	☐	☐
5. Strong competition aboard	☐	☐	☐	☐	☐	☐
6. Lack of brand awareness	☐	☐	☐	☐	☐	☐
7. Minimal entry barriers in the firm's market	☐	☐	☐	☐	☐	☐
8. Distribution inefficiencies	☐	☐	☐	☐	☐	☐
9. Client acquisition	☐	☐	☐	☐	☐	☐
10. Finding good partnerships	☐	☐	☐	☐	☐	☐

11. Others ☐ Which ones? ____

C.12. Which markets were the most challenging to enter and why?

Country 1:__________ Reason: ____

Country 2:__________ Reason: ____

Country 3:__________ Reason: ____

C.13. Was the network important for overcoming these issues?

____

C.13.1. What international network actors played a relevant role in the internationalization process and how?

____

C.14. What are the long-term objectives of the company?

1. Open new offices in key global markets ☐
2. Continuous innovation ☐
3. Exit through acquisition or IPO ☐
4. Establishment of a long-lasting global brand ☐
5. New investment rounds ☐
6. Others ☐ Which? ____

D. The role of digitalization and innovation in the internationalization process

D.1. Technologies adopted by the firm:

____

D.3. What were the main uses given to the Internet/website/social media in the internationalization of the firm?

1) Distribution of content about products/services and the company ☐
2) Sell products or services via an online store/platform ☐
3) Enable interactions with costumers/potential partners ☐
4) Locate costumers and deliver costumer support ☐
5) Increase feedback and brand recognition ☐

Others ☐ Which ones? ____

D.4. What is the level of investment of the firm in R&D activities?

Low ☐ Medium ☐ High ☐

Please clarify: ____

D.5. Where are the R&D activities located?

Portugal ☐ International markets ☐ Where? ____________

D.6. What is the level of investment of the firm in digital marketing?

Low ☐ Medium ☐ High ☐

Please clarify: ____

Appendix C. Tables

Table A. 1. Defining and characterizing startups.

Authors	Definitions of "startup"	Characteristics mentioned					
		Business model scalability	**Innovativeness**	**Young age**	**Growth aspirations**	**Leveraging technologies**	**Temporary nature**
Steigertahl, et al. (2018)	Firms younger than 5 to 10 years depending on sector that demonstrate innovation – of the product, service, or business model – and pursue scalability - intention to grow whether in number of employees and/or markets in which the firm operates.	X	X	X	X		
Tanev (2017)	New international ventures that leverage innovative technologies and business models to generate new market niches.		X	X		X	
Blank and Dorf (2012)	New, independent, and temporary organizations that have not yet settled upon a scalable business model and are still experimenting intensely.	X		X			X
Filippov and Hofheinz (2016)	Newly created entrepreneurial ventures that are highly innovative and built on ideas, technologies or business	X	X	X		X	

	models that did not exist before and are designed to search for a repeatable and scalable business model.						
Autio (2016, p. 8).	"a startup is a new, independent firm, up to six years old, which is strongly growth-oriented, has not yet settled upon a scalable business model, and spends at least 15% of its operating expenses on R&D"	X		X	X	X	
European Commission, (2016, p. 23)	"a growth-oriented small enterprise, up to 5 years old, searching for a scalable business model or innovative product/service, and open for alternative financing"	X	X	X	X		
Ries (2011, p. 7)	"a start-up is a human institution designed to create a new product or service under conditions of extreme uncertainty"		X				

Source: Own elaboration.

Table A. 2. Criteria for defining scaleups.

Definition	Authors
A company that possesses more than 10 employees and has demonstrated growth (in number of employees or profit) of at least 20 per cent a year over the last three years.	OECD-Eurostat (2007)
	Cherry Coutu (2014)
	Isenberg and Onyemah (2016)
A company that has raised 1m euros or more of venture capital funding (since foundation)	Startup Europe Partnership Monitor (2017)
	Autio (2016)
	Mind the Bridge (2017)
A company that has validated a scalable business model.	Zhao et al. (2019)
	Onetti (2014)
	Picken (2017)
	Zajko (2017)
	Monteiro (2019)
Less than 10 years old.	Autio (2016)
	The Kauffman Foundation (2017)

Source: Own elaboration.

