The Portuguese Startup Ecosystem:
Key Success Factors on the Entrepreneurial Ecosystem

Team-Focus vs. Idea-Driven

André Rodrigues Parracho

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Abstract

The purpose of this research is to identify the main driver for Portuguese startups between team oriented factors and product/market oriented factors. Given the importance of startups in the economic growth of modern economies - in job creation or innovation, it is crucial to identify what drives startup success and how it differs between ecosystems. We aim at understand the characteristics of the Portuguese entrepreneurial ecosystem and compare the Portuguese environment with startup ecosystems in the USA and in Germany. First in terms of strengths and areas for improvement of the national ecosystem, and second on the critical factors for success in the perspective of entrepreneurs. The research was developed through survey interviews in which was asked to 92 entrepreneurs from Portuguese startups that participated in Web Summit 2016 to rank ecosystem factors in terms of satisfaction and importance to success. In this study, the factors that affect the startup ecosystems are analyzed and compared, suggesting that the Portuguese ecosystem for startups has a favorable human capital pool and a conductive culture that fosters entrepreneurship. On the other hand, should improve government policy and support from accelerators and incubators. The Portuguese entrepreneurial ecosystem, even though mixed in terms of primary driver for success, is mainly driven by people factors, being key in this ecosystem to access and capture talented people, but also to access international markets. It is found that ecosystems conditions are favorable to the main drivers for success in the perspective of entrepreneurs.

Keywords: Portuguese entrepreneurial ecosystem; key success factors; favorability factors; satisfaction; environmental success factors; US startup ecosystem; Germany startup ecosystem; entrepreneurial ecosystems comparison; entrepreneurial ecosystems assessment; entrepreneurship; startup environment.

Resumo

O propósito deste estudo é a identificação do principal motivador para as startups portuguesas, entre fatores humanos e fatores relacionados com produto/mercado. Dada a importância das startups no crescimento económico nas economias modernas, seja por criação de emprego ou inovação, é crucial identificar o que leva as startups ao sucesso e como isso difere entre ecossistemas. Pretende-se perceber as características do ecossistema português para o empreendedorismo, comparando-o com ecossitemas de startups nos EUA e na Alemanha. Esta comparação é feita em termos de forças e áreas a melhorar no ecossistema nacional e posteriormente, em termos de fatores críticos para o sucesso na perspectiva do empreendedor. O estudo foi desenvolvido através da resposta a questionários feitos a 92 empreendedores de startups portuguesas que participaram na Web Summit 2016, para que avaliassem fatores do ecossistema, em termos da sua satisfação e importância para o sucesso. Neste estudo, os fatores que afetam o ecossistema de startups são analisados e comparados, sugerindo que o ecossitema português de startups tem capital humano favorável e normas culturais que fomentam empreendedorismo. Por outro lado, devem ser melhoradas políticas governamentais e apoio por parte de aceleradoras e incubadoras. O ecossistema português de empreendedorismo, apesar de misto em termos do principal condutor para o sucesso, é fundamentalmente impulsionado por fatores humanos, sendo essencial o acesso e retenção de pessoas talentosas mas também o acesso a mercados internacionais. Por fim, é exposto que as condições do ecossitema asseguram de forma satisfatória os fatores mais importantes para o sucesso de startups.

Acknowledgments

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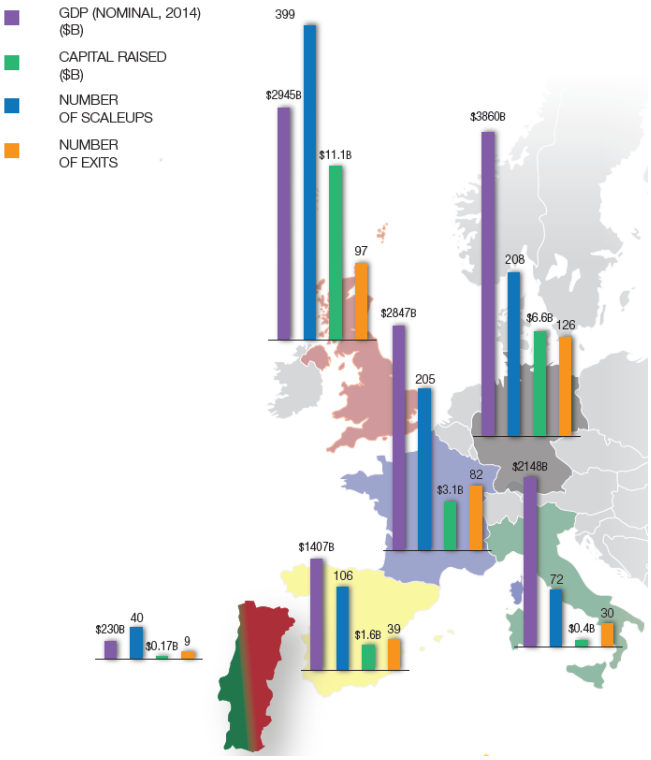
I. INTRODUCTION

The entrepreneurial ecosystem has been an important engine of modern economies (Isenberg, 2010). Promoting competition among prevailing businesses, startups have been disrupting the fundaments of existing industries and offering a more valuable alternative for consumers and businesses than what established companies can offer (Amit & Zott, 2001). The increase in rivalry brought by startups fosters productivity and prosperity in the economy as starting up and scaling new ventures is a vital element for job creation, innovation and economic growth (Clarysse, Wright & Van Hove, 2015). Disruptive practices are emerging from Silicon Valley to Tel-Aviv and while it is impossible to simply replicate an ecosystem, there are road maps and valuable lessons that can be followed (Isenberg, 2010). In 2015, Lisbon became the first city to receive the European Entrepreneurial Region award. Investors from across the world and specifically from Europe have started to look at Lisbon to capitalize on the relatively low cost of living and low rents, affordable IT talent and tech-friendly infrastructure (Laird, 2016).

I.1. Overview of The Portuguese Entrepreneurial Ecosystem

Nine Portuguese startups already had a successful exit from the ecosystem, attracting the interest of foreign acquirers, primarily from the US (SEP Monitor, 2015). Despite being young, the Portuguese startup ecosystem is growing well and fast (SEP Monitor, 2015). In fact, from 40 Portuguese information and communication technology (ICT) scaleups[1] since 2010 to 2015, $166M was raised (figure 1), and 65% of them had a funding event in the last two years. The 40 Portuguese ICT scaleups have raised almost 200 million dollars since inception which is a relatively small figure if compared with other European countries like the UK, Germany,

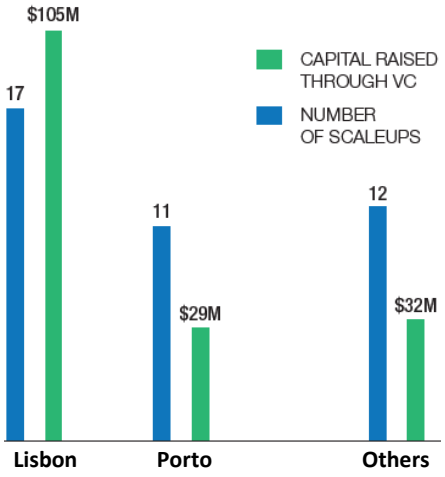
Figure 1 - Comparison of the Portuguese Scaleup Ecosystem. Source: SEP Monitor 2015



[1] Scaleups are a category of startups that raised funds over a million dollars.

France, Spain and Italy (figure 1). The $166M raised is 39 times less than the amount raised in Germany, which had 5 times more scaleups in the same period. Nevertheless, the amount of capital raised by Portuguese scaleups is not a small number if consider the relative smaller size of the Portuguese economy (nominal GDP in billions as of 2014 on figure 1). According to the Global Entrepreneurship Monitor (GEM[2]) between 8 and 9 Portuguese adults in every 100 are early-stage entrepreneurs, from results of 2013. To be precise, Total early-stage Entrepreneurial Activity - TEA[3] - was 8.3% for Portugal that year. Contrasting with other countries, Germany had 5.3% in 2014 (Sternberg, Vorderwulbecke, & Brixy, 2014) far distanced from the world leader US with 13.8%, which continues a four-year pattern of high and stable total early-stage entrepreneurial activity rates (Kelley et al., 2015). Despite Portugal lacks very behind the US regarding the TEA indicator, the entrepreneurial intention to start a business in the next three years of those who are not involved in any stage of an entrepreneurial activity is very similar in both countries, 13% in Portugal and 12% in the US, while in Germany is 6% (GEM, 2013). GEM also reports that austerity measures in Portugal have driven unemployment levels to record highs and entrepreneurship has proven an escape route (GEM, 2013). People are being attracted to the Portuguese startup scene which in turn encourage international players to enter in the ecosystem - as is the example of Seedcamp[4] that has moved to Lisbon instead of the usual location in Spain. In the past few years, Portugal has shown signs of becoming more attractive for international well established players ranging from investors to accelerator programs, which are often more resourceful than the national ones, by having either established international networks or easier access to capital (Cruz and Carreira, 2016). The fast-growing startup ecosystem of Lisbon and its geographic similarities with the city of San Francisco, USA, is making the city of Lisbon be referenced as Europe's San Francisco (Bloomberg, 2015). Bloomberg adds that "The Portuguese capital already has the bridge, trams and surfers. Now it's starting to show off its tech strength too, with a raft of startups in Lisbon catching the attention of international investors" – writes Caroline Hyde in "The West Coast of Europe Wants to Be the New West Coast" (Bloomberg, 2015). In Lisbon, the amount of capital raised from scaleups since 2010 was much higher than in other geographic locations of the country (figure 2). (Details on the

Figure 2 - Scaleup Hotspots (SEP Monitor, 2015)



[2] GEM is a group of scholars in entrepreneurship that studies the complex relationship between entrepreneurship and economic growth providing custom datasets, special reports and expert opinion on the entrepreneurship ecosystem.
[3] TEA measures the percentage of 18-64 population who are either a nascent entrepreneur or owner-manager of a new business.
[4] Seedcamp is the first European Y Combinator style accelerator.

location of "Others" can be found in Appendix, figure 41). Additionally, accelerators are showing to have an impact on the Portuguese entrepreneurial ecosystem (Foundum, 2013). In 2015, 156 startups went through a Portuguese accelerator program where 327,000 USD were invested by 4 accelerators (Brunet, Grof & Izquierdo, 2016). Beta-i is the top entrepreneurial promoter in the country and the second most active in Europe, 95 ventures went through its program. (Brunet, Grof & Izquierdo, 2016). There is significant evidence of accelerators to improve the outcome of startups and these benefits spill over into the startup community having a positive impact on the ecosystem (Hathaway, 2016). Thus, the accelerators have a responsibility role in boosting entrepreneurial performance in Portugal, since they have the capabilities to bring experienced mentors and important players from the international startup scene to Portugal that invest in the Portuguese potential. As it was in the case of Seedcamp, that has taken on investments in several Portuguese startups and that has been in Portugal because of the continuous effort of Beta-i to bring the renowned program to the country. Beta-i cultivates their own startup ecosystem and promotes credibility by spreading the word about what is going on in Lisbon across the main startup hubs of the world like Silicon Valley, London, Berlin and Tel-Aviv through the Lisbon Challenge Roadshow (Marvão, 2015)[5]. The formula seems to be working since in the last few years 3 startups that went through Beta-i program (Unbabel, Orankl and Impraise) were on Y Combinator[6] - both Y Combinator and Seedcamp started as a seed accelerator but have expanded and changed their program offerings and are now considered to be seed funds. World phenomenon such as Dropbox, Airbnb, Weebly and Reddit went through Y Combinator which is seen as the most successful program of its kind, having a 1% to 2% acceptance rate from all applications and 72% of its startups receive further external funding after graduation (Rich, 2013). Startup accelerators can serve as a deal aggregator and a first quality checker for investors as they spot and nurture the most promising early stage ventures on the market (Clarysse, Wright, & Van Hove, 2015; Hathaway, 2016). Furthermore, Portugal has been opening the doors to entrepreneurship and the fact that Web Summit has been moved to Lisbon where the international conference will be held at least from 2016 to 2018 clearly shows the increased attractiveness of Portugal as an important hub for the startup industry worldwide (Foundum, 2013). Despite Web Summit's HQ remains in Dublin, the company will open an office in Lisbon being the first to integrate the new 3,000 m^2 creative hub in Beato, Marvila (Pimentel, 2016). With 53,056 attendees from 166 countries over 3 days, Web Summit is the biggest event of its kind in Europe and it was expected to return at least 175 million Euros to the local economy (RTP Notícias, 2016). Paddy Cosgrave, founder and CEO of Web Summit points out that they needed a new home for future growth and the choice of Lisbon happens because of the strong infrastructure in the

[5] Ricardo Marvão is Co-Founder and Board Member of Beta-i
[6] Y Combinator, established in 2005, is the first program of its kind introducing the "cash for equity" model.

city, the world-class venue and the thriving startup community that is emerging in the city (Cosgrave, 2015).

I.2. Problem Statement and Research

Problem

The emergence of big Portuguese startups and the vibrant entrepreneurial environment found in Lisbon deserves a deeper understanding of the phenomena, as knowledge in the academic world is missing for this particular ecosystem. What should Portugal do to improve entrepreneurship and strengthen its competitive advantages on this area? To answer this question is essential to fully understand the characteristics of the Portuguese entrepreneurial ecosystem. Particularly, we will research the problem related to drivers of success on Portuguese startups. As such we will characterize the startup environment in Portugal by comparing the Portuguese drivers of success and satisfaction of startups with those of the USA and German ecosystems. The startup ecosystem, also called entrepreneurial ecosystem, is the result of specific set of environmental factors influencing on the success of new ventures over time (Isenberg, 2010; Isenberg, 2011a; Acs, Autio, & Szerb, 2014; Feldman, Francis, & Bercovitz, 2005; Feld, 2012). The understanding of what those are can facilitate a clear characterization of the ecosystem in terms of its primary characteristics and drivers. So, for that matter, with the purpose of answering the question of what drives startup success and to draw comparisons with ecosystems from around the world, the study focus on the understanding the factors that are critical to achieve success in the three ecosystems and the identification of key areas for improvement for startups, incubators, accelerators and policy makers, with the purpose of promoting a healthier environment for startups. In that sense, it is very important to differentiate two concepts that will arise during this study. First, the strengths and areas for improvement of the ecosystems are defined by the most satisfied and least satisfied characteristics from the perspective of entrepreneurs. Making possible to answer the problem of what are the current characteristics of the startup environment. Second, the KSF[7] are the indispensable characteristics felt by entrepreneurs, regardless of their presence in the current ecosystem, that if fulfilled then startups have the necessary requirements to a successful outcome. Answering the problem of what are the drivers to success for startups in the ecosystem.

