The page features a decorative design with three blue circles of varying sizes and two thin blue lines. One line starts from the top left and curves towards the middle circle, while another starts from the top right and curves towards the bottom circle. The circles are semi-transparent and have a slight gradient.

The influence of national institutions on venture creation over time

A cross-national comparison

Name: Peter de Feijter, 3719197

Email address: p.m.defeijter@students.uu.nl

Date: 10/2/2017

Master program: Innovation Sciences

Supervisor: A.M. Herrmann

Second reader: R.P.J.M. Raven



Universiteit Utrecht

Key words: Venture creation, Institutions, Varieties of Capitalism, Start-ups

Abstract

This research report investigates how and at what point in time venture creation processes are differently arranged across countries. Concepts of the Varieties of Capitalism literature are used to find explanations in the institutional differences as to when and how start-ups “engage” in involving external labor and finance in their development process. Qualitative data is obtained from interviewing incubators and accelerator managers in the UK, Germany and Spain on the advice that they provide to start-up firms in their venture creation process. The results leading from this research paper are twofold: First, it is found that institutions do matter over time in venture creation due to evidence on different behavior and activities of start-up firms across the three market economies based on national regulatory schemes on labor and finance. Second, for both labor market and finance market applies that the more rigid a regulatory environment, the later start-ups engage in engaging in hiring external labor and acquiring external finance. It is thus concluded that start-ups “grow apart” in their venture creation characteristics over time, leading to different growth paths of entrepreneurship across different market economies.

Acknowledgements

My special thanks goes out to Andrea Herrman for supervising me while providing useful and extensive feedback in developing this report. Also a special thanks goes out to Karlos Rivera for hosting me and providing an excellent workspot at Las Naves’ collaborative space in Valencia. Further I would like to thank Climate KIC for making it possible to conduct most of my research on site in Valencia, Spain. Finally I would like to thank Rachel Watsky for the excellent help with improving my English writing style.

Table of Contents

| | |
|---|----|
| Abstract | 2 |
| Acknowledgements | 2 |
| Table of Contents | 3 |
| 1. Introduction..... | 4 |
| 2. Theory..... | 5 |
| 2.1 Labor market institutions | 8 |
| 2.2 Finance market institutions..... | 10 |
| 3. Methodology | 11 |
| 3.1. Case Selection & Unit of Analysis..... | 12 |
| 3.2. Data collection..... | 13 |
| 3.3. Analytical Approach / Method | 14 |
| 4. Analyses and Findings..... | 14 |
| 4.1 Institutions over time | 16 |
| 4.2 Institutions over time – Labor market | 17 |
| 4.3 Institutions over time – Finance market | 20 |
| 5. Conclusions & Discussion | 23 |
| 6. References..... | 25 |
| 7. Appendices | 30 |
| 7.1 Appendix A – Interview questions | 30 |
| 7.2 Appendix B – Start-up aid organization sample | 32 |

1. Introduction

Despite similarities arising from influences such as agreeing policies or traditions, no two countries are exactly the same. Cultural and governmental asymmetries have long been observed, but recently the differences in economic behaviors across countries have increasingly become a main focus for many researchers. Hall and Soskice (2001) found evidence for these differences in economic behavior and introduced the “Varieties of Capitalism”(VoC) literature, where they claim that national institutions offer comparative advantages to firms within a market economy. The VoC literature has been developed through studies of established firms monitoring how their business strategies and behaviors are affected by their specific institutional environment. Research based on this literature has been used to explain national differences in economic performance, innovation strategies and national policy management with different institutional environments heavily varying across countries, (e.g. Bruton et al., 2010; Fang, 2010; Hall & Thelen, 2008; Taylor, 2004).

National institutions in a VoC terminology are described as patterns of behavior resulting from laws and regulations that either restrict or enhance firm activities. This firm-centric perspective offers multiple comparable institutional spheres in which firms engage with others, but is criticized for its static nature unable to explain institutional change (Howell, 2003; Streeck, 2005) or the dynamics of innovation processes (Taylor, 2004). The defending work of Hall & Thelen (2008) addresses aspects of institutional change over a period of time, but other studies on how institutions matter over time still merely exist. A gap can therefore be filled on how firms and other economic actors behave over time, resulting from a regulatory environment.

Questions can be raised as to when and how institutions start to matter over time in determining economic behavior of firms across different market economies, such as ‘at what point in time in the process of becoming an established firm do institutions influence the decisions and activities of firms in development?’ The basis for firms’ main activities is established in their start-up phase and thus can be influenced by institutions throughout this phase, but do these institutions lead to differences in start-up processes? These issues are typically discussed by the entrepreneurship literature on venture creation processes, where it describes what activities are important in enhanced start-up development and in what order they take place (Delmar & Shane, 2004; Krueger et al., 2000; Liao & Welsch, 2008; Reynolds, 1997). These studies emphasize the heterogeneous character of venture creation processes leading to unclear insights on (e.g.) the sequence of start-up activities and the type of resources they use. More importantly, it seems to be unclear what factors start-ups drive to make decisions on how to develop themselves over time.

The entrepreneurship literature embraced the emerging institutional literature by using institutions as influence on entrepreneurial activity (Davidsson & Henrekson, 2002; Townsend & Hart, 2008). The findings of these studies use institutions mainly to explain firm growth and entrepreneurial, though lack to clearly explain which institutions are key for venture creation processes. The institutional environment surrounding the emergence of start-ups is perceived as ambiguous because of its unpredictable nature (Newman, 2000) and therefore needs a more dynamic approach as well. Consequently, this paper combines the need for a more dynamic view on institutions over time with venture creation processes by addressing the following research question:

How do national institutions influence venture creation over time?