Table A. 3. Experts interviewed and topics covered in the interviews.

Interviewee	Position held	Date	Length	Topics discussed					
				Scaleup concept	Ecosystem	Venture capital & investment	Internationalization	List of scaleups to interview	The role of digitalization
Dr. Marco Fernandes	President of PME Investments	June 3rd	30min	✓		✓	✓	✓	
Dr. Rui Ferreira	Vice-president of Portugal Ventures	June 4th	30min		✓	✓	✓	✓	
Inês Santos Silva	Founder of Startup Pirates, PortugalStartups.com and Portuguese Women in Tech	June 5th	20min	✓			✓	✓	
Daniela Monteiro	Head of Entrepreneurship at Porto Digital	July 2nd	40min	✓	✓	✓	✓	✓	✓
Dra. Clara Gonçalves	Former Executive Director of UPTEC	July 7th	50min	✓	✓		✓	✓	✓
Dr. Carlos Oliveira	Former Secretary of State for Entrepreneurship, Competitiveness, and Innovation	July 8th	25min	✓		✓	✓	✓	

Source: Own elaboration

Table A. 4. General data on companies interviewed (Interview Section A)

Firm	Interviewee's position	Foundation year	HQ Location	Nr. of employ-yees	Income stream	Industry	Revenue Model	Average annual growth of 20% a year in the last three years in number of:	
								Employees	Revenue
A	Founder & CEO	2013	Lisbon	52	Subscription & Commission	Human resources	B2B and B2C	Yes	Yes
B	Founder & CEO	2012	California	61	Subscription	Wireless	B2B	No (only in 2019 due to a change in strategy)	Yes
C	Founder & CEO	2014	Porto	18	Selling own inventory Manufacturing, Subscription	Refrigerated logistics	B2B	Yes	Yes
D	Founder & CEO	2015	Porto	71	Saas, Subscription	Enterprise software	B2B	Yes	Yes
E	Founder & CEO	2017	Porto	40	Marketplace & e-commerce, subscription	Food, food logistics & delivery	B2C	Yes	Yes
F	Founder & CEO	2011	Lisbon	90	Marketplace & e-commerce	Software	B2C and B2B	Yes	Yes
G	General Manager EMEA	2011	San Francisco	1100	Saas. Subscription	Enterprise software	B2B	Yes	Yes
H	Head of Performance Marketing	2013	Lisbon	160	Rental platform	Tourism	B2C	Yes	Yes
I	Founder & CEO	2015	Birmingham	17	Manufacturing	Health;	B2B	Yes	Not applicable
J	Founder & CEO	2013	Porto	18	Manufacturing.	Energy;	B2B	Yes	Yes
K	Founder & CEO	2015	Felgueiras	41	Subscription;	Enterprise software.	B2B	Yes	Yes

Observation: Data on turnover was kept confidential as required by some of the firms.

Source: Own elaboration.

Table A. 5. Breakdown of sources of venture capital investment by country/region (Interview Guidelines B.3. and B.4.).