[7] Key Success Factors

Research

Therefore, to try to understand the problem mentioned it is necessary to put some structure around it and make clear what are the questions that once answered can then help to characterize the Portuguese ecosystem. The characteristics of entrepreneurial ecosystems from around the world, are strongly linked to cultural norms and the history of their country (Feld, 2012; Hwang & Horowitt, 2012; Isenberg, 2011b). These characteristics allow us to hypothesize that there are "team-focus" ecosystems, those who believe that success depends heavily on the human capital of the startup (Mulcahy, 2013; Harroch, 2013; Torres, 2015; Frick, 2015; Hisrich & Jankowicz, 1990; Jo & Lee, 1996), and "idea-driven" ecosystems, those who believe that the product and its fit with the market are the key to startup success (Feinleib, 2012; Hart & Moore, 1990; Kaplan et al., 2009; Bhide, 1992). The main goal of this study is to make clear the relative importance of the "team" and "idea" in the success of a startup in Portugal and to place the national ecosystem between Germany and the USA, through the study of the KSF in these three ecosystems. The research questions are presented in figure 3. First, this study aims to assess the strengths and weaknesses in each of the ecosystems. As a strong entrepreneurial ecosystem only arises if satisfied or favorable the most important factors for startups (Isenberg, 2010). Secondly, we will research the KSF in each of the ecosystems, in search for the most important factors for startups. From here we aim to define the criteria used to assess people oriented startups and idea oriented startups, and in that way, understand if what drive success on the Portuguese ecosystem are the people or the business idea. By understanding the specificities of the Portuguese ecosystem, we can draw a comparison with the US and German ecosystems. Assessing from which ecosystem Portugal resembles more, making clear where we can look for road maps and valuable lessons to be followed.

Figure 3 - Definition of the Research Questions.

How favorable is the Portuguese ecosystem towards entrepreneurship? How does it compare with the favorability of other well established ecosystems?

- Research Question 1

Which are the KSF for the Portuguese entrepreneurial ecosystem? How do they compare with KSF for other well established ecosystems?

- Research Question 2

Is the Portuguese entrepreneurial ecosystem Team-Focus or Idea-Driven?

- Research Question 3

First, this study attempts to understand whether the Portuguese ecosystem is just a fad or can it provide the factors that allow for sustainable success in the long run. In order to understand that, this

study will assess how favorable the Portuguese ecosystem is within the variables that define a strong entrepreneurial ecosystem (Isenberg, 2010). The purpose of the first analysis is then the discovery of how the Portuguese ecosystem is sustaining entrepreneurial activity compared with other well established ecosystems. The second research question of the study is about, the crucial factors impacting on the success of startups. We want to find out what are the most important factors to achieve success for a startup in the Portuguese ecosystem and compare them with KSF of other well established ecosystems. After identifying the relevant factors in the ecosystem that drive success, we will divide them in order to categorize the Portuguese ecosystem in terms of its primary focus. Are Portuguese entrepreneurs primarily focusing on its teams before investing their time and effort to developed the product or service, or is it the other way around? We want to find, within the factors that were previously determined for the entrepreneurial ecosystem, if the Portuguese startups are mainly driven by people related factors or product/market related factors.

Methodology

The study is conducted under an analysis of online survey with the intent of assessing the favorability factors and KSF of different entrepreneurial ecosystems – Portugal, USA and Germany. Being the final goal the identification of the main driver of the ecosystem, in terms of the groups of factors classified as team or idea. It is proposed an assessment of the most pertinent factors affecting the Portuguese ecosystem by comparison with results from the USA and Germany, from Geibel & Manickam (2016), which contemplates different geographical locations, industries and size. To assess the Portuguese ecosystem though, data was collected on 92 entrepreneurs particularly working on information and communication technology and science-based technology startups. Entrepreneurs rated several factors regarding the environment in which they work. Firstly, in terms of satisfaction of several factors. The goal being to reach to a clear conclusion regarding how the ecosystem is currently performing in satisfying and growing its entrepreneurial capacity, finding how favorable is to conduct business in the ecosystem, from the perspective of entrepreneurs. Secondly, it was asked to be rated several factors in terms of importance to achieve success in the ecosystem. From here it was possible to find the KSF of the ecosystem, and by selecting the most appropriate ones, consider on the focus of startups in terms of people or product. To conclude, it is relevant to note on the intent of studying the favorability factors of the ecosystem along with KSF. If KSF identified by entrepreneurs are also the strengths of the ecosystem, which mean the most favorable factors in a specific environment, that ecosystem is in a good place to support and cultivate successful entrepreneurship. On the other hand, if some of the KSF are the least favorable factors for entrepreneurship, it must be given priority to the

development of that areas which entrepreneurs feel as most critical to their success. As success in a particular ecosystem can only be achieved if KSF are satisfied.

I.3. Academic and Managerial Relevance

This research arises from the necessity to further study how factors affecting startups are perceived across different geographical locations and cultures (Geibel & Manickam, 2016). Academically, this study shows to have relevance by allowing comparisons between ecosystems, it promotes the clear understanding of what set of factors impact the most on the success of a startup in different geographical locations. Being possible to compare the Portuguese startup ecosystem with leading startup hubs around the world, finding similarities and divergences to better understand ecosystems. From a managerial perspective, the research has a relevant impact on three distinct players: startups, support organizations and policymakers. By understanding what is most valued by entrepreneurs in their path to achieve success, startups can implement improvements in resource allocation. Furthermore, we can idealize the perfect environment to establish a venture that will succeed in the future if acknowledged what successful startups value the most and the level of satisfaction with specific environmental factors. Therefore, policymakers and managers of accelerators and incubators can then improve the conditions given to entrepreneurs by knowing their needs to achieve success. Policymakers around the world are recognizing the potential of high growth entrepreneurship and are interested in supporting it (Isenberg, 2010). Governments are beginning to recognize that entrepreneurship can boost their economies and best practices are emerging from surprising places. While there is no exact formula for creating an entrepreneurial economy (Isenberg, 2010), there are road maps and valuable lessons can be learned from what is successfully working in the Portuguese ecosystem. Leaders should leverage on this research to assess their entrepreneurial ecosystem and improve its potential. For that reason, the final goal of the study is to reach to a clear set of recommendations and suggestions that can support entrepreneurs and managers of support organizations to achieve better results in the Portuguese ecosystem.

II. LITERATURE REVIEW

We followed a thorough literature review on factors that are essential to a robust entrepreneurial ecosystem so we can have assured that those factors are drivers of success for startups. To initiate the approach to the topic it is presented a clear definition of entrepreneurial ecosystem and a set of factors that provide benefits and resources to entrepreneurs within the domains of the ecosystem (Isenberg, 2011a; Isenberg, 2011b). The relationships between those factors constitute the ecosystem, and the more satisfied the factors that constitute the ecosystem, the more favorable for entrepreneurship is the environment. Afterward, it is presented a comprehensive manner of defining KSF and the set of factors that study the domains in which the startup ecosystem is sustained which are grouped from the perspective of startups. The goal of this section is to present evidence for the factors chosen to study the main success drivers for startups – ecosystem focused on team vs. ecosystem focused on idea. Finally, it is shown a comparison of the USA and German ecosystems, so we can hypothesized their main focus of success and therefore, create a baseline for comparison for the Portuguese entrepreneurial ecosystem.

II.1. Entrepreneurial Ecosystem

One emerging approach explaining high-growth entrepreneurship is the entrepreneurial ecosystem (Isenberg, 2010; Zacharakis et al, 2003; Napier & Hansen, 2011; Malecki, 2011; Feld, 2012). Entrepreneurial ecosystem is understood as a conceptual umbrella for creating resilient economies based on entrepreneurial innovation, encompassing a variety of different perspectives. From the academic perspective (Acs, Autio, & Szerb, 2014; Feldman, Francis, & Bercovitz, 2005), policy perspective (Isenberg, 2010; World Economic Forum, 2013), and from popular business literature (Feld, 2012; Hwang & Horowitt, 2012), entrepreneurial ecosystems are similarly seen as the factors within a region that support the development and growth of innovative startups and encourage venture creation. Originally, Dubini (1989) argues that these environments are characterized by the presence of role models, a diverse economy, a strong business infrastructure, available investment capital, a supportive entrepreneurial culture, and public policies that incentivize venture creation. In the 90s, while studying the natural interactions between companies and their suppliers, customers and financiers, Moore (1993) introduced the term “ecosystem”, making clear that businesses do not develop in an isolated manner maintaining relevant interactions with their stakeholders. Moreover, in dynamic ecosystems, which suggests more active interactions between players, new ventures have

better opportunities to grow creating employment and significant wealth for its founders, the management team, investors, and employees compared with ventures created in less dynamic locations (Rosted, 2012). These individuals, by maintaining continuous involvement in the ecosystem reinvest the experience and wealth gained in their previous endeavours as mentors, angel investors, venture capitalists, board members, advisors or serial entrepreneurs becoming role models in the society (Napier & Hansen, 2011) (Appendix, figure 40 and 41). Interestingly, only a few entrepreneurial successes are needed to have major benefits in the ecosystem due to spillover effects (Isenberg, 2010; Isenberg 2011b). More recently, Isenberg (2010) argues that accessible local and international markets, available human capital and financing, mentorship and other support systems, supportive regulatory frameworks, and universities are the most important factors for creating an entrepreneurial ecosystem. Isenberg, with his approach on the entrepreneurial ecosystems develops what he calls an "entrepreneurship ecosystem strategy for economic development" (Isenberg, 2011a; Isenberg, 2011b). Defining an entrepreneurial ecosystem as a set of networked institutions with the objective of supporting the entrepreneur to go through all the stages of the process of venture development (Isenberg 2010; Isenberg 2011a; Isenberg 2011b). Isenberg claims that his approach establishes a fresh and cost-effective strategy for stimulating economic prosperity in the sense of successfully install cluster strategies and promote national competitiveness policies (Isenberg, 2011a; Isenberg, 2011b). An entrepreneurial ecosystem is then self-sustained as soon as its six domains become satisfactory for entrepreneurs (Isenberg, 2011a, Isenberg, 2011b). The six domains of the ecosystem contemplate an encouraging culture, empowering policies and leadership, suitable financial backing, quality of human capital, venture friendly markets and variety of institutional support (figure 4).

Figure 4 - Isenberg's Six Domains of an Entrepreneurship Ecosystem (Isenberg, 2011).

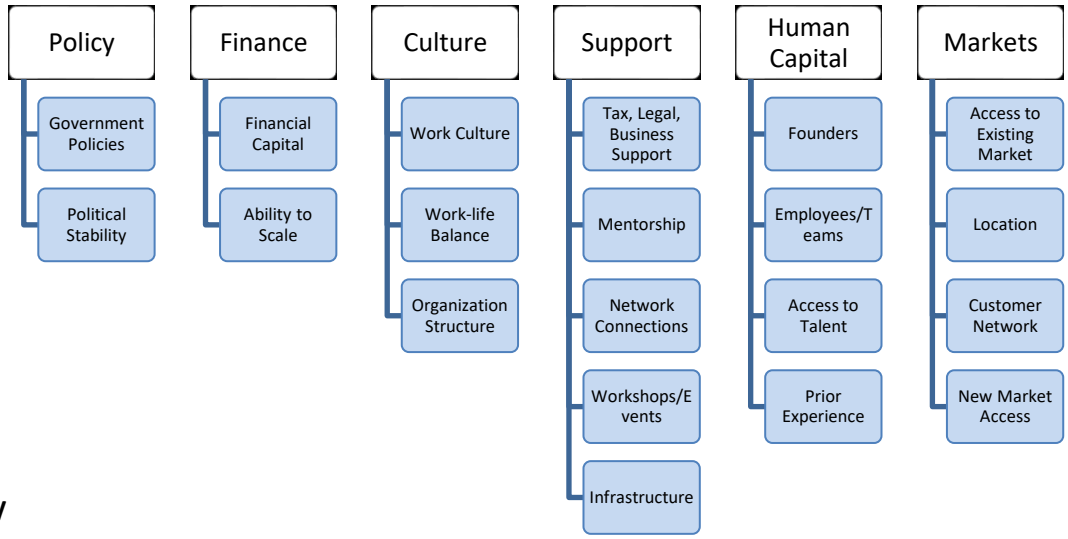
Included in these generic domains are numerous factors interacting in a highly complex and idiosyncratic way being very difficult to identify a generic causal path due to cause-effect relations of the elements. Therefore, policy-makers must intervene in a holistic manner, treating the entire ecosystem simultaneously as their efforts are mutually reinforcing. An interesting implication of the

ecosystem approach is that, each entrepreneurial ecosystem is unique and cannot be fully replicated. Each ecosystem develops under a unique set of conditions and circumstances, that is, a specific context that requires resources, time and effort to make the entrepreneurial ecosystem grow by experimentation and learning (Isenberg, 2010).

Assessing the Entrepreneurial Ecosystem

To address the ecosystem and to assess the six generic domains of the entrepreneurial ecosystem, factors in the environment that are crucial for a strong entrepreneurial ecosystem were selected (figure 5). The following section reviews existing theories about entrepreneurial ecosystems in order to detail the most commonly cited factors of entrepreneurial ecosystems and to discuss how they provide resources and benefits to entrepreneurs and new ventures.

Figure 5 - Factors used in the Research to Assess Entrepreneurial Ecosystems



Policy

Policy and governance comprehends government regulations and leadership which represent the laws and directives that create publicly funded support programs designed to encourage entrepreneurship through tax benefits, public investment funds or reductions in bureaucratic regulation (Huggins & Williams, 2011; Mason & Brown, 2013). This domain includes regulation and incentives to entrepreneurship, which comprise reducing legal barriers to startup creation, developing effective tax regimes, providing public funds to entrepreneurship, networking opportunities, or state-run programs that either support entrepreneurship through direct funding or removal of barriers to venture creation (Desrochers & Saulet, 2008; Isenberg, 2010).

Finance

Financing from institutional investors like venture capitalists, angel investors, or entrepreneur's own family and friends is a critical factor of an entrepreneurial economy (Malecki, 2011). Investment capital

for new ventures at seed and pre-seed stage is an essential catalyst for startup growth, as investors act as advisors helping startups to face the challenges of growth with the purpose of scale the business in the best and fastest way possible (van der Borgh, Cloodt, & Romme, 2012; Kenney & Patton, 2005; Malecki, 2009).

Culture

Cultural factors comprehend the societal norms toward entrepreneurship which can be fostered by success stories of entrepreneurship. Stories of successful local entrepreneurs inspire youth and potentiate new entrepreneurs, since the examples of successes when highlighted and celebrated can actually be viewed as root causes to the development of the ecosystem (Isenberg, 2010; Nelles et al., 2005; Feld, 2012). Entrepreneurship must be respected as a worthy occupation which legitimizes risk taking, experimentation and dealing with uncertainty (Aoyama, 2009; Feldman 2001; Julien 2007). For example, Aoyama (2009, p. 500) argues that regional cultures influence entrepreneurial activities by shaping acceptable entrepreneurial practices and norms into the work environment of new ventures.

Support

The support domain of the entrepreneurial ecosystem is assessed by the support services, such as, patent lawyers or accountancies (Kenney & Patton, 2005), along with incubation, acceleration, and coworking programs that provide office space for startups, advising and networking support (Totterman & Sten, 2005). The presence of social networks that connect entrepreneurs, advisors, investors, and workers allow free flow of knowledge and skills (Dubini, 1989; Malecki, 1997; Neck et al., 2004). Additionally, mentorship from local successful entrepreneurs and business people who provide advice for younger entrepreneurs, represent an important facilitator of entrepreneurial activity (Feld, 2012; Kenney & Patton, 2005; Bosma et al., 2012; Ozgen & Baron, 2007). Also, availability of sufficient office space, telecommunication facilities, and transportation infrastructure enable venture creation and growth (Audretsch et al., 2011; Mack & Rey, 2014).

Human Capital

There must be present a proper talent pool of skilled and unskilled workers willing to work at startups (Arruda, Nogueira, & Costa, 2014; Audretsch et al., 2011; Bahrami & Evans, 1995; Harrison & Leitch 2010). Besides that, presence of entrepreneurs who have experience in creating new ventures, hiring people and that have specific technical skills, as well as, experience as board members and advisers (Isenberg, 2010; Audretsch, et al., 2011; Qian, Acs, & Stough, 2013), are essential factors for success in entrepreneurial economies. Universities and other higher education institutions play a key role at develop new technologies that create entrepreneurial opportunities (Lawton Smith et al., 2014), as well as, produce new knowledge spillovers into existing startups (Krichhoff et al., 2007; Shane, 2004). In addition, startups are able to access the knowledge of universities through hiring graduates.