Answering this research question provides the VoC literature with a more dynamic institutional approach by investigating how institutions matter for start-up firms over time. This research differentiates itself from previous literary contributions that primarily investigated how institutional arrangements affect existing firms' behavior across countries in different economies (Hall & Gingerich, 2009). Venture creation is by nature a dynamic process and rather takes start-up firms into account than existing firms. The entrepreneurship literature about venture creation lacks a clear understanding as to what institutions typically cause differences in venture creation processes across countries. This report therefore contributes to scientific research by filling the gap between the institutional VoC literature and the entrepreneurship literature with a more dynamic approach that explains *when* institutions start to matter and *how* this influences the process of new venture creation.

The societal contribution of this report is focused on both nascent entrepreneurs as well as policy makers. Nascent entrepreneurs may use the results to align their start-up activities with their national institutional environment. Thorough knowledge of the direct institutional environment may influence early stage decisions (e.g. on start-up team formations and financial means over time) and help in increasing start-up firm survival. Policy makers may also benefit from the results of this report because they can redirect their policy measures to be more aligned with national institutions and influence firms' behavior regarding new trends or changes in their national start-up development.

To address the research question, first a theoretical framework is derived on how institutions may impact venture creation over time. Hypotheses on the influence of labor market regulations and finance market regulations on venture creation are derived and are then tested through a deductive qualitative comparative case study of start-up aid organizations in the United Kingdom, Germany and Spain. The remainder of the paper is structured by highlighting the results of the tested hypotheses, emphasizing the most important findings and finishes with the main conclusions.

2. Theory

There are two different institutional settings in which companies can be successful according to the VoC literature. Distinguishing between radical and incremental innovation, the VoC literature argues that liberal market economies (LMEs) drive companies to develop radical product innovations based on new technologies (Herrmann, 2008). LMEs have more fluent labor markets, meaning they are able to execute radical product innovations while still able to acquire the required labor forces (Taylor, 2004). LMEs can count on capital acquisition mostly depending on equity shareholder investments, which enhances a widely available finance market (Hall & Soskice, 2001). Coordinated market economies (CMEs), in contrast, include more regulated labor markets and facilitate incremental product innovations based on improving existing technologies. CMEs also tend to coordinate and protect their labor systems with strong trade unions, which creates a secure work environment with opportunities to influence firms' long term strategy with incremental innovations (Hall & Soskice, 2001). Financial capital acquisitions in CMEs mostly depend on reputation and are focusing on long-term decisions which lead to incremental product differentiation rather than radical market races with heavy product competition (Hall & Soskice, 2001; Herrmann, 2008). Companies are therefore differently institutionally embedded in these two market economies.

A third market economy has been identified by the contributions of Molina & Rhodes (2005), Mixed Market Economies (MMEs), and consists of mimicking features of LMEs and CMEs. MMEs have similarly

strong organizational structures as CMEs, but have more fragmented finance markets (Molina & Rhodes, 2005). This high fragmentation makes risk diversification in financial markets difficult and thus hard to establish stable equity finance markets. Compared to CMEs, MMEs lack short-term financial capital as well but strong regulations that stimulate financial investment flows are missing. Finance is not widely available and needs financial compensation by the state (Amable, 2003). MMEs are further characterized by unorganized labor markets with strict employment protection by the state (Amable, 2003). Despite these high levels of state coordination through financial compensation and state ownership, the high level of employment protection does not protect the levels of investment in specific skills. The skill sets of employees without investing in education and training leading to a relatively low-skilled workforce. Consequently, MMEs are specialized in light and low-tech industries, with relatively low wages and a low innovative character as result (Amable, 2003). MMEs are therefore seen as not coordinated enough to function as CMEs and too unstable and fragmented to function as a LME.

The different market economies are therefore seen as sensitive to how they shape they shape national institutions and how they shape different types of innovations.

This argument resonates well with the findings of the entrepreneurship literature that different types of start-ups exist, across different market economies, as indicated by the extent of firm growth and novelty of business ideas (Brush et al., 2001; Davila et al., 2003; Koellinger, 2008). Radical oriented start-up firms have higher growth paths while introducing new products or services to the market (LMEs) in comparison to incremental oriented start-up firms which have lower growth paths (CMEs and MMEs) (Elfring & Hulsink, 2001). Koellinger (2008) further points out that principle-agent problems are solved differently between countries based on the extent of available information about new technologies and new organizational forms. In turn, this influences the degree of novelty of innovations in a sense that countries with poorer information streams on new technologies rather develop incremental innovations and build on existing products and services (Huo, 2014). Accordingly, countries differ in the extent to which high-growth start-ups bring radical innovations to the market on the one hand, and lower growth start-ups bring incremental innovations to the market on the other.

Combining these insights with the VoC typology, one can argue that LMEs are good in *high-growth* start-ups based on radical innovation; CMEs are good in *medium-growth* start-ups based on incremental innovation; and MMEs good in *low-growth* start-ups.