<table>
<tr><th>Source of funding by country/region</th><th>Seed round</th><th>Pre-series A & Series A</th><th>B</th><th>C</th><th>Continent</th><th>No. of foreign investors</th></tr>
<tr><td>Domestic</td><td>10</td><td>12</td><td>6</td><td>0</td><td rowspan="3">Europe</td><td rowspan="3">11</td></tr>
<tr><td>Germany</td><td>1</td><td>1</td><td>0</td><td>0</td></tr>
<tr><td>USA</td><td>2</td><td>12</td><td>2</td><td>5</td></tr>
<tr><td>European Union</td><td>1</td><td>1</td><td>1</td><td>0</td><td rowspan="3">North America</td><td rowspan="3">21</td></tr>
<tr><td>Poland</td><td>0</td><td>1</td><td>0</td><td>0</td></tr>
<tr><td>Spain</td><td>0</td><td>1</td><td>1</td><td>0</td></tr>
<tr><td>Singapore</td><td>0</td><td>1</td><td>0</td><td>0</td><td rowspan="2">South America</td><td rowspan="2">1</td></tr>
<tr><td>China</td><td>0</td><td>1</td><td>0</td><td>0</td></tr>
<tr><td>UK</td><td>1</td><td>1</td><td>0</td><td>0</td><td rowspan="4">Asia</td><td rowspan="4">2</td></tr>
<tr><td>France</td><td>0</td><td>1</td><td>0</td><td>0</td></tr>
<tr><td>Brazil</td><td>0</td><td>1</td><td>0</td><td>0</td></tr>
<tr><td>Australia</td><td>0</td><td>0</td><td>0</td><td>1</td></tr>
<tr><td>Not applicable</td><td>0</td><td>2</td><td>9</td><td>10</td><td rowspan="5">Oceania</td><td rowspan="5">1</td></tr>
<tr><td>Confidential</td><td>0</td><td>1</td><td>0</td><td>0</td></tr>
<tr><td>Total of investors*</td><td>15</td><td>33</td><td>10</td><td>6</td></tr>
<tr><td>Domestic</td><td>10</td><td>12</td><td>6</td><td>0</td></tr>
<tr><td>Foreign</td><td>5</td><td>21</td><td>3</td><td>6</td></tr>
</table>

Observation: Each investment round can encompass more than one investor and from different countries. The high number of investors in the third column derives from the fact that most firms are currently in a Pre-Series A or A round.

Source: Own elaboration.

Table A. 6. Analysis of the time frame between foundation and internationalization (Interview Guidelines C.1.1, C.1.2. and C.1.3.)

Companies	Period between foundation and first international activity	Period between foundation and product development before initiating sales	Speed of internationalization
A	Less than 1 year	From inception	Simultaneously with the establishment in the domestic market
B	2 years	2 years	After testing product in the domestic market
C	3 years	2 years	After initiating sales in the home market and finding good partnerships
D	1 year	1 year	After finding product-market fit and testing the home market
E	1 year	1 year	A few months after the establishment in the domestic market
F	From inception	From inception	Immediately global due to the nature of the service provided
G	From inception	From inception	Immediately present in Portugal and the US with clients in both countries but further international entrances only started in the 5th year of operations
H	2 years	2 years	2 years after the establishment in the domestic market
I	5 years	5 years	After achieving MVP and regulatory approval
J	3 years	3 years	After achieving MVP and initiating domestic sales
K	2 years	2 years	After after achieving MVP and initiating domestic sales

Source: Own elaboration.

Table A. 7. Entry modes adopted and analysis of number, location, and type of subsidiaries (Interview Guidelines C.2. and C.4.)

Firms	Entry modes adopted					Nr. of subsidiaries	Location of subsidiaries	Type of subsidiary
	Direct exports	Exports through intermediary	Virtual sales channels	Establishment of subsidiaries	Joint venture			
A			X			0	-	-
B	X	X		X		3	US (2), Singapore, Portugal	US (local operations), Singapore (local operations and partnerships), Portugal (R&D)
C	X	X				0	-	-
D	X	X		X		4	Brazil, UK, US, Spain	Sales and customer support
E			X			0	-	-
F			X	X	X	2	Singapore, China	Operational support to partnerships with game developers
G	X	X		X		7	Portugal, Canada, United States, England, Spain, France and Germany	Portugal (R&D), US (HQ), Remaining countries (Sales and customer support)
H			X	X		14	Spain, France, Italy, Germany, Croatia, Iceland, UK, Belgium, Austria, the Netherlands, Switzerland, Sweden, Ireland, Scotland	All for storage, logistics and on-site customer support
I		X		X		1	Portugal	R&D (Current headquarters in the UK)
J	X	X				0	0	-
K			X	X		2	Spain, United Kingdom	UK (office just to increase firm's reputation) and Spain (Local operations)

Source: Own elaboration.