Universities help develop the human capital of a region by fostering entrepreneurial mindsets in students, encouraging them either to start new ventures or to work in them (Wolfe, 2005).

Markets

Availability of a strong local market and presence of local customers with specialized needs, creates opportunities for new ventures (Spilling, 1996). A curious community willing to be early adopters serving as proof-of-concept is essential to install and deploy new ventures in the ecosystem. This gives startups a platform to make early sales and build up their capabilities for future expansion (Feldman, 2001). Access to the existing market, along with unconstrained access to global markets is essential to the development of an entrepreneurial ecosystem (Spilling, 1996).

The entrepreneurial ecosystem approach shows a clear emphasis on the environment and the conditions required to create startups and to support entrepreneurs (Isenberg, 2011a; Isenberg, 2011b). Using the framework on figure 5 with specific environmental factors that sustain a strong entrepreneurial ecosystem and consequently, lead venture success, it is possible to identify the strengths and areas for improvement in the different ecosystems. Therefore, by measuring the relative satisfaction by entrepreneurs on specific factors aimed at assessing the entrepreneurial ecosystem domains, we can at some extend, reach to an understanding of which is more favorable to the entrepreneurial ecosystem in Portugal and which is not. If the least favorable areas of the Portuguese environments are the most valuable aspects for entrepreneurs to conduct their business, then there is an urge to improve that aspect.

II.2. Key Success Factors on the Entrepreneurial Ecosystem

The set of factors that assess the domains which constitute the startup ecosystem are grouped from the perspective of startups to make possible a clear understanding of the factors that are relevant to success in the different ecosystems. First, it is important to detailed on what Key Success Factors (KSF) mean as it potentiates the understanding of the most indispensable factors on the entrepreneurial ecosystem.

Key Success Factors

KSF has been widely diffused and applied into the business environment as it shows a very pragmatic approach to be led on (Rockart, 1982). The concept of concentrating efforts and resources on the few things that are most important for organizations is not new and has been used for decades, even

centuries (Forster & Rockart, 1989). Largely disseminated by Rockart (1979) but originally proposed by Daniel (1961), the method is being implemented in a variety of fields of study to determine the most critical factors influencing enterprise success (Rockart, 1982). Key success factors are then defined by "the limited number of factors in which results, if satisfactory, will ensure successful competitive performance for the organization" (Rockart, 1982). Likewise, Leidecker and Bruno (1984) have defined KSF as "characteristics, conditions or variables that, when properly sustained, maintained or managed, can have a significant impact on the success of a firm competing in particular industry." Past research has identified a wide range of possible variables that have substantial impact on the success of a venture and which investors use when evaluating investments opportunities (Maxwell et al., 2011). Nevertheless, it is necessary to overcome the bases of intuition that business venture still has associated in regards to identify forthcoming potential (MacMillan, Zemann, & Subbanarasimha, 1987), and that is why the purpose of the study is to reach to the specific set of factors that have the major impact on the success of a startup among the possible success factors identified in the literature. As success depends a lot on the perspective of who defines it, intrinsic values and motivations impact on the way entrepreneurs envision as success. However, from the discussions with entrepreneurs in this research, one similarity seems to exist. The determination to conduct business over time, sustained in growth in terms of team structure and startup relevance and good future perspectives for the startup in terms of sales volume and financing. In that sense, it is important to define the factors that have origin on the dimensions of the entrepreneurial ecosystem and in this way, ensure that they fit with the perception of success in the ecosystems under scrutiny.

Factors Impacting on Startups

As we want to identify the most relevant factors for entrepreneurs from the factors used to assess the entrepreneurial ecosystem, possible success factors are grouped into three categories from the perspective of startups: internal factors, external factors and support factors. In addition to the factors used to assess the entrepreneurial ecosystem (previously detailed on II.1.), we must add to the research the factors: product, pitch, competitors, marketing strategy and exit strategy, as they are factors related with the business idea, and important factors to conduct the study on the main drivers for success in terms of team related factors vs. product related factors. Categories from the perspective of startups and respective factors used to identify KSF are presented on figure 6, 7 and 8.

Internal Factors

Variables within the startup that can be manipulated and over which founders have a great degree of control.

Figure 6 - Internal Success Factors

• Employees/Team	• Exit Strategy	• Ability to Scale
• Work culture	• Marketing Strategy	• Company Pitch
• Co-Founders	• Customer Network	• Work-Life Balance
• Organization Structure	• Product	

External Factors

External forces which result of the environment in which the startup is placed and over which founders have little or no control.

Figure 7 - External Success Factors

• Government Policies	• Access to Talent	• Competitors
• Political Stability	• New Market Access	• Prior Experience
• Location	• Access to existing Market	

Support Factors

Factors which are specific of entrepreneurial support programs, such as, incubator or accelerator programs.

Figure 8 - Support Factors

• Mentorship	• Tax, Legal, Business, etc. support
• Expanding Network Connections	• Infrastructure
• Financial Funding	• Workshop/Events

By rating the relative importance of factors in the three different categories is possible to reach to a clear understanding of what factors play the most important role in determining success for startups in the three different ecosystems.

II.3. Comparison Between Entrepreneurial Ecosystems of the USA and Germany

In this section, the different factors that affect startup success on the ecosystems of Germany and the USA are analyzed and compared. The USA and German ecosystems are used to comparison against the Portuguese environment because they are leading examples of entrepreneurship and economic power, that shape world societies. The 25 possible success factors were grouped into three categories and their average scores of satisfaction of factors and importance of different factors in the three categories are shown, computed on a scale from 1 to 10 (Geibel & Manickam, 2016).

Internal Factors

Figure 9 - Detailed Score of Favorability of Internal Factors (Geibel & Manickam, 2016).

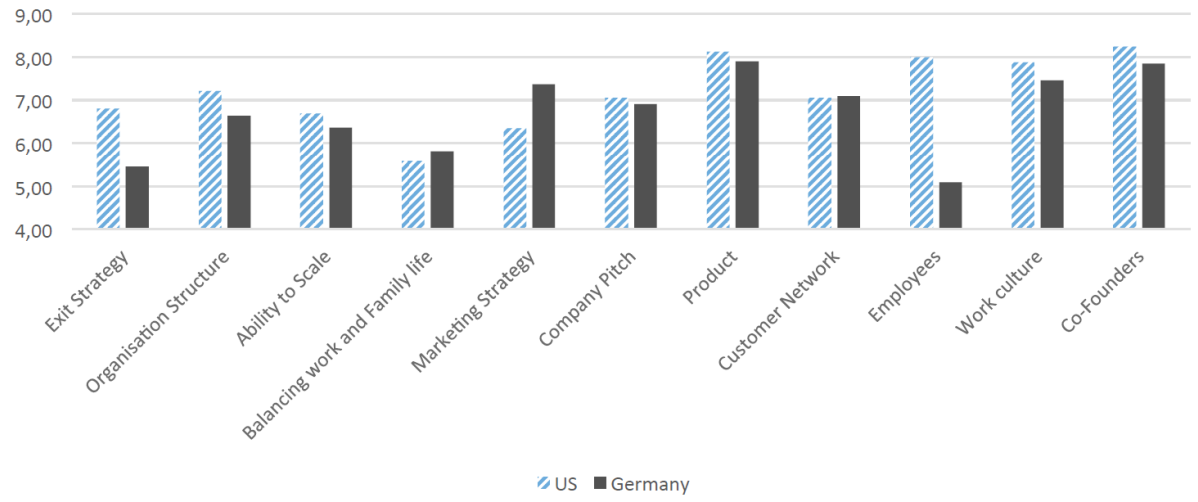
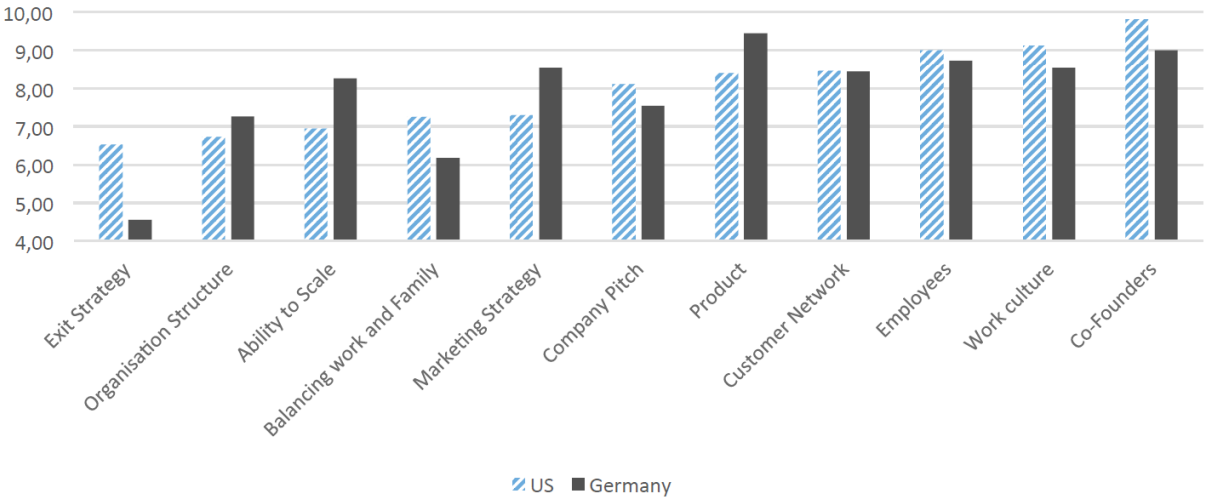


Figure 10 - Detailed Score of Importance of Internal Factors (Geibel & Manickam, 2016).



External Factors

Figure 11 - Detailed Score of Favorability of External Factors (Geibel & Manickam, 2016).

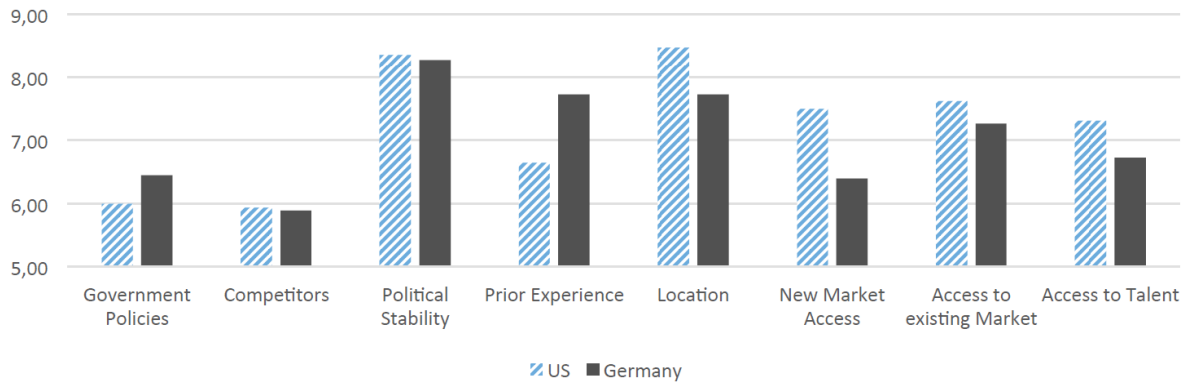
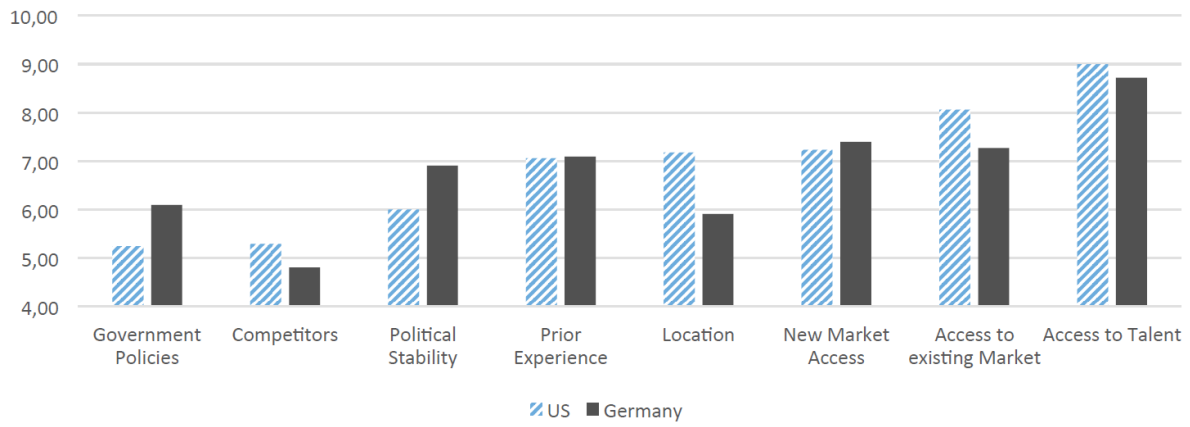


Figure 12 - Detailed Score of Importance of External Factors (Geibel & Manickam, 2016).



Support Factors

Figure 13 -Detailed Score of Favorability of Support Factors (Geibel & Manickam, 2016).

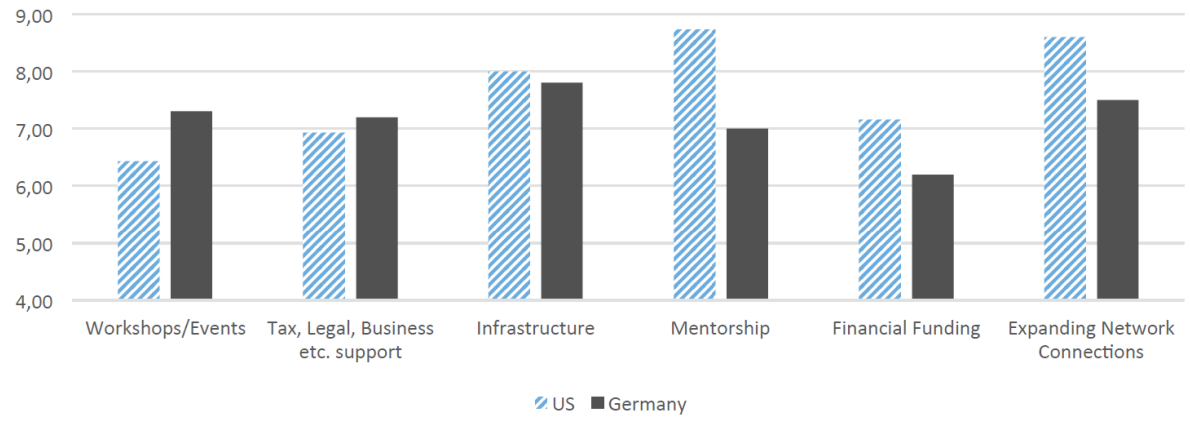
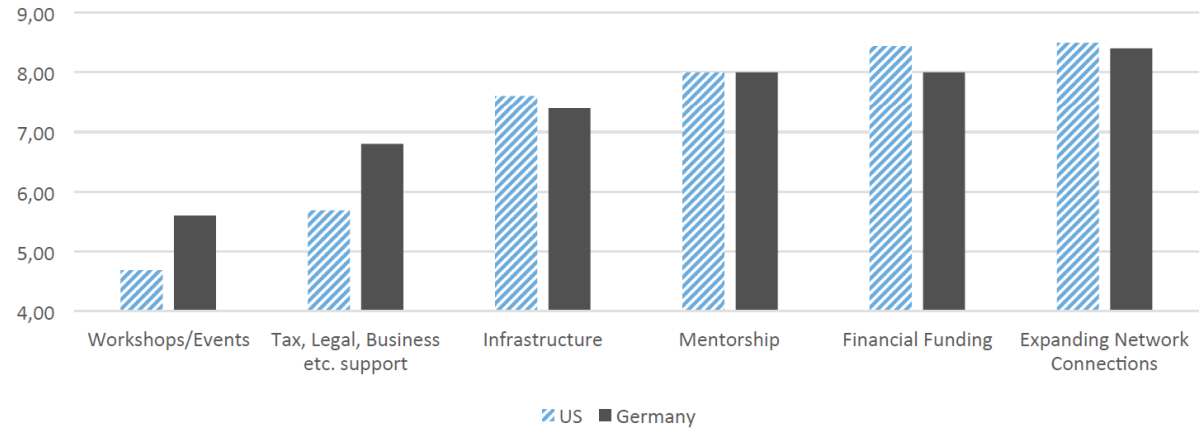


Figure 14-Detailed Score of Importance of Support Factors (Geibel & Manickam, 2016).