These different growth paths are established by how start-ups develop through different stages over time where different stages can be defined as early stage, later stage and growth stage. The early stage is characterized with business ideas being developed by either individuals or small project teams and is mainly dominated by processes such as idea generation, team formation and prototyping. This stage further involves “seed” investments by either early stage venture capitalists, business angels or government aid (Bosch et al., 2013). Start-up firms in the later stage are looking to raise their first big finance rounds in need for further development of their business. Further development usually means changes in team formations bigger investment rounds by venture capitalists and further resource mobilization (Brander et al., 2002). The growth stage contains start-up firms with stable and continuous financial support or income, with growing labor forces and scalable market potential. The need for resources has shifted from low labor forces with small investment rounds towards growth, scalability and finance connections (Lei-Yu, Chun-Ju, Cheng-Ping, & Lee-Yung, 2006). These different stages indicate the

time in which venture creation processes take place and differs for the different growth paths of start-ups across market economies.

The development of start-ups over time opens the discussion on how their differences are institutionally conditioned; how do start-up firms behave differently through the development stages? The entrepreneurship literature agrees with the VoC literature that the key input factors to venture creation (as well as the operation of incumbent firms) are finance and labor. The VoC literature illustrates how the solution of a collective action problem is related to the acquisition of these two resource input factors. Collective action problems are described as a setting in which there is a group of individuals with a common interest but have a potential conflict between the common interest at each individual's level (Ostrom & Ahn, 2007). The conditions for solving these collective action problems for both finance and labor are embedded in the institutional environment as a result of standards set by specific laws and regulations.

Institutions within collective action problems determine to what extent start-up firms are provided with different types of finance and labor. The collective action problem in settling *labor* contracts is typically seen as a free rider problem where firms are hesitant to invest in education and training for their employees with the chance of losing employees to competitors (Hall & Soskice, 2001). Employees are hesitant to acquire these firm-specific skills because the skills are not applicable to other jobs. As a result, firms struggle with creating stable labor forces, whereas workers struggle with deciding what type of skills they are willing to acquire (Hall & Soskice, 2001). Collective action problems in *finance* acquisition are how firms access finance and in which traits investors seek for establishing a secure return on their investments (Hall & Soskice, 2001). This coordination problem is seen as a principle-agent problem where the interests of investors should be aligned with a firm by lowering information asymmetries. The investor needs to gain information on the profitability of the firm, preferably in a short time span, while the firm needs credible finance conditions with preferably a longer amount of time to return the investment (Vitols, 2001). The way in which these collective actions problems are solved depends on the institutional conditions for labor and finance across market economies.

However, collective action problems around finance and labor have not necessarily yet to be solved at the early stages of venture creation. As an example, the underdeveloped character of a start-up environment at a very early stage genuinely consists of "friends-fools-family (FFF)" regarding financial capital in their earliest stage (Elfring & Hulsink, 2001). Regarding labor forces, start-up firms are solely limited to the founders themselves. Thus at this stage start-ups mainly work on their business idea independently in their internal environment. A moment that possibly can be seen as a start of interaction with the external environment is the moment of official start-up registration. This moment seems to be important in influencing benefits on either delaying or fastening official start-up registration (Williams & Kadir, 2016). These benefits are expressed in advantageous conditions for involving both external labor and finance at an early or later stage.

To conclude, institutions do not matter *ubiquitously* in acquiring different types of finance and labor forces, but start to matter in the moment in which they contribute to solving a collective action problem. This reasoning leads to the proposition of the following hypothesis on the moment (the *when*) in which institutions start to influence venture creation:

H1: Institutions start to influence venture creation as soon as they contribute to solving a collective action problem related to the acquisition and availability of labor and finance.

If this is the case, **how** do institutions influence venture creation with regard to labor and finance?

2.1 Labor market institutions

The VoC literature proposes straight forward claims in differences of labor market institutions across market economies. Labor market institutions are behavioral patterns of economic actors resulting from associated labor market regulations (Baker et al., 2004). Labor and employment laws channel certain behaviors of economic actors and form the foundations for these labor institutions. Contract duration terms under which employees are hired or the extent of firm-level knowledge acquired by employees are, for example, part of the institutional labor environment of a country. Institutional labor environments are therefore shaped according to the characteristics of specific market economies.

CMEs are characterized as strongly regulated labor environments primarily focused on developing incremental innovations. Employees in CMEs have therefore mostly incremental skills because they pursue long-term careers within companies and are strongly institutionalized by trade unions, work counsels and long notice periods (Hall & Soskice, 2001). This indicates they primarily have knowledge about a specific sector of the firm on a high quality level. These *firm-specific skills* are acquired through intense training and education programs and are least portable because they are not applicable to other firms (Estevez-Abe et al., 2001). Employees are willing to invest in these skills and thus free riding is overcome by the relatively long term employment because it secures the value of the comprehensive training programs. The long term employment is supported by the centralized bargaining levels in which employees with equal skills are rewarded with equivalent wages (Herrmann, 2008). The employment environment of CMEs therefore leads to institutions that comply with the strongly regulated labor market.

The labor market in LMEs is characterized as loosely regulated and focused on highly flexible labor contracts. Both employees and employers in LMEs are less interested in investing in comprehensive training programs because they fear, respectively, to get fired and employees changing jobs repeatedly (Hall & Soskice, 2001). Employees are reluctant to invest in these specific skills because they fear dismissal on short notice, while employers fear that competitors will acquire their educated employees after they invested heavily in their highly qualitative training programs (Herrmann, 2008). This free rider problem is overcome by acquiring *general skills* instead of firm-specific skills. Labor institutions cause these skills to be applicable to a broad scale of firms and make it easier to find new labor forces for employers. This flexible employment environment of LMEs therefore allows for relatively easy career switches by employees and prevents the need to heavily invest in firm specific skills by employers.