Table A. 8. First international markets in which the companies entered or registered sales (Interview Guideline C.3.)

Markets	**M1**	**M2**	**M3**	**Total**
Spain	3	2	1	6
United Kingdom	2	1	1	4
United States	2	2	0	4
Germany	1	1	1	3
Brazil	0	1	1	2
France	0	1	1	2
Italy	0	1	1	2
Singapore	1	1	0	2
Angola	1	0	0	1
Cabo-verde	0	0	1	1
Canada	0	0	1	1
Dubai	0	0	1	1
Hong Kong	1	0	0	1
Japan	0	0	1	1
Mexico	0	1	0	1
The Netherlands	0	0	1	1
Total	11	11	11	33

Description:

M1 – first market entered;

M2 – second market entered;

M3 – third market entered.

Source: Own elaboration.

Table A. 9. Top 3 international markets where the companies register the highest sales/business volume (Interview Guideline C.7.)

Markets	**M1**	**M2**	**M3**	**Total**
Europe (in general)	0	2	0	2
Spain	3	1	1	5
United Kingdom	0	1	0	1
United States	4	1	0	5
Germany	1	1	1	3
Brazil	1	0	0	1
France	0	0	1	1
Italy	0	2	0	2
Japan	1	0	0	1
The Netherlands	0	1	0	1
Scandinavia	1	0	0	1
Information not available	0	2	8	10
Total answers	11	9	3	23

Description:

M1 – Market where companies register most of their foreign sales;

M2 – Second market where companies register most of their foreign sales;

M3 - Third market where companies register most of their sales.

Source: Own elaboration

Table A. 10. Most challenging markets entered, and barriers identified by companies (Interview Guideline C.12.)

Most challenging markets	Specific barriers identified
United Kingdom	Brexit
	High custom duties
	Product adaptation requirements
Germany	Cultural differences
Spain	First market entered, lack of knowledge
China	Legal requirements
	"Great Firewall of China"
	Different time zones and culture
Switzerland	Legal requirements
South Korea	Cultural distance
United States	Finding and securing enough funding to enter this market.
	Regulatory barriers
The Netherlands	Strong competition
Europe (in general)	Automotive companies in Europe are risk-averse and do not often work with startups.
Italy	Cultural and linguistic distance
Iceland	Geographic distance

Source: Own elaboration.

Table A. 11. Partnerships identified by companies and their level of impact on international expansion and growth (Interview Guideline C.13 & C.13.1).

FIRMS	Partnerships pinpointed in interviews or found through secondary sources	Impact of partnerships on the international expansion and growth of the firms
A	Foreign partnerships in the Spanish and German markets with recruitment agencies.	Strong ,mainly in Germany where the partnership helped the firm penetrate several cities and get a better understanding of the market.
B	Several institutional partnerships. Alliances with two major telecom operators and two global equipment manufacturers.	Through strategics alliances the company has internationalized their product to several countries.
C	Partnerships with Portuguese logistics MNEs helped develop the company's product. Other relevant partnerships with German partners that implemented and helped internationalize the company's product.	Global clients serve as good references, spread the company's solution throughout their subsidiaries and facilitate new client acquisition in their markets.
D	Entrance in Brazil through a partner before establishing own subsidiary. Creation of a Partners Programme where other companies apply to be partners and provide customer support during the implementation process	Partnerships allow for fast penetration of the Company's technology in foreign markets (especially in Africa and Middle East). Partnerships helped establish the firm's presence in Brazil and acquire knowledge before FDI.
E	A strong network of partnerships with veterinarian clinics and pet-friendly business partners.	An important part of the service offered by Company E is the provision of complementary services (available in multiple countries) such as veterinarian assistance, making these partnerships essential for growth (both domestic and internationally)
F	Partnerships with game developers, telecommunication operators and mobile device manufacturers (all in the Asian market)	Strong partnerships enabled lower risk FDI and helped increase penetration and brand reputation in foreign markets.
G	The company created a strategic partner's programme in which other companies can apply to re-sell Company G solution to their end costumers. Moreover, Company G leverages partnerships with big Master Agents with several national and regional sub-agents in the US.	Partnerships were not explored by interviewee and information available is scarce. However, it was found that the firm has several small partners that work as re-sellers in many countries.
H	Partnership with a van producer (supplier) and a leasing company.	Partnerships were not deemed relevant in the interview.
I	Distribution agreement with one of the largest distributors in the United States.	It will enable a fastest spread and penetration of the firm's medical device in the North American markets.
J	Companies that start as clients and after testing Company J's product in Portugal take it to their	Productivity-oriented partnerships (clients consume the scaleups' technology). Moreover, Company J benefited from