Findings on the research of Geibel and Manickam (2016) show that, both USA and German entrepreneurs give similar importance on each of the three categories (internal, external and support), revealing some degree of consistency between the two ecosystems in terms of development level of

the entrepreneurial economy. However, one important difference arises. The German entrepreneurial ecosystem need to focus on improving how well they are able to satisfy startup needs, particularly when it comes to support from incubators or accelerators (Geibel & Manickam, 2016). In Germany, the support of incubators or accelerators is viewed as much more important on the success of startups rather than for the American startups. Furthermore, from the study it was evidenced that the USA has developed a very encouraging ecosystem for entrepreneurship highlighting its engaged network of mentors, the strong international talent pool of the country, easier access to markets and to financing. Founding teams are very advanced and early customers are willing to engage on innovation (Geibel & Manickam, 2016). All those are essential factors for creating a vibrant entrepreneurial ecosystem (Isenberg, 2010), which are lacking in Germany, particularly a strong international employee base and work culture (Geibel & Manickam, 2016).

The noteworthy conclusion of the research and the biggest divergence between the two ecosystems is that North-American entrepreneurs distinguish as the most important factors for their success, the co-founders, the employees and the work culture – being more focus on the team, emphasizing the care for the people at startups. While German entrepreneurs identify as KSF, the product, the marketing strategy and their ability to scale the business – being driven by the product and the market. The researchers show that American startups are people oriented placing greater importance on the team and on building a strong core structure in the startup before going on developing other competences (Geibel & Manickam, 2016), which is proved by the fact work culture is more important than product, company pitch or marketing strategy.

II.4. Team-focus or Idea-driven Entrepreneurial Ecosystems

Investors always look for team, product and market while assessing an investment opportunity (Maxwell et al., 2011; Hisrich & Jankowicz 1990), therefore those are the fields in which startups place most of their focus. However, if we group specific factors that assess each of those main drivers, startups tend to place more effort on a particular set of factors than on the other. Thus, the final goal of this research is to clearly identify if the primary drivers for success for the Portuguese startup ecosystem are team related factors or product/market related factors. Factors used to assess the domains of the entrepreneurial ecosystem were grouped in two blocks according with their origin (team or product/market). Other factors of this research (product, pitch, competitors and marketing strategy) that were not used to assess ecosystem domains but that relate in a significant manner with

the business idea and markets were used to complement idea-driven factors. In addition, from the findings of Geibel and Manickam (2016) for the main success drivers on the ecosystems of the USA and Germany, ecosystems driven by teams consider their founders, employees, the work culture and access to talent the most important factors to success, while ecosystems driven by idea consider the product, marketing strategy and their ability to scale the business as most critical to success (Geibel & Manickam, 2016). Thus, from the most recent literature concerning venture investment and entrepreneurial environment assessing, the drivers to success can be divided into two distinguishable schools of thought: team focus – giving the importance to achieve success to the team and its background and experience (Mulcahy, 2013; Harroch, 2013; Torres, 2015; Frick, 2015; Hisrich & Jankowicz, 1990; Jo & Lee, 1996), and idea driven – startup success being driven by the focus on the product and marketing efforts to fit the product into markets (Feinleib, 2012; Hart & Moore, 1990; Kaplan et al., 2009; Bhide, 1992)

Team Focus

From the factors used in this research to assess the entrepreneurial ecosystem, the set of internal and external factors that are undoubtedly related with the people at the startup are the following:

Figure 15 – Factors Assessing Team-focus.

Team-Focus						
Employees/ Team	Co-founders	Work Culture	Organization Structure	Work-life Balance	Access to Talent	Prior Experience

When people-related factors are recognized as the core source of success for startups, we can assume that the ecosystem is team-focus. It is revealed when the right team, even with a non-suitable plan of action, can accomplish great things. This is the reason why is commonly stated that venture capitalists invest in people, not in startups (Mulcahy, 2013). Venture capitalists consider to be one of the most important factors in an investment to have a good team in place (Harroch, 2013). While initial business ideas often pivot primarily throughout the formation stage of idealization and conceptualization right up to the validation stage, the team is frequently an unchanging variable at least on early stage startups (Torres, 2015). Especially in regards to technological startups where entrepreneurs are encouraged to adapt freely and experiment so they can adjust their business concept, the team is the only stable element to rely on (Frick, 2015). Additionally, background and relevant experience of the team, particularly experience in the same industry, are functions of potential success (Hisrich & Jankowicz,

1990). Teams with business education and previous experience tend to get higher external evaluations for their startups (Jo & Lee, 1996). Thus, a legitimate strong team comforts investors and is an indicator for future success. Interestingly, founders with strong technical education if allied to strong management skills and a clear goal orientation are certain to get the attention of investors and are likely to accomplish success (Hisrich & Jankowicz, 1990).

Idea Driven

Alternatively, the ecosystem can be driven by product/market-related factors being considered idea-driven. Thus, to find if it is the quest for product/market fit what drives Portuguese startups, figure 16 shows the factors that measure this hypothesis by being surely related with the business instead of people.

Figure 16 – Factors Assessing Idea-driven.

Idea-Driven							
Product	Marketing Strategy	Abilitiy to Scale	Company Pitch	Customer Network	Access to Existing Markets	New Market Access	Competirors

Idea-driven is the notion of product and market related factors as the most important factors for startups. In other words, not only the importance of the product or business idea for itself but its concretization in the real world. The way the business model is put into practice and the marketing plan which intends to explore the opportunity of having a product that people actually want to spend money on – the product/market fit, as the most important driver (Feinleib, 2012), instead of the people that constitutes the startup. In fact, several authors suggest that the most important aspect of a startup is the non-human factor (Hart & Moore, 1990), and that investors, while making an investment in a startup, should pay more attention to the business than to the team (Kaplan et al., 2009). The focus should be on the “horse” instead of the “jockey” (Kaplan et al., 2009). Since a small number of startups start with a truly original business concept, the majority tend to replicate experienced strategies, executing them in similar but superior ways in order to achieve competitive advantage (Bhide, 1992). Therefore, a solid business plan combined with a good execution and a clear focus on product to market fit, reassures investors about the competence of the team and can be a positive sign for success.

III. METHODOLOGY AND DATA COLLECTION

In the first part was shown a clear identification and mapping of the most cited success factors identified in the literature. Those factors are used to analyze and compare different ecosystems and to get an answer to the questions in the research. Below follows how that answers can be discovered.

III.1. Research Methodology

Figure 17 - Environmental Success Factors of the Research

Environmental Success Factors:

- Employees/Team
- Work culture
- Co-founders
- Organization Structure
- Exit Strategy
- Marketing Strategy
- Customer Network
- Product
- Ability to Scale
- Company Pitch
- Work-Life Balance
- Government Policies
- Political Stability
- Location
- Access to Talent
- New Market Access
- Access to existing Market
- Competitors
- Prior Experience
- Mentorship
- Expanding Network Connections
- Financial Funding
- Tax, Legal, Business, etc support
- Infrastructure
- Workshop/Events

This study uses online survey, to reach a scoring mechanism that allow for easy comparison of relevant key environmental factors that have influence on the success of a startup (figure 17). These factors are assessed from the perspective of entrepreneurs with the purpose of identifying a common pattern between entrepreneurial ecosystems from around the world. Of importance are the relative score of those factors against each other, that is why it is used the average of results for each factor which are aggregated, to show a clear answer to the three question the study proposes to answer. The study compares the relative scores of the various environmental success factors using the results of Geibel and Manickam (2016) for Germany and USA as a benchmark in order to determine what drive Portuguese startups and how is the ecosystem supporting their performance. The purpose of using these two ecosystems in the comparison (US and Germany), is to understand how is the Portuguese ecosystem for startups by comparing it with international hubs for innovation and business development. To conduct this comparison, we should use a similar method of analysis, and comprehensively, analyzing the same factors that Geibel and Manickam (2016) investigated. In that sense, the scores of the different success factors, within each of the groups of factors, are averaged to give an overall score for each category of the startup ecosystem.

Measures

Portuguese entrepreneurs that participated at Web Summit 2016 were asked to score the different success factors. These entrepreneurs came from information and communication technology startups and science-based technology startups that were created over the last few years. In terms of their

importance for success, each of the 25 success factors in the study used a scale from 1 to 7, being 1 the least critical to achieve success and 7 the most critical to success. Then, entrepreneurs were asked to classify how satisfied they were with each factor. The satisfaction level is used to measure how favorable certain factors are for entrepreneurs or, how accessible they are perceived to be. The satisfaction with specific factors provides proof for the pulse of the entrepreneurial ecosystem in specific domains (Isenberg, 2010). Satisfaction questions ranged from 1 to 7, with 1 being not satisfied and 7 being completely satisfied. From the results, scores for each success factor were then averaged to obtain a composite score for each of them. Although scores do not have a meaning for themselves, what is important is their relatively regards each other. The main goal being the relative scores of the success factors in Portugal compared with results for the USA and for Germany, with the purpose of understanding with which of the ecosystems is Portugal closer to. Identifying similarities with the USA and Germany, recognizing competitive advantages and opportunities for improvement for the Portuguese ecosystem.

III.2. Data Collection and Sample

Data Collection

Data was collected through an online survey of Portuguese startups that participated in the international conference of Web Summit Lisbon 2016. These startups range from early stage startups – the ALPHA category of startups participating at Web Summit, to startups already behind its initial stage – BETA. 238 technology startups were reached mainly by email with the intent to portrait the most comprehensive picture of the Portuguese ecosystem. Furthermore, participation in programs of incubators or accelerators was assessed to also get a good perspective of the support institutions in the country from the standpoint of entrepreneurs. As result, most of entrepreneurs in the sample (58.7%) have been part of Startup Lisboa, Startup Braga, EDP Starter[8], or went through Building Global Innovators program or similar.

Sample Profile

We received 92 responses from entrepreneurs on the Portuguese ecosystem. As 238 surveys were sent by email to entrepreneurs from different startups, it can occur a constrain in the research related

[8] EDP Starter is an incubation program for startups in the energy sector and which is part of EDP Innovation.

with non-response bias as response rate stays at 38.7%. Furthermore, data was collected at the higher level of the startup, in fact, 63% of the collected results came from founders of startups (figure 18) and 44.6% came from startups' CEOs (figure 19). A pertinent characteristic about the sample is that 80% of entrepreneurs already had previous experience before joining the startup, from which 46% had it on a different sector or industry (figure 20). Regarding nationality, 88 entrepreneurs in the sample (95.7%) are Portuguese, with 4 non-Portuguese entrepreneurs from UK, USA, Italy and Australia. Concerning background, on the data that was collected is observed that, 25% of enquiries have background on IT, 19.6% came from some other area of Engineering and 17.4% came from Business. (For more information on entrepreneurs' background, please see Appendix figure 44).

Figure 18 - Founders of Startups in the Sample.

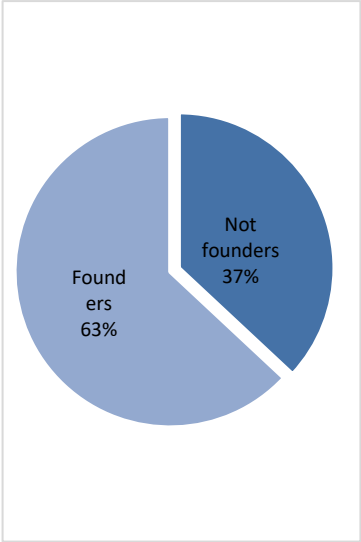


Figure 19 - Entrepreneurs' Position in the Startup.

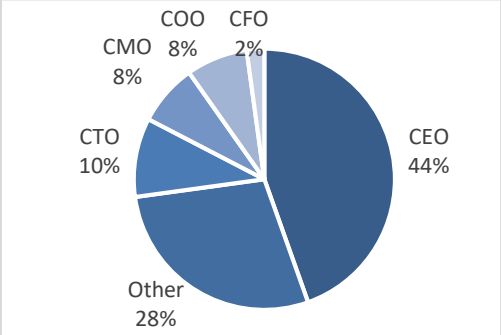
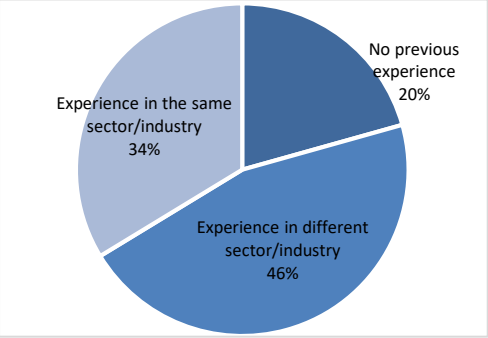
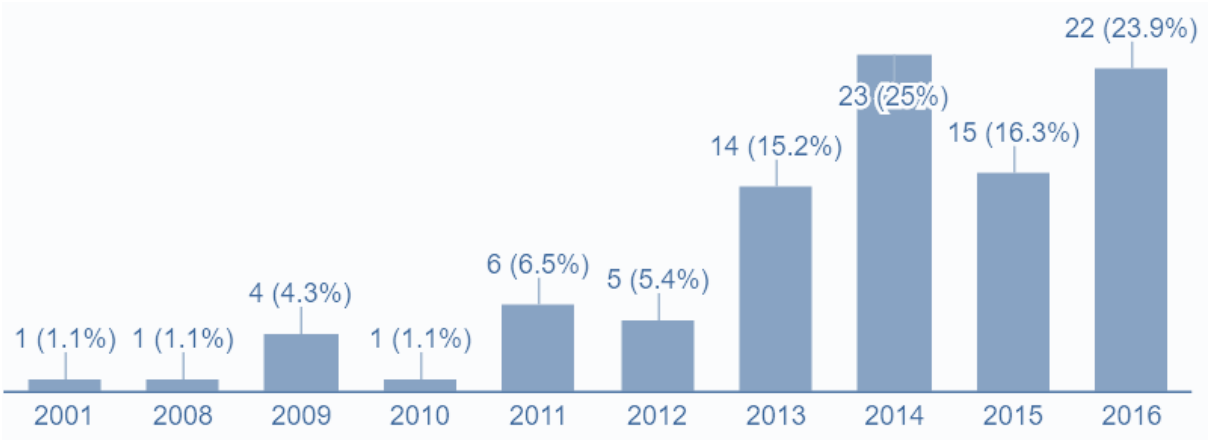


Figure 20 - Previous Experience of Entrepreneurs in the Sample.