MMEs are seen as economies in which low-wage standards do not allow for investing in sophisticated training programs for both employees and employers (Amable, 2003). Employees instead decide to work without investing in further education or training programs and employers are not likely to provide education programs (Herrmann, 2008). The lack of efficient labor market policies and training programs connected with business profiles leads to a lack of finding matches between employers and workers (Molina & Rhodes, 2005). As a result, the unemployment rates in MMEs are relatively high and the workers are *low-skilled* (Amable, 2003). The labor market in MMEs is therefore characterized with low-skilled labor

forces and should be aligned with the expectations of labor seeking firms, or stimulated to increase their skill levels with education or training programs.

The ability to invest in a particular skill set (firm-specific, general or low) across CMEs, LMEs and MMEs is therefore embedded as national institutions and differs between the types of market economies.

The insights of different labor market institutions can be translated to the entrepreneurship literature by emphasizing start-up team growth. Start-up team growth, or “human capital”, is considered to be a critical resource for the development and success of start-up firms (Barney, 1991; Rauch, et al., 2004; Unger et al., 2011) and include attributes like experience, training, and skills of individuals in a firm (Barney, 1991). Positive human capital attributes are in particular important to attract investors that seek for high potential start-ups, because they are part of the selection criteria of VCs (Zacharakis & Meyer, 2000) and are increasingly important for increasing knowledge-intensive activities in start-up ecosystems (Bosma et al., 2004; Unger et al., 2011). In order to prevent lagging in sufficiently growing a start-up team, start-ups should align their team development activities with their institutional environment.

However, human capital is differently developed due to differences in institutional environments as previously described. Purely based on labor market regulations, start-ups in LMEs are able to develop human capital rather easily because labor contracts are less binding and workers are only interested in acquiring widely applicable general skills. It is therefore expected that start-ups in LMEs benefit from these conditions and are efficient in start-up team formation already in an early stage. Start-ups in CMEs with high long-term employment standards are expected to perceive more difficulties in developing human capital by hiring new talent. Start-ups that are unable to comply with the rigid labor market regulations of these CMEs invest heavily in sophisticated training or education programs and therefore have less binding labor contracts. These flexible labor contracts, however, could be seen as a disadvantage in terms of labor productivity because of a lack of full commitment and willingness to invest in firm-specific skills (Machikita & Sato, 2016). It is therefore expected that start-ups in CMEs are hampered in their team formation processes and hire at a later stage in the venture creation process. Start-ups in MMEs are not able to create sufficient human capital due to the scarcity of high skilled talent, despite the high unemployment rates. The overprotective labor market with low wages lacks financial and educational benefits and makes it difficult to tempt workers to work for start-ups. Consequently, human capital is only acquired at later stages where there is a higher legitimacy for start-up firms. This leads to the following hypotheses:

H2: Labor-market institutions influence the moment in which human capital is acquired by start-up firms.

H2a: The flexible labor market institutions of LMEs imply that human capital is hired early in the venture creation process.

H2b: The rigid labor market institutions of CMEs imply that human capital is hired later in the venture creation process

H2c: The overprotective labor market institutions of MMEs imply that human capital is hired very late in the venture creation process.

2.2 Finance market institutions

Finance market institutions are behavioral patterns, practices or policies resulting from regulations that restrict or enhance investors in investing their capital (Hall & Soskice, 2001). For the extent of finance market institutions the VoC literature also proposes straight forward claims.

LMEs are characterized by outsider systems where investment structures are dominated by venture capitalists (VCs) (Hall & Soskice, 2001; Hall & Thelen, 2008). This outsider system is characterized by private pension funds where employees provide parts of their salaries to external pension providers (Herrmann, 2008). Private pension organizations reinvest sums of these pensions and increases the supply of capital in financial equity markets (Jackson & Vitols, 1997). This external nature of pension provision in LMEs shifts responsibilities away from firms to employees and creates a higher individual risks, but with short-term (re)- investment possibilities (Jackson & Vitols, 1997). Consequently, LMEs are typically seen as economies with a higher number VC firms compared to economies with opposing (public) pension systems (Herrmann, 2008). Start-up firms, in turn, benefit from short these rapid available capital despite the obligation to maximize the shareholders' value and equity stakes in their firm (Herrmann, 2008).

The financial market regulations are stricter in the strongly regulated CMEs and makes that short-term venture capital provided by institutional investors is comparatively limited. Pension regimes in CMEs are known for high levels of public pensions, which indicate an insider financial system where pensions are financed by equal employee/employer contributions or taxes (Herrmann, 2008; Jackson & Vitols, 1997). Consequently, the accumulating share capital is difficult and lead to less available venture capital (Hall & Soskice, 2001; Jackson & Vitols, 1997). A lack of venture capitalists limits the short-term capital availability which is deemed important in start-up development. Firms therefore mainly rely on "patient capital" with generating income only long-term return (Hall & Soskice, 2001).