	subsidiaries and work as good references for the firm's portfolio.	a MNE experience and facilitated access to markets in which the latter operates in Europe, Africa and Asia)
K	Product partnership with a Portuguese IT company. Moreover, given the dimension of each contract, clients work as partners in the implementation of the company's technology. Company K also works in proximity with universities (institutional partners). Obs: Further information on partnerships was asked to be kept confidential.	Company has partnerships with clients in Spain, Hong Kong and Norway that facilitated growth of brand-awareness and reputation. The dimension/relevance of Portuguese clients was also essential for the international growth of the firm.

Source: Own elaboration.

Table A. 12. Comparison of the firms' internationalization process with predominant theoretical approaches to internationalization.

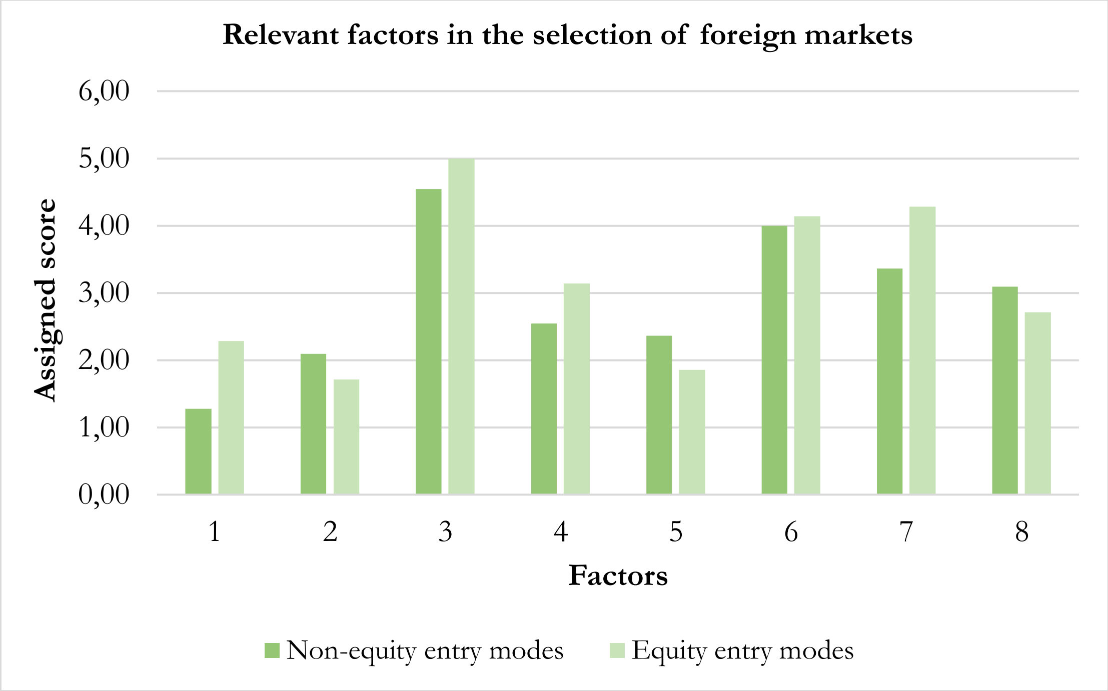
Theoretical approaches	Main defining characteristics of different theoretical approaches	Companies that fit main characteristics from each theory
The Stages Model (Section 1.3.1.)	Entrance in foreign markets only after the establishment in the domestic market (Johanson & Vahlne, 1997).	E, H
	Internationalization process starts via exports/direct sales in psychically closer markets (to the domestic market) and then advances to more distant markets (Johanson & Vahlne, 1977).	E, H
	Gradual knowledge acquisition in foreign markets results in increased commitment (Johanson & Vahlne, 1977).	B, C, D, E, F, K
	Liability of foreignness - additional costs faced by foreign companies and not by local firms (Chen, 2006)	D, F, G, H, I
Network model (Section 1.3.2.)	Firm entered markets where network partners were located (Johanson & Vahlne, 2009).	A, B, C, E, F, I, J
	As the degree of internationalization increases, there is an increase in the amount and depth of high commitment connections all over the world (Coviello & Munro, 1995).	B, D, F, G, I, K
	Pre-established relationships as determinant in the selection of entry modes (Johanson & Vahlne, 2009)	B, C, F,
Born Global/ International New Venture (Section 1.3.3.)	Early market commitment (within 2 or 3 years after inception) (Hennart, 2014; Knight & Cavusgil, 2004)	A, C, D, E, F, G, H, J
	Managers have a strong international outlook from inception (Bailetti, 2012)	A, B, C, D, E, F, G, I, J
	Low risk entry modes: direct international sales or external, independent intermediaries for distributing their products abroad (Tanev, 2012)	A, C, E, J
	Leverage advanced innovative information and communications technologies (ICT) (Rialp et al., 2005)	All of them
	Operating high-technology sectors where they create value through product differentiation and leading-edge technology products (Oviatt et al, 1995)	B, C, D, F, G, I, J, K
	Cater the needs of global market niches (Cavusgil & Knight, 2019)	A, B, C, E, H, I, J, K
	Companies that seek to derive a substantial proportion of their revenue from international market sales (Hennart, 2014)	All of them