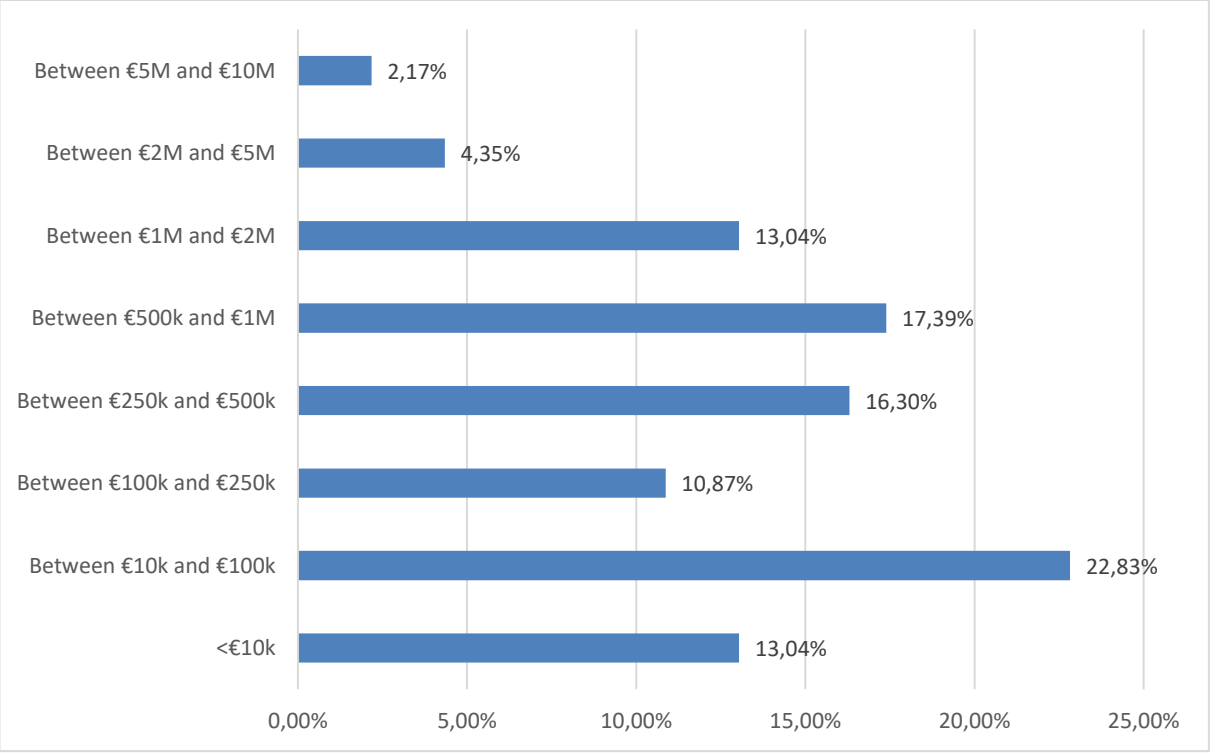
A diverse range of industries and startup sizes are represented to get a comprehensive perspective of the major startups on the Portuguese entrepreneurial ecosystem. As data was collected at a technology conference event, most startups in the data (51.1%) offer software as a service. 10.9% operates on analytics, 13% of startups work on the health sector, 7.6% on the education sector, 10.9% on e-commerce and 5.4% offers consumer goods. (For additional information on which sectors startups operate, please see Appendix figure 43). Moreover, figure 21 shows the founding year of startups in the sample from which makes possible to conclude that 65.2% of startups were founded after 2014. Serving as an indicator that most of startups in the sample are in an early stage of development.

Figure 21 - Founding Year of Startups in the Sample.



Lastly, from the sample is shown that not only most of startups in the data collected were created over the last few years, as the majority (53.3%) got over 250,000 Euros in financial funding, as it is possible to conclude from the graph on figure 22. Roughly 20% of startups received more than 1 million Euros and 13% less than 10 thousand Euros. The capital these startups raised came, in equal terms, from venture capital (29.3%) and angel investors (29.3%) but also from private equity (16.3%) and in form of investment from accelerators (10.9%). (Detailed information on capital sources of startups in the data sample can be found in Appendix figure 45).

Figure 22 - Capital Raised by Startups in the Sample.



IV. RESULTS' ANALYSIS

Besides providing an overview of the context to understand how Portuguese entrepreneurs ponder on their success. The research potentiates understanding of the Portuguese ecosystem by offering a comparison with relevant geographic locations – USA and Germany. Following, the results of the research are presented and compared with relative scores of various success factors between German and American startups retrieved from Geibel & Manickam (2016). In that sense, first it is analyzed the level of favorability of ecosystems towards entrepreneurship. Followed by an analysis of KSF that leads to the validation of the groups of factors concerning drivers to success. The final goal is to assess if essential factors are being satisfied in the ecosystem and in that way, assess if the ecosystem provides favorable condition for startups to achieve success.

Results

Average scores for each factor of the Portuguese entrepreneurial ecosystem can be found on figure 23 and 24, aggregated by the several categories examined. On figure 23, sample outcomes in terms of favorability of factors for the Portuguese ecosystem are shown to identify which factors are used to assess each of the several domains of the ecosystem. On figure 24 is presented the results from the data collected in terms of relative success factors from which will arise the assessment of the main drivers to success.

Figure 23 - Portuguese Entrepreneurial Ecosystem Satisfaction Assessment

ECOSYSTEM DOMAINS		FACTORS ASSESSING DOMAINS	RELATIVE SATISFACTION OF FACTORS	STANDARD DEVIATION
POLICY	4,66	Government Policies	4,58	1,2179
		Political Stability	4,75	1,0740
FINANCE	5,09	Financial Funding	4,64	1,4321
		Ability to Scale	5,54	1,2372
CULTURE	5,44	Work Culture	5,85	1,0208
		Work-Life Balance	5,12	1,2410
		Organization Structure	5,35	1,2108
SUPPORT	4,83	Tax Legal Business etc support	4,43	1,5102
		Mentorship	4,91	1,5385
		Expanding Network	5,11	1,3974
		Workshop/Events	4,80	1,4320
		Infrastructure	4,89	1,0467
HUMAN CAPITAL	5,71	Founders	6,07	1,0815
		Employees/Team	6,15	1,0101
		Prior Experience	5,33	1,2520
		Access to Talent	5,28	1,1603
MARKETS	5,18	Access to Existing Market	5,14	1,2561
		Location	5,10	1,1546
		Customer Network	5,28	1,2098
		Access to New Markets	5,18	1,2565

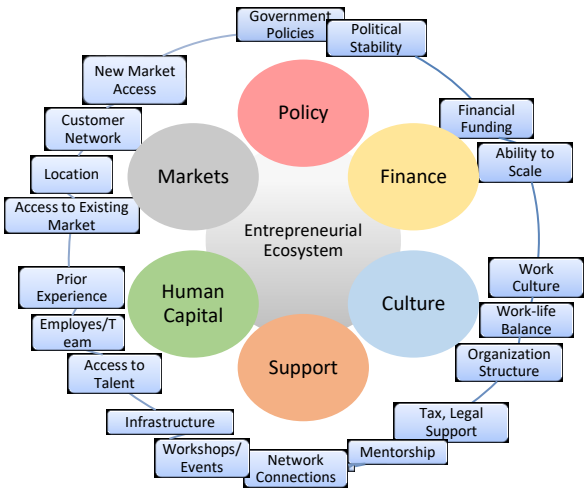
Figure 24 - Assessment of the Importance of Success Factors

RELATIVE IMPORTANCE OF FACTORS	AVERAGE SCORE	ST. D.	AGGREGATED IMPORTANCE OF FACTORS	AVERAGE SCORE
Employees/Team	6,83	0,7164	INTERNAL FACTORS	5,71
Work Culture	6,05	0,9597		
Co-Founders	6,14	1,1285		
Organization Structure	5,45	1,2101		
Exit Strategy	4,09	1,4570		
Marketing Strategy	5,79	1,0687		
Customer Network	5,91	1,0389		
Product	6,29	0,8410		
Ability to Scale	5,95	1,1360		
Company Pitch	5,35	1,1650		
Work-Life Balance	5,01	1,5638		
Government Policies	4,85	1,4060	EXTERNAL FACTORS	5,30
Political Stability	4,91	1,4115		
Location	4,57	1,2363		
Access to Talent	5,97	0,9261		
Access to New Markets	6,04	0,9079		
Access to Existing Market	5,90	0,9448		
Competitors	5,09	1,1947		
Prior Experience	5,10	1,3678		
Mentorship	5,34	1,1636	SUPPORT FACTORS	5,27
Expanding Network	5,79	0,9840		
Financial Funding	5,77	1,1897		
Tax Legal Business etc support	5,22	1,0817		
Infrastructure	4,93	1,2407		
Workshop/Events	4,54	1,3546		

IV.1. Entrepreneurial Ecosystem Assessment

The first analysis of results concerns the assessment of entrepreneurial ecosystems. The goal is to evaluate entrepreneurs' satisfaction with the ecosystem in its six domains (Isenberg, 2010) which are assessed by specific factors from the perspective of entrepreneurs (figure 25).

Figure 25 - Model of an Entrepreneurial Ecosystem Assessed by Specific Factors

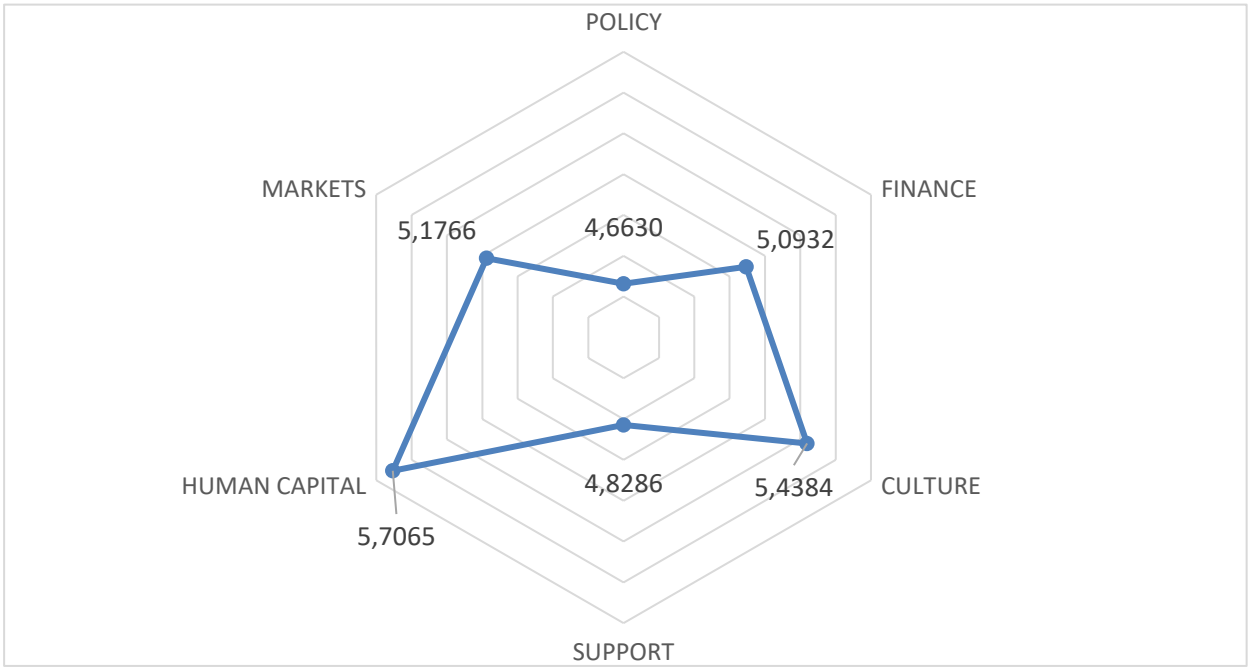


Subsequently, results are shown on the specific factors assessing the ecosystem and analyzed the most favorable and least favorable domains in the Portuguese ecosystem. Lastly, it is presented a comparison of favorability of factors between Portugal, USA and Germany.

Portuguese Entrepreneurial Ecosystem Favorability Assessment

To evaluate at what extent is the ecosystem favorable to entrepreneurship, we analyzed answers ranking the satisfaction on each factor. In a scale from 1 to 7, it is possible to rank each domain according to startups. (figure 26).

Figure 26 - Portuguese Entrepreneurial Ecosystem Domains' Favorability Results

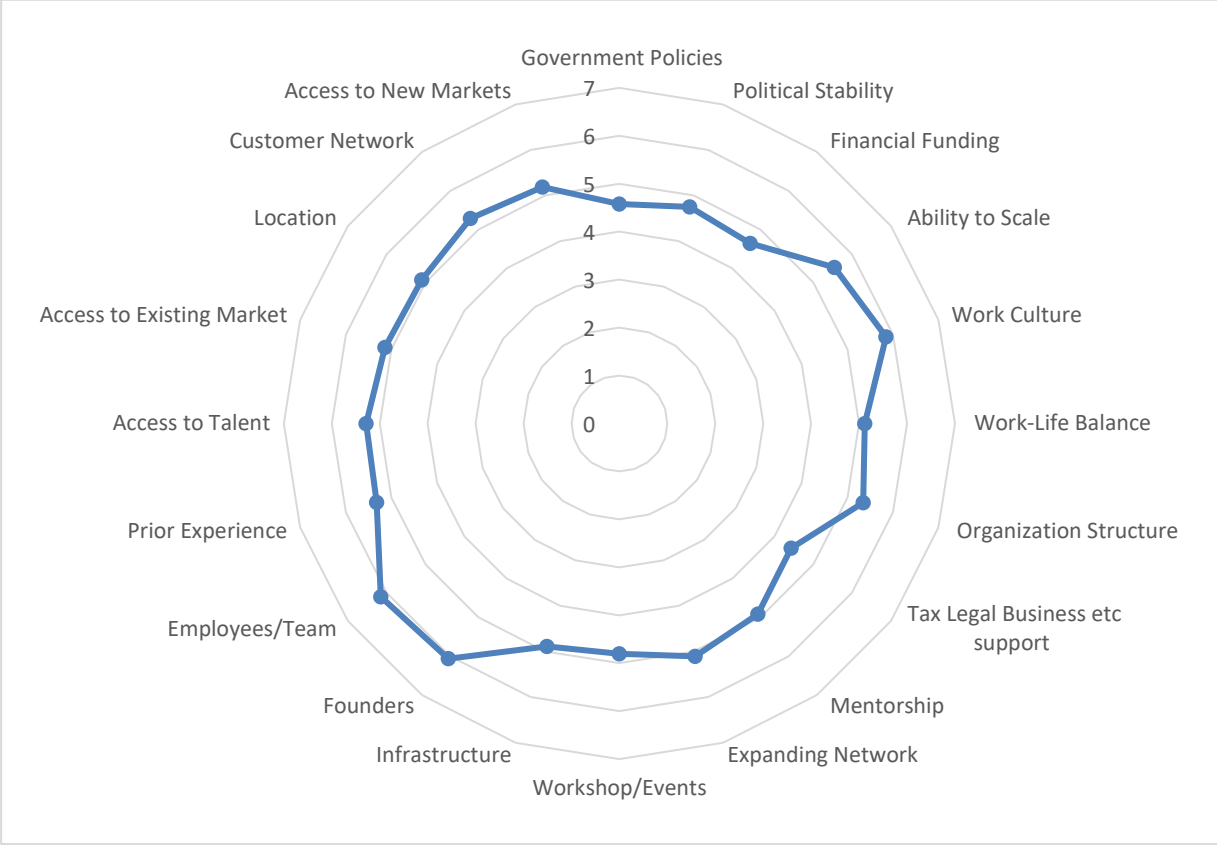


The Portuguese ecosystem for startups is shown to be particularly favorable regarding the domains that capture human talent in the ecosystem and the cultural norms towards entrepreneurship. While the least favorable domains for startups are related with political factors and non-governmental support from institutions and services.