MMEs are characterized as a state centered investment climate where national companies are protected and/or owned by the government (Molina & Rhodes, 2005). This centralized financial system deters the availability of short-term capital by venture capitalists because pension funds are genuinely provided by the public sector (OECD, 2008). Also, despite a continuous trend of privatization from public to privately owned firms in MMEs, which usually leads to a bigger capacity of financial capital, its process is lacking efficiency and speed. The lack of short-term capital, together with the low wages, is negatively influencing the labor market as well (Amable, 2003). Therefore, the central role of the government plays a big role in providing financial compensation in an economy that lacks VC investments.

Developing strategies in using external financing sources, in each of these market economies, is one of the most fundamental question in entrepreneurship studies (Cassar, 2004; Denis, 2004). Entrepreneurs rely on the acquisition of available finance and is of major importance in an insecure entrepreneurial environment (Baum & Silverman, 2004; Cassar, 2004; Davila & Foster, 2007; Zacharakis & Meyer, 2000). In finding the right type of available capital for firms, the institutional literature teaches us that information asymmetries are to be solved between firms and financiers (Hall & Soskice, 2001). Gaining reliable information streams is relatively costly for start-ups where there is less financial capital offered or are finances provided with higher rates compared to established firms. Consequently, start-ups are by nature discouraged in using external financing sources (Cassar, 2004).

The VoC theory also establishes that some countries have an institutional environment with differences in the extent of finance market regulations. The flexible finance market in LMEs allows start-ups to benefit

from external pension investments and plenty of shared capital by VCs. For the (high-growth) start-ups in LMEs the benefits of the high level high-risk investments by VCs are significant because VCs are seen as experts identifying high-growth firms or “gazelles” and investing in them accordingly (Denis, 2004; Zacharakis & Meyer, 2000). The radicalistic nature of innovations in LMEs drives start-ups to a high need of short-term investments to grow accordingly and to attract the widely available VC investments in an early stage.

The rigid finance market in CMEs provides start-ups with less shared capital because of the more insider nature of the finance system with public pensions. Start-ups in CMEs are expected to make use of financial capital based on the less risky long-term investment opportunities or VC firms are owned by financial corporations (Bruton et al., 2010). This insider system is expected to be bound to higher equity rates or lower levels of initial investment, due to risk-averse behavior and more strict regulated tax system. The attraction of external finance for start-ups via VCs is therefore expected to be delayed in the venture creation process.

The finance market in MMEs is controlled by the state, fragmented in terms of investment possibilities and is characterized by a scarcity of available venture capital for start-ups (Amable, 2003). Consequently, start-ups are unable to benefit from short-term investments by VCs and have low attraction of potential high-growth firms (Hellmann & Puri, 2002). It is therefore expected that start-up firms in MMEs experience huge barriers in finding external finance in the early stage of their venture creation processes, and are even more delayed in obtaining their external financial resources.

This reasoning leads to the following hypotheses:

H3: Finance market institutions influence the moment and the amount in which finance is acquired by start-up firms.

H3a: The flexible finance market institutions of LMEs imply that external finance is obtained in an early stage of the venture creation process with relatively high amounts of VC investments.

H3b: The rigid finance market institutions of CME imply that external finance is obtained at a later stage in the venture creation process with relatively low amounts of VC investments.

H3c: The highly fragmented finance market institutions of MMEs imply that external finance is obtained at a very late stage in the venture creation process with very low amounts of VC investments.

3. Methodology

In order to test the above hypotheses, this research uses a qualitative deductive research design, comparing multiple cases. This study makes it possible to explore differences between and within cases By comparing multiple cases in a deductive approach (Yin, 2003). Compared to an inductive approach, which is about developing new theoretical concepts, a deductive approach is primarily used to test theoretical assumptions derived from existing theory (Bryman, 2008). Doing qualitative research is also deemed to be very useful when investigating deep and complex problems (Bryman, 2008), which is in line with the research framework. A deductive comparative design with a qualitative approach requires a careful selection of cases.

3.1. Case Selection & Unit of Analysis

Consequently, this research compares start-up processes perceived by incubators and accelerators in three countries with ideal-typical institutionalized economies aligned with the VoC theory: the United Kingdom, Germany and Spain. The United Kingdom and Germany are, respectively, ideal typical LMEs and CMEs and are repetitively chosen as a case example in previous studies (e.g. Hall & Soskice, 2001; Menz, 2011; Thelen, 2004). Spain is being used as an ideal typical MME according to the work of Molina & Rhodes (2005).

In cross-national comparisons it is important to hold the broad regulatory environment constant in order to prevent uncontrolled factors influencing the relation under investigation (Bryman, 2008). The selection of these three economies makes it possible to hold the broader EU regulatory environment that might influence the timing of start-up processes (such as IP regulation, EU membership¹, openness to international markets) constant. Start-ups in the EU the regulatory environment are, for example, all similarly able to benefit from open borders with relatively easy international job and education opportunities.

Within each country of the research sample, start-up processes were studied taking place in incubators and accelerators. The study of venture creation processes in these start-up aid organizations are most insightful, because they provide systematic insights into the formation phase of companies and its institutional determinants across countries. Furthermore, this research focus makes it possible to control for non-institutional determinants of venture creation processes: start-ups tend to differ in their venture creation processes depending on the industry in which they are active (Hackett & Dilts, 2004) or on the product/service they develop (Stam et al., 2007). The incubators and accelerators were also systematically selected (place in most vibrant entrepreneurship community), which – in all three countries – coincides with the capital. This makes it possible to control for explanations of access to infrastructure: new technology standards, financing mechanisms, pool of competent labor, manufacturing mechanisms, marketing, logistics (Van De Ven, 1993) and access to tangible and intangible services: office building, managerial knowledge, legal support (Cohen, 2006).