Internationalization framework of digital firms (1.5.2)	Passive/active internationalization through general website and then adaptations to the firm website or output (Hazarbassanova, 2016)	D, F
	Initially entering a new market only by making their product available online – website or platform – for that market and then initiating local operations – offline entry (Wenturp, 2016)	D, F, G, K

Source: Own elaboration.

Appendix D. Figures

Figure A. 1 Relevant factors in the selection of foreign markets – comparison between equity and non-equity entry modes (Interview Guideline C.6.)



Description:

Assigned score: 1 – Nothing important; 2 – Not very important; 3 – Moderately important; 4 – Very Important; 5 – Extremely important.

1- Geographic proximity
2- Linguistic/cultural proximity
3- Market dimension/potential
4- Following clients or potential clients
5- Level of technological development of a country
6- High demand for the firm's product/service in foreign markets
7- Existing personal or business ties
8- Local investors

Source: Own elaboration.

Figure A. 2 Motivations to internationalize (Interview Guideline C.8.)

Description:

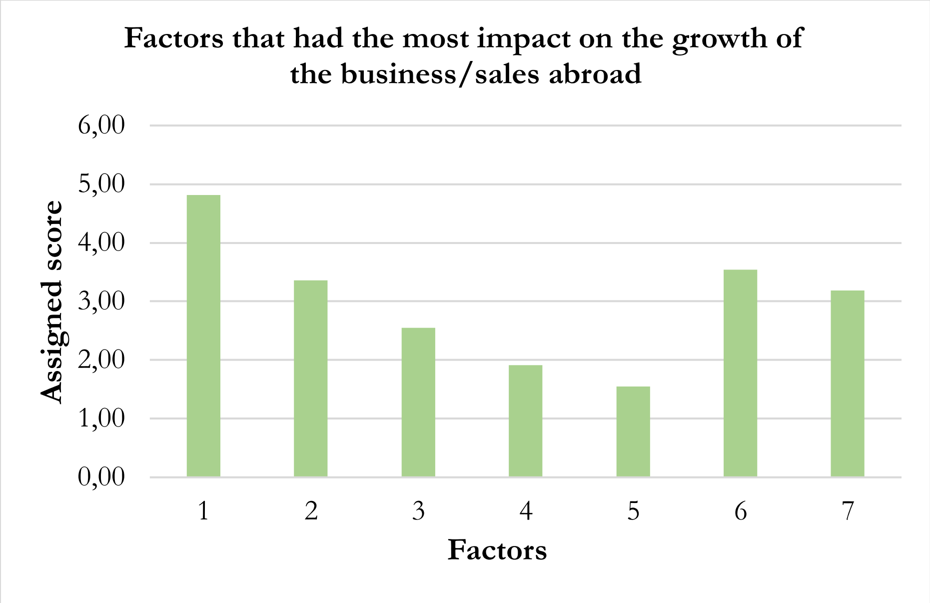
Assigned score: 1 – Nothing important; 2 – Not very important; 3 – Moderately important; 4 – Very Important; 5 – Extremely important.