From the results in each of the factors used to assess the Portuguese ecosystem (figure 27), it is possible to conclude that the most favorable domains for the entrepreneurial activity in Portugal are driven by the presence of talented human capital in the teams that constitute startups – not only in its employees but in its founders. Combined with an established startup culture that fosters motivation and happiness, but interestingly, not so much in terms of work-life balance. Contrarily, the least favorable domains for entrepreneurship are driven by deficiency in government policies and lack of

tax advice and legal support services mainly in form of workshop programs. Moreover, financial funding and political stability are also worth mentioning due to their low score in terms of entrepreneurs' satisfaction.

Figure 27 - Portuguese Entrepreneurial Ecosystem Factors' Favorability Results.



Human capital which is defined by ecosystem's talent pool and educational institutions, is the most favorable entrepreneurship domain in the Portuguese ecosystem. With an average value of 5.71 while average favorability for domains is 5.15. This domain is assessed by overall satisfaction with startup team, relevance of prior experience and with startup access to talent. Indicating some degree of favorability in the ecosystem in terms of accessing and retaining relevant talent in startups. The abundancy of talented people in the ecosystem is making it relatively affordable for startups, which displays the first competitive advantage of the ecosystem. However, satisfaction in accessing the potentially affordable talent pool, is armed by the strong global competition, what encourages talented entrepreneurs to go abroad in search for more favorable ecosystems. Additionally, the cultural domain is also shown to be above average (5.44). The societal norms of the country and its cases of success seem to benefit entrepreneurship which reflect on work culture. By promoting an inclusive openness feeling, it improves work environment and sets the ambition for the teams and for future hires. Having a direct impact on general satisfaction and the ability to recruit the best talent.

On the other hand, policy and support domains are the least favorable for entrepreneurs. With an average value of factors of 4.66 and 4.83, respectively, they are the least satisfied domains. For that reason, the opportunities for improvement. Concerning the policy domain, entrepreneurs do not perceive government policies towards entrepreneurship satisfactory and should be improved. Also, political instability experienced in Portugal over a year ago, was capture by the research, pressing down the policy domain which can be explain by the recent downturn and the Troika presence in Portugal. Regarding support domain, initiatives supporting entrepreneurship from governmental and non-governmental institutions must be largely expanded. This domain, that comprises assistance from formal organizations such as incubators and accelerators must develop, even further, their activities towards the advancement of entrepreneurship, mainly in terms of workshops on business development and how to deal with bureaucracy.

Entrepreneurial Ecosystem Comparison

By comparing factors favorable to entrepreneurship within ecosystems from around the world, we can evaluate how is the ecosystem promoting startup activity while identifying opportunities for improvement. By looking at the comparison between the US and German results in part II.3. for the satisfaction with factors used to assess the entrepreneurial ecosystem, results for factor' favorability were ranked from the most favorable to the least favorable to entrepreneurship. For further scrutiny, a color code was used to identify which domain each factor is measuring (figure 28). From the opinion of entrepreneurs in the three ecosystems targeted to comparison, it seems there are discrepancies in terms of the best advantages of those ecosystems. As it was previously noted, talent in startups and cultural norms represent the best advantage for the Portuguese ecosystem. In the USA, location, mentorship and expanding network connections within formal support organizations, are the most favorable factors for entrepreneurship. As for the German ecosystem, the most favorable factors for developing a startup are the infrastructure support, political stability and founders of startups, but curiously, not its employees. While in Portugal and in USA, startup teams and founders are considered to be satisfactory, in Germany, the team is the last factor to be considered as favorable to entrepreneurship. Poor access to talent has a negative impact on how satisfied entrepreneurs are with their employees. However, prior experience in German startups may be considered favorable, that is assumed to be true only for startup founders.

Figure 28-Factors' Favorability Ranking of Different Ecosystems.

	PORTUGAL	USA	GERMANY
1	Employees/Team	Mentorship	Political Stability
2	Founders	Expanding Network	Founders
3	Work Culture	Location	Infrastructure
4	Ability to Scale	Political Stability	Prior Experience
5	Organization Structure	Founders	Location
6	Prior Experience	Employees/Team	Work Culture
7	Access to Talent	Infrastructure	Expanding Network
8	Customer Network	Work Culture	Workshop/Events
9	Access to New Markets	Access to Existing Market	Access to Existing Market
10	Access to Existing Market	Access to New Markets	Tax Legal Business Supp.
11	Work-Life Balance	Access to Talent	Customer Network
12	Expanding Network	Organization Structure	Mentorship
13	Location	Financial Funding	Organization Structure
14	Mentorship	Customer Network	Access to Talent
15	Infrastructure	Tax Legal Business Supp.	Ability to Scale
16	Workshop/Events	Ability to Scale	Government Policies
17	Political Stability	Prior Experience	Access to New Markets
18	Financial Funding	Workshop/Events	Financial Funding
19	Government Policies	Government Policies	Work-Life Balance
20	Tax Legal Business Supp.	Work-Life Balance	Employees/Team

Color code:	HUMAN C.	CULTURE	MARKETS	FINANCE	SUPPORT	POLICY

Furthermore, a noteworthy discrepancy between Portugal and the other two ecosystems used for comparison, is the relative score of location and infrastructure. While in Portugal these two factors are lacking in terms of sustaining entrepreneurship, in the USA and Germany, location and infrastructure are strongly recognized. Interestingly, the discrepancy noted reflects on how is relatively scored the access to existing and new markets. In the USA and Germany, access to existing market is more favorable than the access of new markets, clearly showing that these ecosystems have established conditions for the entrepreneurial activity. As for Portugal, access to new markets is more favorable than the access to the existing one, which have a positive impact on the favorability of the factor of ability to scale. It seems the relative small size of the national ecosystem prepares startups to scale internationally from the start.

IV.2. Assessment of KSF on the Entrepreneurial Ecosystem

This section intents to assess the most important factors to develop business in a successful way. The previous analysis covered the relative score of the satisfaction or access to the several factors of the entrepreneurial ecosystem. Now, it is aimed to assess the most important factors to develop business on those entrepreneurial ecosystems. If KSF were satisfied, the entrepreneurial ecosystem becomes sustainable. KSF are identified and compared with KSF on Germany and USA with the purpose of setting context to study the primary driver to achieve success in the Portuguese ecosystem. Top success factors are assessed, followed by an analysis on the categories of factors, recognizing similarities and differences with relevant entrepreneurial ecosystems, in order to distinguish what are the main drivers for success on different ecosystems.

Portuguese KSF Assessment

To identify what are the most important factors to success in the Portuguese ecosystem, it was asked entrepreneurs to score 25 factors according to their perceived importance: 1 not important at all to 7 very important (figure 29). We averaged the scores of individual responses to identify the most important ones for Portuguese startups and to compare in relative terms the importance of factors with the USA and Germany.

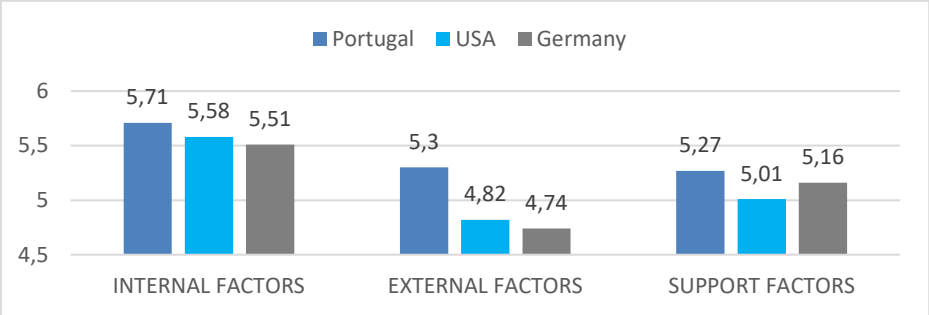
Figure 29 - Overall Score of Perceived Importance of Factors

From the 25 factors that were evaluated, there are 5 that got an average score above 6.0 while average score of all the factors is 5.48. Those 5 factors are considered KSF, and in order of importance are: teams, products, founders, work culture and access to new markets. In addition, access to talent was also mentioned as of high importance, being also identified as KSF. Access to talented human capital is crucial for any organization (Audretsch et al., 2011; Bahrami and Evans, 1995; Harrison & Leitch 2010). For startups, accessing to talent seems to be even more demanding (Hisrich & Jankowicz, 1990; Harroch, 2013), as they compete with large corporations which already have established reputation in the market and that can claim stability in terms of career path and solid position in the market, capturing talent for all levels of the organization. Taking large part of the potential talent pool due to their vast resources, that startups so many times lack (Hisrich & Jankowicz, 1990). Furthermore, as the most important factors for startups are people oriented factors (employees/teams, founders, work culture) combine with product, it shows that the most important factors on the success of a startup are internal factors. Regarding location results show that this is not an important factor and that access to new markets is more important than access to the Portuguese market. What really matters is the capacity to tap into international markets regardless of where the startup is based, which relates to the fact that startups in the sample work on the ICT sector taking advantage of the global economy. Moreover, exit strategy scores very low, showing entrepreneurs' motivation to conduct their businesses in the long run, without a clear plan for leaving it. Entrepreneurs are attached to their businesses so an exit strategy clearly is not a top priority for them. Finally, although results for the assessment of the Portuguese ecosystem recommend that support institutions must develop workshops or event activities and help entrepreneurs with bureaucracy, those factors are not crucial to achieve success. Additionally, as teams and product were scored as the most important factors within the KSF for entrepreneurs, it is required to assess a specific set of factors that can determine the main driver of the Portuguese ecosystem, being more people oriented showing a great degree of concern with human capital at the startup, or driven by the business model, the strategy or the idea. By comparing the KSF in the USA and in Germany, that differ in regards to their main drivers, it is possible reach to the set of criteria that assesses which of the ecosystems most closely resembles to Portugal in terms of focus.

KSF Comparison on Different Ecosystems

To evaluate differences in success drivers for different ecosystems, KSF results for Portugal, USA and Germany are presented side to side, first in terms of category importance (figure 30) and then, in terms of the relative role that distinct factors play in achieving success for startups in specific ecosystems (figure 31).

Figure 30 - Overall Perceived Importance of Categories



Results show that the relative importance of the different categories remain almost the same in the three ecosystems (figure 30): internal factors are the most important, then external influence and support from formal institutions. Noteworthy differences are that in Germany, a higher importance is placed on the role of incubators and accelerators, over the impact of external factors. While, both USA and German startups place almost the same importance on each of the three categories, Portugal scores higher on each of the categories. Nevertheless, absolute scores do not have a meaning as the research strives to understand the relative score of factors. Worth noting is the wide discrepancy of perceived importance of external environment in Germany and USA compared with in Portugal (figure 30). That is due to the favorable political scenario in the ecosystem that promotes entrepreneurship and development of businesses, that was found in the assessment of the favorability factors.

Environmental success factors are ranked by their level of importance to success in accordance to major startups in the ecosystems. A Color code is used to easily identify the source of the factors (figure 31).

Figure 31 - Importance Ranking of Factors of Different Ecosystems

	PORTUGAL	USA	GERMANY
1	Employees/Team	Founders	Product
2	Product	Work Culture	Founders
3	Founders	Employees/Team	Access to Talent
4	Work Culture	Access to Talent	Employees/Team
5	Access to New Markets	Expanding Network	Marketing Strategy
6	Access to Talent	Customer Network	Work Culture
7	Ability to Scale	Financial Funding	Customer Network
8	Customer Network	Product	Expanding Network
9	Access to Existing Market	Company Pitch	Ability to Scale
10	Marketing Strategy	Access to Existing Market	Mentorship
11	Expanding Network	Mentorship	Financial Funding
12	Financial Funding	Infrastructure	Company Pitch
13	Organization Structure	Marketing Strategy	Access to New Markets
14	Company Pitch	Work-Life Balance	Access to Existing Market
15	Mentorship	Access to New Markets	Organization Structure

16	Tax Legal Business Supp.	Location	Infrastructure
17	Prior Experience	Prior Experience	Prior Experience
18	Competitors	Ability to Scale	Political Stability
19	Work-Life Balance	Organization Structure	Tax Legal Business Supp.
20	Infrastructure	Exit Strategy	Work-Life Balance
21	Political Stability	Political Stability	Government Policies
22	Government Policies	Tax Legal Business Supp.	Location
23	Location	Competitors	Workshop/Events
24	Workshop/Events	Government Policies	Competitors
25	Exit Strategy	Workshop/Events	Exit Strategy

Color Code:	INTERNAL FACTORS	EXTERNAL FACTORS	SUPPORT FACTORS

Founders of startups and employees or teams remain identically as KSF on the three ecosystems. On categories of factors, internal factors dominate the perception of entrepreneurs to their success. People related factors seem to be critical to success across different ecosystems, yet planning an exit strategy, workshops from support organizations and policies from governments are similarly considered less important to success.

Regarding major distinctions that can be made between ecosystems, while US startups classify their founders, work culture and talented employees as the key factors to success, German startups give more importance to their product and marketing strategy, a part from people oriented factors. Portuguese startups, on the other hand, combine people factors including work environment with product, but also place great importance on new markets. From the results, it appears that Portuguese startups have greater consideration for accessing different global markets in comparison with North American and German startups. While Americans are very people oriented, focusing much more on its teams and developing proper network connections, before developing other capabilities such marketing strategy, company pitch, or even product. Germans startups focus more on business model and strategy, being driven by product and the startup idea.

IV.3. Team-focus vs. Idea-driven Entrepreneurial Ecosystem Assessment

Portuguese Entrepreneurial Ecosystem Success Drivers Assessment

As results from the research prove that the Portuguese ecosystem is rather mixed in terms of its primary focus, it is required to test what is in fact driving success on the Portuguese ecosystem for startups. This section uses relevant factors that can validate each of the groups of factors and that

were presented in section II.4 to attest if it is the focus on talented people in startups that pushes for success. Or, if it is the business idea, corroborated by the focus on product and its fit with the market, driving success on Portuguese startups. Figure 32 summarizes results in terms of main driver to success and, evidently reveals that the Portuguese entrepreneurial ecosystem is driven by its focus on the skills of people in startups. Subsequently, figure 33 and 34 detail the perceived importance of each of the factors that are used to assess each of the driver groups.