A variety of incubators and accelerators in these three countries have been selected so that they would be comparable in size, industry scope and different affiliated organizations. This deems to be important in eliminating other influences explaining the relation under investigation. Eventually, the research sample contains of 7 out of 35 start-up aid organizations in Madrid (Spain), 8 out of 43 start-up aid organizations in London (UK) and 5 out of 26 start-up aid organizations in Berlin (Germany) and can be found in Appendix B.

To illustrate the degree to which these case-study findings can be generalized to the broader economy, this paper presents macro-level evidence on systematic differences of start-up processes across countries. More concretely, aggregate country-indicators on labor and finance are compared, illustrating the extent to which the incubator/accelerator-related findings are applicable across the economy.

¹ In the time of conducting this research, the UK was still part of the European Union.

3.2. Data collection

The research sample stem from two data sources and is gathered to test the hypotheses:

- 1) Data at micro level: *Interviews with managers from accelerators in the ideal-typical VoC countries Spain, the UK and Germany.*

Data is collected through face-to-face interviews and skype interviews with managers from the start-up aid organizations across the three market economies. The data contains insights on the type of advice that these organizations provide to start-up firms regarding start-up team growth and external finance acquisition. The advice that these start-up aid organizations give in channeling start-up firms' behavior is seen as a representation of the actual behavior and activities that start-up firms perform, resulting from the regulatory environment.

Collecting data through interviews is, in general, a sufficient tool to gather in-depth data in a qualitative research design because it emphasizes what the interviewees deem most important (Bryman, 2008). The interviews are conducted using a semi-structured approach because semi-structured interviews allow for comparison between cases by asking similar interview questions, while allowing for the necessary flexibility because questions are not necessarily asked in a specific order (Bryman, 2008). The questionnaire can be found in Appendix A of this paper.

- 2) Data at macro level: *Aggregate data on different types of entrepreneurship and their formation processes, gathered from country level indicators.* Macro-level indicators to support the case-study findings are found for finance and labor, but also on growth in order to find evidence on different growth paths across the case studies.

The macro-level indicators for finance are: *The availability and amount of venture capital.* The indicators for labor are: *The strictness of employment protection and hiring and firing practices.* Some types of labor contracts or investment types are more suitable for venture creation over time in particular market economies than others. Therefore, the differences in these finance and labor indicators are useful to provide extra evidence on the different institutionalized behavior by start-ups in acquiring finance and settling labor contracts.

The growth indicator is *high growth "gazelles"* and is chosen to indicate the different growth paths due to different market economy typologies. The high-growth gazelles indicator is established by combining the percentage of high growth companies of the total company population and standardized with the gazelle company conditions (expected growth of <50%).

Four different data sources have been used to collect these data indicators for both triangulation and due to a lack of consistent data of only one data source. Importantly, this paper uses same sources across countries so that the data is internationally comparable. First the OECD database provides in entrepreneurship data on country level in their "Entrepreneurship at glance reports". These reports measure, amongst others, the state of entrepreneurship regarding labor and finance across countries produced by the OECD-Eurostat Entrepreneurship Indicators Programme (OECD, 2016). Second, the Global Competitive Report (GCR) ranks the world's nations according to the Global Competitiveness Index. The report is based on the latest theoretical and empirical research from the Executive Opinion Survey (EOS) and publicly available sources such as the United Nations (GCR, 2016). This data provides insights in the

broad national institutional environment that can be on influence on labor and finance acquisition across countries. Third, the Global Entrepreneurship & Development Index (GEDI) is used to acquire additional entrepreneurship data. The GEDI is based on analysis of comprehensive data sets from more than 120 countries with data on entrepreneurial attitudes, aspirations, and activity (GEDI, 2016). Fourth, the Data World Bank provides statistical data on global development data, including statistical data on start-up registration time and numbers of start-ups per year (World Data Bank, 2016).

3.3. Analytical Approach / Method

The data from the conducted interviews are qualitatively evaluated and coded based on systematic comparisons across cases. Systematic comparisons are applied through comparing cases based on Mill's method of difference in order to analyze the collected data. In Mill's method of difference, two or more cases are selected that are similar in relevant indicators, but differ in the outcome and the indicator that tries to explain the outcome (the independent variable) (Hancké, 2009). Due to the fact that every indicator is constant except for the independent variable, only the independent variable can explain the variation in the outcome variable (Hancké, 2009). In the context of this research, the differences in timing of behavior of start-ups regarding hiring external labor forces and acquiring external finance in CMEs, LMEs and MMEs are the dependent variables. The independent variables for finance are: the availability and the amount of venture capital. The independent variables for labor are: the extent of employment protection and general hiring and firing practices.

4. Analyses and Findings

When addressing the two key input-factors of venture creation processes of start-ups in the interview rounds, clear differences are found as to *when* and *how* institutions start to influence venture creation processes. Figure 1 provides a schematic overview of the qualitative results obtained from the interviews. It scales acquiring external finance, acquiring external labor over three different time dimension stages of the venture creation process over time, in order to visualize the different moments in which institutions start to impact upon start-up firms. The results highlight the institutions and regulations that influence the moment in which startups involve external financial shareholders and hire employees.