Motivations:

1. Previous international experience of top managers
2. Growth aspirations and desire to access new markets
3. Small size of the domestic market
4. The need to obtain international funding
5. The presence of external equity investors
6. Targeting of a market niche with great global prospects

Source: Own elaboration.

Figure A. 3 Most relevant factors influencing the growth of the business/sales in foreign markets (Interview Guideline C.10)



Description:

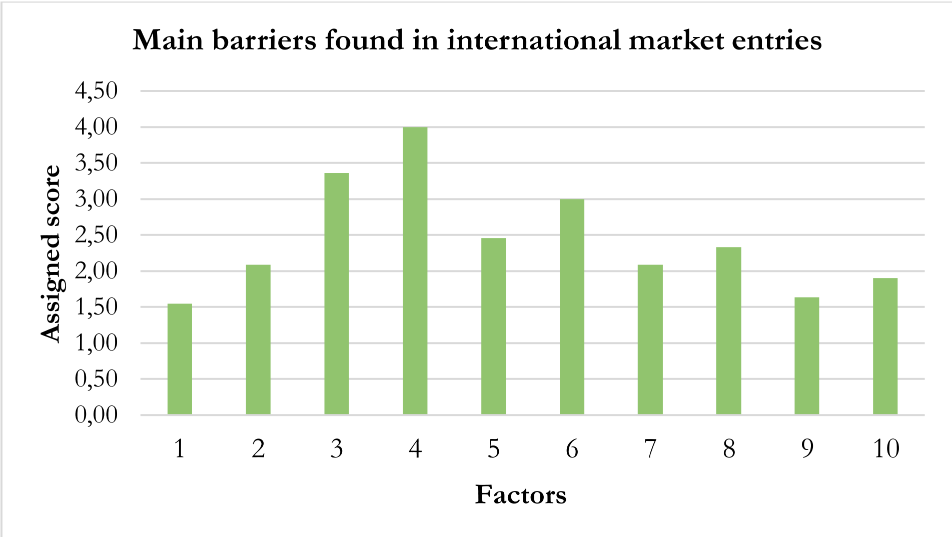
Assigned score: 1 – Nothing important; 2 – Not very important; 3 – Moderately important; 4 – Very Important; 5 – Extremely important

Factors:

1. High quality and innovative product/service
2. Strong network of partners
3. Favourable price-value ratio of the product/service
4. Reputation of the company
5. Building an efficient distribution network
6. Understanding the costumer's needs
7. Strong digital marketing strategies

Source: Own elaboration.

Figure A. 4 Main barriers found when entering new markets (Interview guideline C.11)



Description:

Assigned score: 1 – Nothing important; 2 – Not very important; 3 – Moderately important; 4 – Very Important; 5 – Extremely important

Barriers:

1. Access to funding
2. Geographic distance and different time zones
3. Legal requirements
4. Linguistic and cultural differences
5. Strong competition aboard
6. Lack of brand awareness
7. Minimal entry barriers in the firm's market
8. Distribution inefficiencies
9. Client acquisition
10. Finding good partnerships

Source: Own elaboration.