Figure 32 - Overall Score for the Portuguese Ecosystem Driver

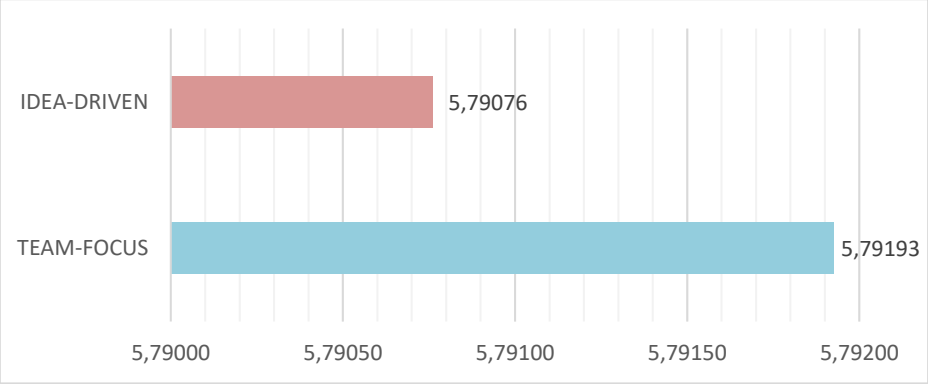


Figure 34 - Detailed Score of Idea-driven Factors

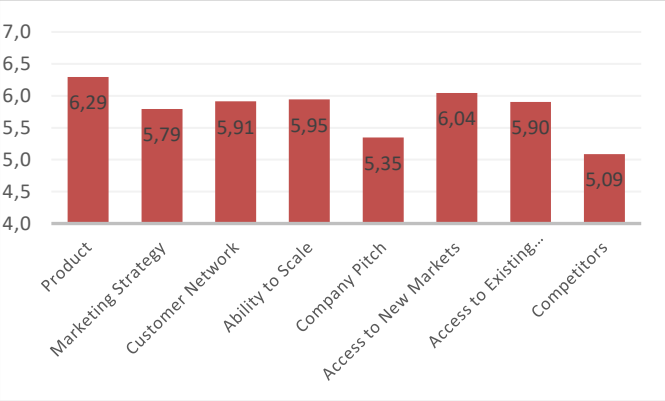
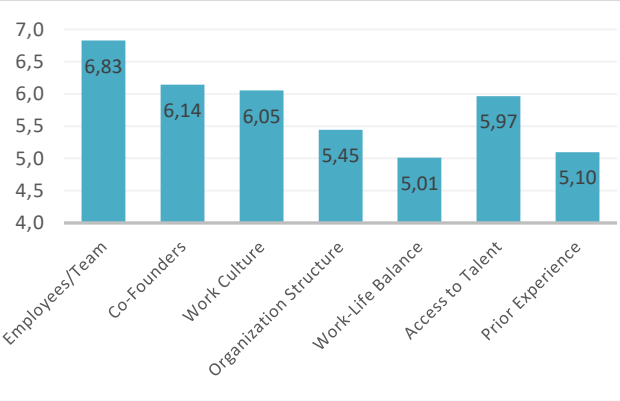


Figure 33 - Detailed Score of Team-focus Factors



In regards to recognize the primary focus of the Portuguese entrepreneurial ecosystem, it is important to note on the factors that are the most important drivers to success for Portuguese startups. Primarily those are the employees in startups, product and founders. In addition, the environment that people experience in the startup, access to new market and talented hires, are also significant factors that stimulate success. The composite score of the two categories express that the main motivator of success is in fact, the people at startups. Which is proved by the relative high score in terms of importance of employees and founders of startups, but also by the importance of the environment at work and the importance of capturing the best talent. However, there is given noteworthy importance to product, markets and ability to scale the business, which shows focus on accelerate growth. This

proves that startups are aware of the importance of conducting product-market fit and to put into practice a successful customer acquisition model. This could mean that startups are being driven by their business, in the sense of their idea of product. Nevertheless, a much higher level of importance is being given to the skills of people in startups and how to access that talent. Which presents stronger evidence that startups are being driven by the talent in their teams. Although results show the main driver for success is the focus on teams, there is a lack of care concerning the work-life balance of people that can significantly harm development. Moreover, the lack of importance towards prior experience regarding people in the startup can mean the recognition of the educational institutions in graduating talented professionals and worthy entrepreneurs.

Comparison of Entrepreneurial Ecosystem Success Drivers

After identified the KSF on the three different ecosystems in section IV.2., it is possible to distinguish how is the relative importance of the factors that label the ecosystem as team or idea driven (figure 35). In that sense, if hypothesized that the German entrepreneurial ecosystem is mainly idea-driven and the North American entrepreneurial ecosystem is considered to be primarily team (Geibel & Manickam, 2016). The Portuguese entrepreneurial ecosystem, while having strong influences of the two main drivers, is considered team-focus due to resemblances in terms of relative perceived importance of main drivers in the USA ecosystem, mainly in regards to the importance of a strong work culture. Contrasting, Portugal seems to be more distanced from the German ecosystem, mainly in terms of being driven by marketing and startup pitch.

Figure 35 - Team-focus vs. Idea-Idea Ecosystems Assessment

PORTUGAL	USA	GERMANY	
Employees/Team	Founders	Product	1
Product	Work Culture	Founders	2
Founders	Employees/Team	Access to Talent	3
Work Culture	Access to Talent	Employees/Team	4
Access to New Markets	Customer Network	Marketing Strategy	5
Access to Talent	Product	Work Culture	6
Ability to Scale	Company Pitch	Customer Network	7
Customer Network	Access to Existing Market	Ability to Scale	8
Access to Existing Market	Marketing Strategy	Company Pitch	9
Marketing Strategy	Work-Life Balance	Access to New Markets	10
Organization Structure	Access to New Markets	Access to Existing Market	11
Company Pitch	Prior Experience	Organization Structure	12
Prior Experience	Ability to Scale	Prior Experience	13
Competitors	Organization Structure	Work-Life Balance	14
Work-Life Balance	Competitors	Competitors	15

Color Code:	TEAM-FOCUS FACTORS	IDEA-DRIVEN FACTORS

V. CONCLUSION

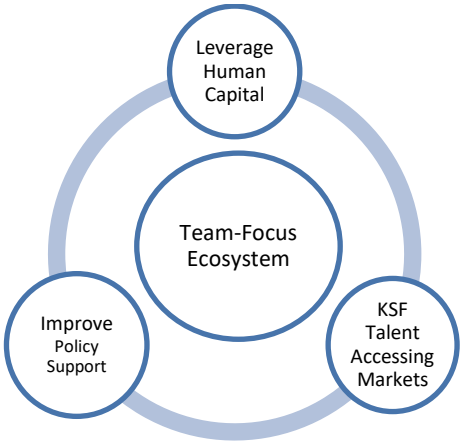
V.1. Main Conclusions

Following the specific set of factors that define each of the motivation drivers (team or idea), we can assume that the entrepreneurial ecosystem of Portugal is being driven by the focus of startups on its people. Resembling the US ecosystem which is considered people oriented, while Germany is product oriented due to higher importance of product and marketing (Geibel & Manickam, 2016). In the Portuguese entrepreneurial ecosystem is key to focus on talented people at startups (co-founders and employees) and to access and capture that talent, as well as a strong work culture. Nevertheless, the learning process of creating and developing a startup depends on the specificities of the ecosystem (Isenberg, 2011b). What drives an ecosystem, its priority focus, may not result in success if the ecosystem does not support or satisfy the most important factors for startups (Rockart, 1982; Leidecker & Bruno, 1984). In order to benefit from the Portuguese ecosystem, it is essential to leverage on its most favorable characteristics. In that sense, leverage can be found on the inclusive culture of the country that is favorable to entrepreneurship, embracing it and supporting a favorable business context and work environment. And more evidently, on the talented human capital. A vast and accessible talent pool, that is in risk of escaping the ecosystem if not continuously sustained. The degree of access to affordable and talented future hires is an advantage in the Portuguese ecosystem. Moreover, the fact that, prior experience of people in startups is not essential, it clearly undertakes that leverage can be found on the talent that is coming from educational institutions of the Portuguese ecosystem. In this ecosystem, access to talented entrepreneurs there are coming out of Portuguese universities is key, thus universities that want to promote themselves as entrepreneurial led must continue to improve their offer of specialized courses in entrepreneurship.

Besides a strong talent pool, accessing international markets and rapidly scale the business is key for Portuguese startups. The perception of ability to scale startups, therefore their confidence that their business will grow, is being positively sustained in the Portuguese environment. Which is crucial since accessing new markets and ability to scale are much important comparing to startup ecosystems in the USA and Germany due to the relatively small size of the Portuguese internal market compared with the other two ecosystems, showing that conditions in the ecosystem that promote confidence in business venture are being supported. Nevertheless, accessing new markets must be further improved which can be accomplished with improvements in government policy towards entrepreneurship and support from formal institutions of entrepreneurship to further develop the entrepreneurial ecosystem and the ability to access other markets.

Figure 36 summarizes the most noteworthy findings of the research for the Portuguese entrepreneurial ecosystem.

Figure 36 - Portuguese Entrepreneurial Ecosystem



As an entrepreneurial ecosystem is only self-sustained if all its six domains become satisfactory for entrepreneurs (Isenberg, 2011a, Isenberg, 2011b), findings in the research show that the most important factors for startup success – KSF, are being properly sustained, maintained or managed, having a significant impact on the success of a startup competing in the Portuguese ecosystem. However, accelerator and incubator managers, as well as policy makers, should improve their support to startups, as the satisfaction level of their assistance is assessed to be low. Nevertheless, factors related with policy and support are not considered critical to success in this ecosystem.

In conclusion, venture capitalist can learn from this study that Portuguese startups are giving attention and putting effort on developing a strong internal team and environment, as well as a good product before focusing on marketing or expanding their network connections, showing an opportunity to entrepreneurship organizations and policy makers to support startups on these elements as they are key to success, even more than financial funding or company pitch.

V.2. Limitations

The major limitation found in the research regards the examination of the suitability of factors. First, the suitability of factors in regards to assess startup satisfaction with the entrepreneurial ecosystem. Second, suitability in regards to assess the main driver to success from the set of factors chosen. Despite the importance of criteria can be quantified using scales on a set of factors, even allowing comparisons (Feeney, Haines & Riding, 1999). A good assessment of the ecosystem depends on the criteria and scales. Depending on an adequate and comprehensive coverage of significant factors

affecting startup success. Furthermore, lack of response to the survey by potential respondents may have positive effect on non-response bias. Which is a critical problem with email surveys, even more so in anonymity, where the response rate can be very low. In this case, 92 results from 238 emails sent. Non-response bias can impact on the understanding of the Portuguese ecosystem by lowering the reliability, in terms of validity of survey findings.

The research was also confronted with strong limitations on understanding the ecosystems of the USA and Germany by studying the data collected by Geibel and Manickam, 2016. While, for the assessment of the American ecosystem, 17 successful startups were selected from the regional ecosystems of Silicon Valley, New York, Boston, Texas and other upcoming startup locations, supporting a comprehensive perspective of the ecosystem as startups were on top incubator or accelerator programs such as Techstars and Y-Combinator. For the German ecosystem, successful startups were only selected from the Cologne region. Being identified a limitation in terms of comprehensively represent the entrepreneurial ecosystem of Germany at this point, as more data from relevant startups is being collected for the second phase of the study of Geibel and Manickam (2016), which will be released in book in January 2017.

V.3. Future Research

Future work must follow on the same set of criteria used on current research, as it is intended to study how answers, concerning the assessment of the entrepreneurial ecosystem vary in different locations, industries and size. For that matter, it is expected to be conducted future research on the assessment of entrepreneurial hubs around the world to categorize the main focus of the ecosystem in terms of “team” or “idea”.

Although the present study intends to understand the main drivers for success and creates relevant groups of factors, it is also pertinent to find what works best in the different entrepreneurial ecosystems. If it is more favorable in a particular ecosystem to give more focus on “team” or on the “idea”. That research can be followed analyzing the results of the favorability factors assessing the entrepreneurial ecosystem.

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Appendix

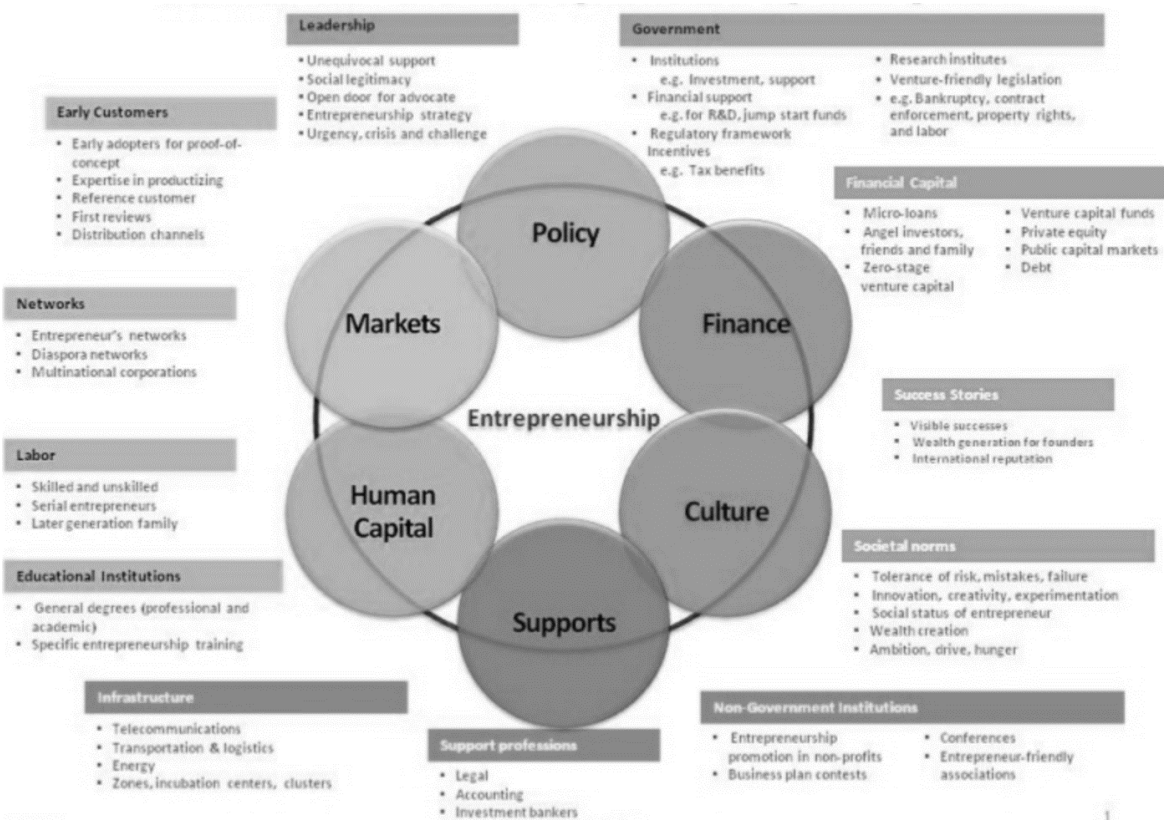

Figure 37 - Entrepreneurship Ecosystem (Isenberg, 2011b)

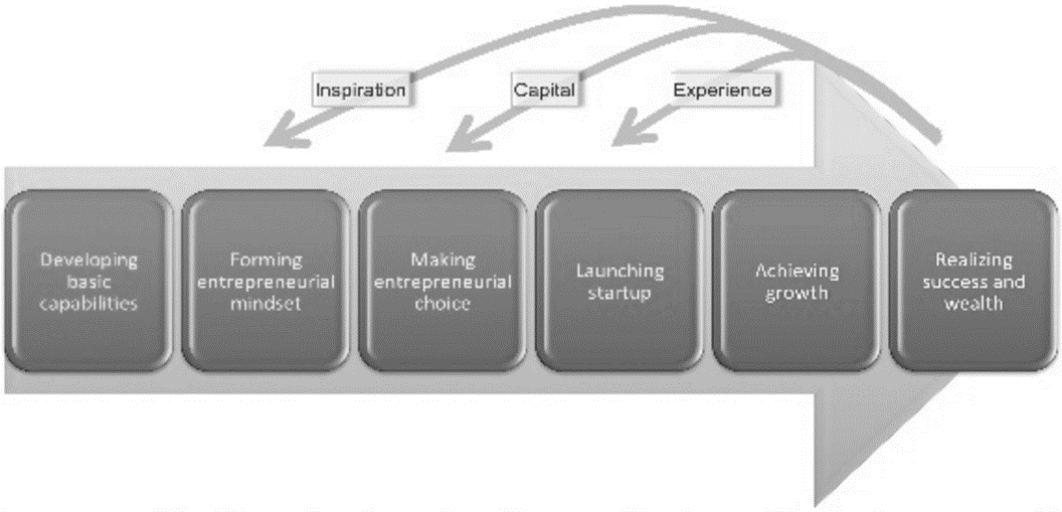

Figure 38 - Successful Entrepreneurship Spillover Effects (Isenberg, 2011b)