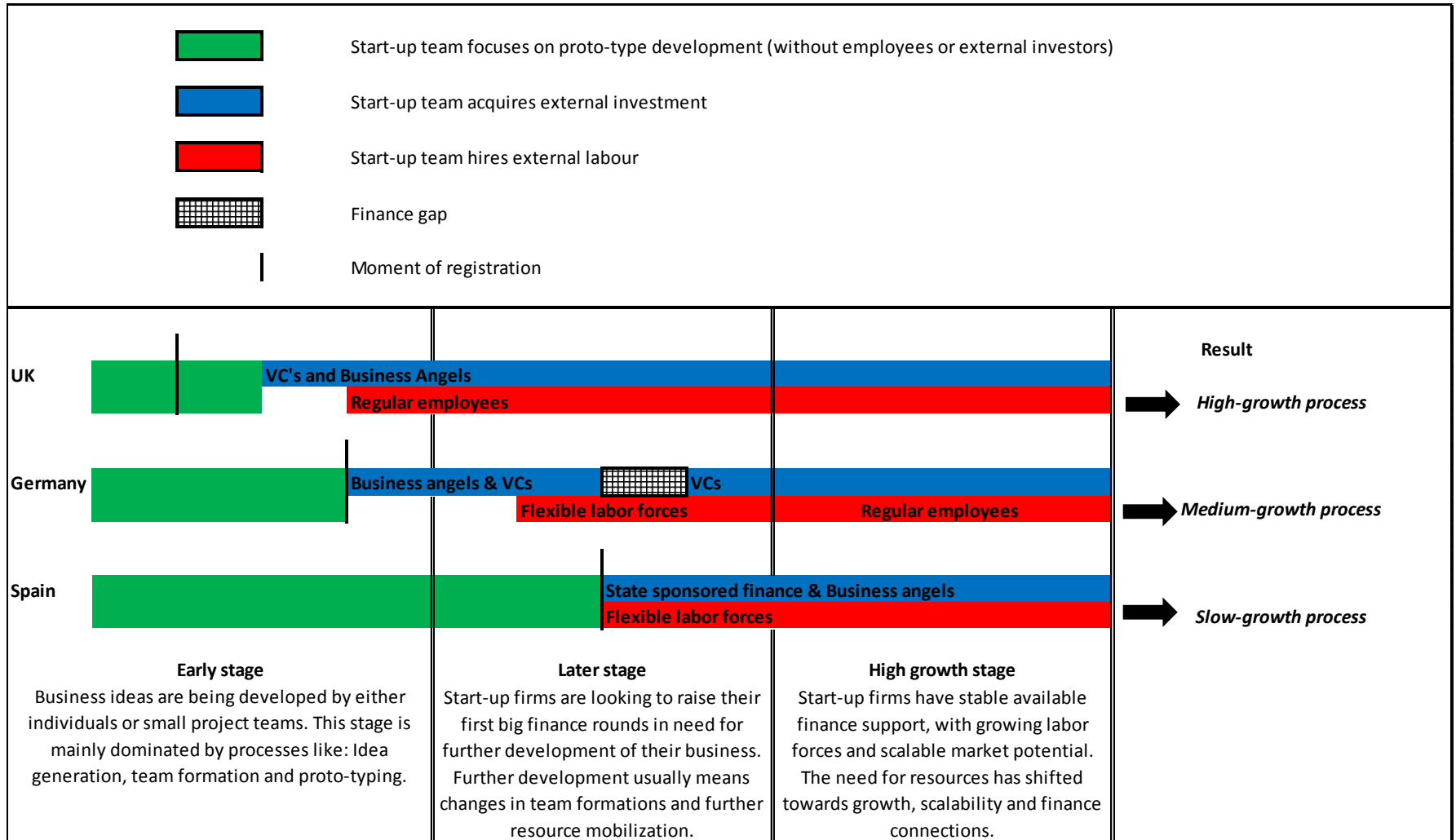


Figure 1. Schematic overview of qualitative results obtained from the interviews

4.1 Institutions over time

Certain regulatory and bureaucratic layers are highlighted by the interviewees as important factor influencing start-up development, but differently situated across countries. First, UK start-ups have a very limited list of regulatory requirements in starting up a business according to the “2006 companies act” (Gov.UK, 2006). Start-up are, for example, not required to use a third party agents, just pay £15 as online registration costs and finish their registration in one afternoon (World Data Bank, 2016). German start-ups, in contrast are required to pay several registration fees (≈€650) according to the “Act on Modernization of Cost Rules” and are required to apply and pay for registration via public notary agencies (BGBL, 2013). In general there are many more different agencies needed in order to set up a business, compared to the UK, which is perceived as problematic in start-up development over time as pointed out by these German interviewees:

“There are too many bureaucratic layers, that is why start-up founders sometimes don’t exactly know how to start their business” (AG2).

“In the UK setting up a business is not a pain in the ass as it is here in Germany” (AG1).

Spanish start-ups are required to comply to public notary agencies as well, with even higher registration fees, and are required to the payment of municipal tax at a financial agency (≈€1200 in total) (World Data Bank, 2016). These barriers are though and lead to postponement of officially registering Spanish start-up firms.

Additional evidence on macro-level is provided in Table 1 and shows that for UK start-ups the registering process to legally operate a business is by far the fastest and cheapest. This additional data provides evidence on differences in efficiency and flexibility on entrepreneurial processes across countries over time.