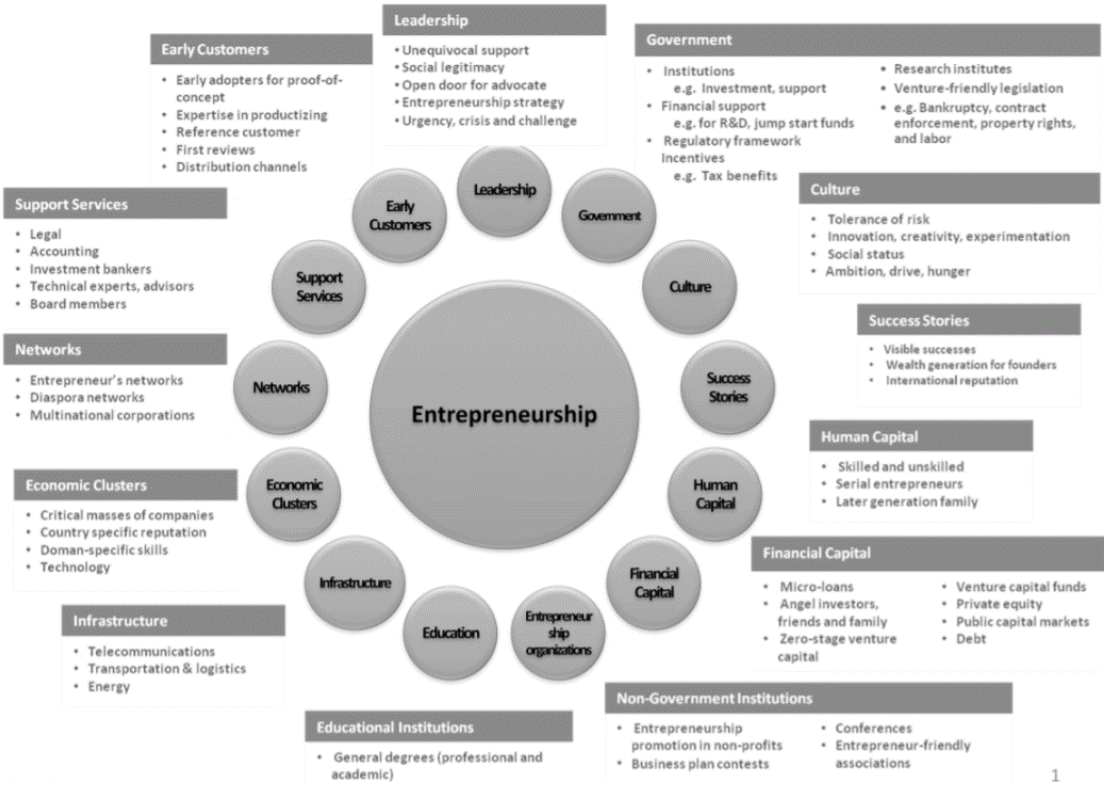

Figure 39 - Entrepreneurship Ecosystem (Isenberg, 2011a).

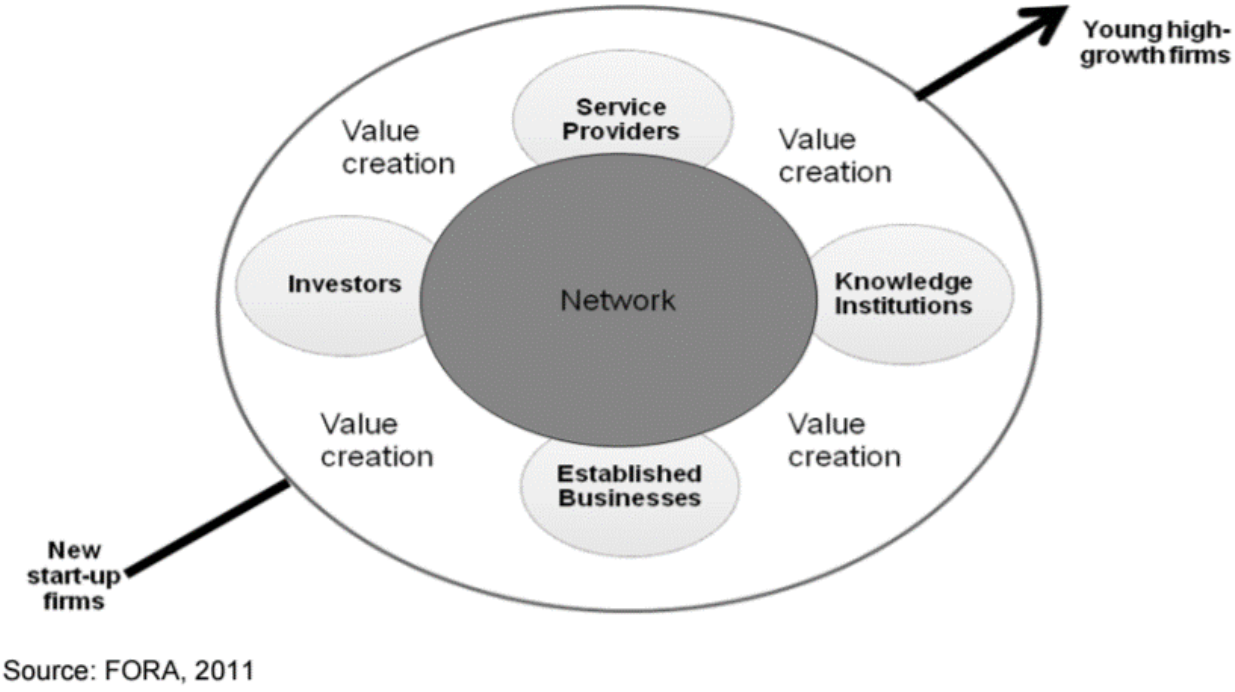

Figure 40 - The Ecosystem Model for Young High Growth Firms (Napier & Hansen, 2011).

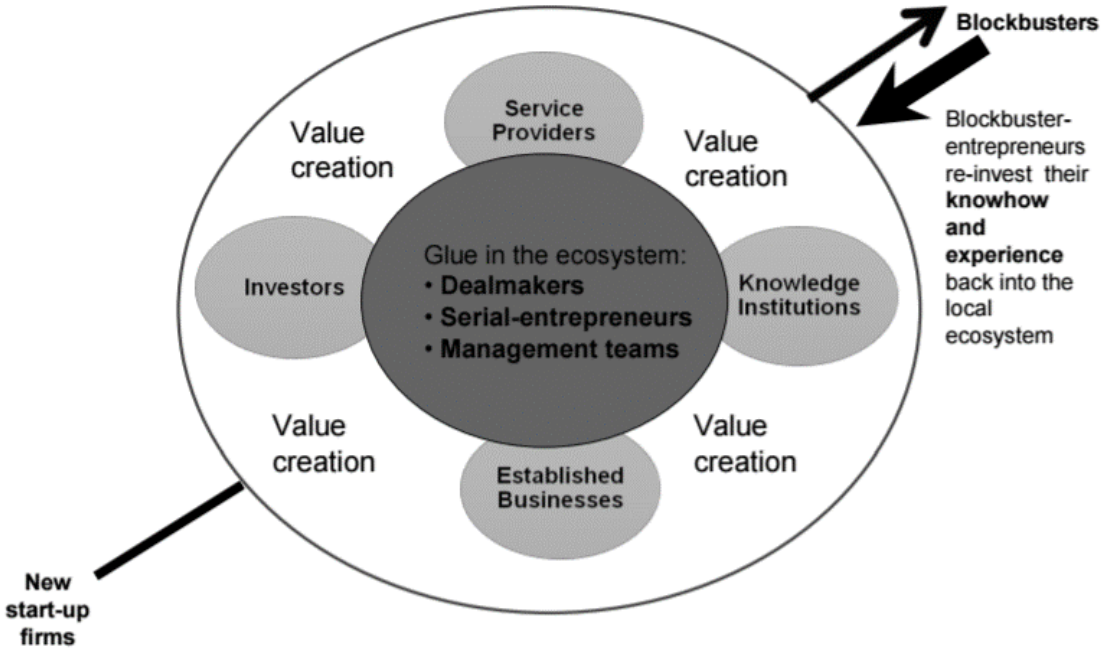

Figure 41-Blockbuster-entrepreneurs reinvest into the local ecosystem (Napier & Hansen, 2011)

Figure 42 - Portuguese Scaleups Hotspots Besides Lisbon and Porto (SEP Monitor, 2015)

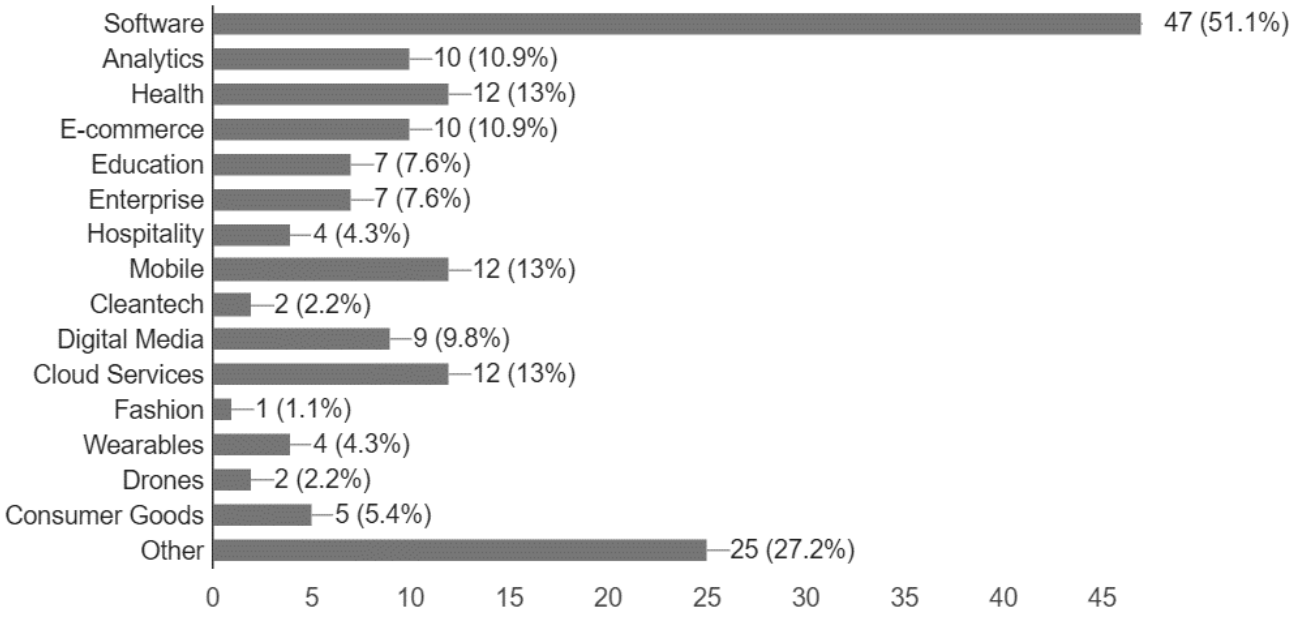

Figure 43 - Sector in which Startups in the Data Operate.

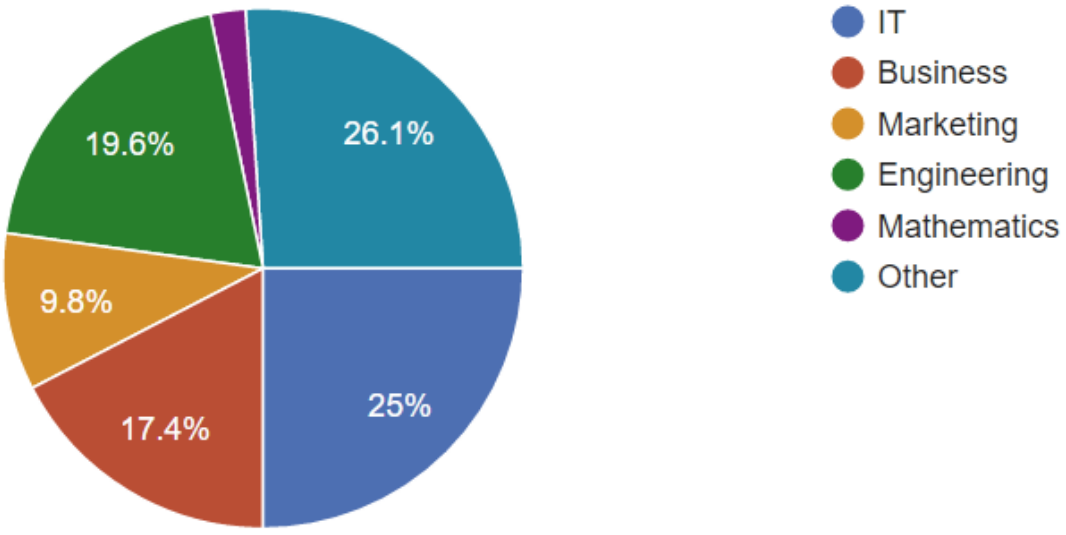

Figure 44 - Background of Entrepreneurs in the Data

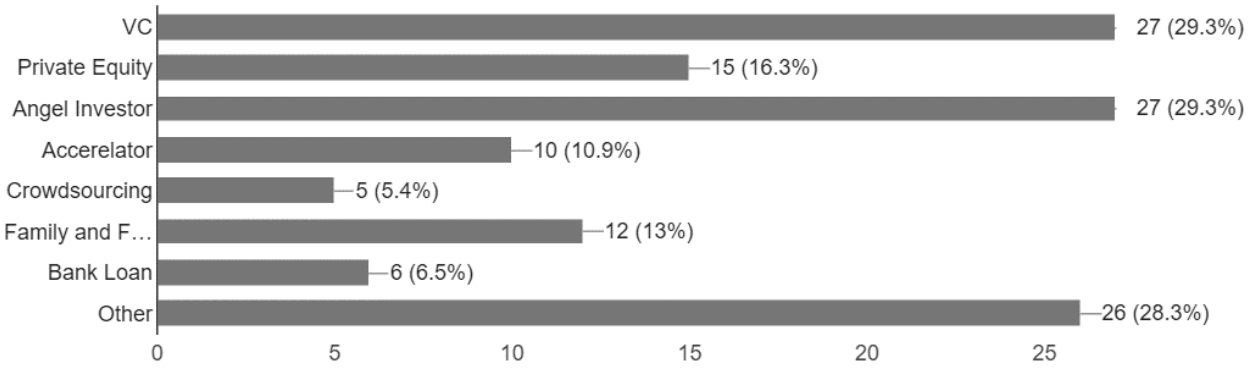

Figure 45 - Sources of Financing in the Sample.