Table 1. Business registration process (Data World bank, 2016)

| Registration hurdles in starting up a business | | | |
|---|---------------------|---------------|--|
| 2016 | # procedures | # days | Start-up costs (% of income per capita) |
| United Kingdom | 4 | 4.5 | 0.1 |
| Germany | 9 | 10.5 | 1.9 |
| Spain | 7 | 13.0 | 5.0 |

As a result of these different institutions, official start-up registration processes takes place differently across the cases indicated in Figure 1 as well. The official registration moment is therefore seen as a moment in which institutions start to matter and where start-ups begin to look different.

It seems clear that typical regulations can make it advantageous or disadvantageous to involve external finance and hire employees. Entrepreneurs in Spain abstain as long as possible from accepting external finance due to tax implications and investment restrictions. In the UK, the opposite is the case where tax

reliefs stimulate involving external investors in financing start-ups. The same goes for labor: The rigid and overprotective labor market in, respectively, Germany and Spain steers start-ups to rely on flexible workforces (interns, freelancers, volunteers) in order to avoid hiring employees on rigid labor contracts. In the UK, involving external labor is loosely regulated with flexible labor contracts and does not prevent start-ups to engage in hiring external labor forces.

Until start-ups are willing to face collective action problems by acquiring external shareholder finance or hiring external labor, they develop in a very similar way: They focus on the development of their prototype financed through the personal funds of the founders (FFF) without additional labor forces. Start-ups only start to look different by entering a different growth path once they 'accept' external finance, are eligible to hire external labor forces and bear the consequences of official registration. The finance market institutions then starts to shape investor-start-up relations and the labor market institutions starts to shape employer-employee relations.

Hence, institutions start to influence venture creation as soon as they contribute to solving collection action problems related to finance and labor, and make start-ups grow apart over time. Hypothesis 1 can therefore be confirmed.

4.2 Institutions over time – Labor market

Regarding labor market regulations, contract conditions and employment protection regulations are perceived as most influential in start-up development processes. There are no institutional or bureaucratic rules in the UK that hinder newly created ventures in growing their labor forces. The flexible labor market of the UK is instead characterized with allowing labor contracts such as "Zero hour contracts". These types of contracts are used by UK start-ups where start-ups are able to contract workers but are not obliged to offer regular work (Brinkley, 2013). Workers are also not obliged to accept provided work, and as a result start-ups are able to decide the amount of work and the working hours for their labor forces and UK firms are therefore paying the lowest non-wage costs per employee. Moreover, flexible labor contractors like freelancers are allowed to apply for various tax reliefs based on different types of expenditures and situations related with the business (Gov.UK, 2016). UK freelancers are, for example, allowed to claim tax back when they work from home on a regular basis where they make use of private resources for their business. These flexible regulations are therefore beneficial for the start-up team growth as pointed out by all UK start-up aid organizations and summarized by the following quotes:

"Labor contracting is mostly autonomously arranged by the start-up firms themselves, without any help from us." (AU2)

"Our start-ups mostly engage with easy and loose contracts for new employees for a period of two years without strict obligatory rules." (AU5).

UK start-ups as a result are involved with hiring external labor in an early stage due to the, before mentioned, loose labor contract conditions and registration process. Therefore, hypothesis H2a can be confirmed and is this early stage external labor involvement indicated with the red bar in Figure 1, that starts off already in the early stage of the venture creation process.

Regarding the German market, setting up labor contract is by almost all of the German interviewees seen as a burden to start-up team formation due to the rigid labor market with high levels of bureaucracy. Some

examples are the legal requirements that come with the employment contract between a worker and an employer (Brown, 2014; Tieden & Partners, 2017): Without a good reason, an employee cannot be fired and the employer is required to provide a written announcement of termination of the contracts up to seven months before the termination (the German Protection against Unfair Dismissals Act).

The Minimum Wage Act of 2015 is another perceived burden to start-up formations. The law introduced a relatively high minimum wage of €8.50/hour for all German workers and employees. Start-ups are considered as firms with limited financial resources and therefore introducing a minimum wage is seen as barrier for start-up team formation. This was pointed out by a German manager as well:

“The minimum wage that has been introduced last year is yet another layer of bureaucracy, which is not in favor of start-ups. We make very sure that start-up founders are known with all the conditions when hiring people on a minimum wage.” (AG1).

However, for firms with less than 10 fulltime employees specific hire and fire rules apply where employees can be fired more easily, but start-ups would be still required to provide the minimum wage to their workers.

Freelance agreements would obviously be a common way to avoid the stringent firing rules, though in Germany freelancer contracts are treated as an employment agreement allowed to work for just one main contractor where 5/6th of the turnover should be provided by one client. This one client is then also required to provide half of the contributions towards unemployment insurance, pension etc. (BMWl, 2017). Thus start-ups that are involved in these freelancer contracts should make sure that “their” freelancers work for another employer as main contractor to avoid these typical regulations and costs. These freelancer issues are also pointed out by the interviewees: *“Even working with flexible workers like freelancers can be tricky and are difficult to set up” (AG2).*

This strict regulatory and bureaucratic environment in labor employment is reflected by the type of advice that accelerators provide to their start-ups, as pointed out by a German accelerator manager: *“We provide extensive advice on labor contracts because in Germany there is an overprotective and regulated environment when it comes to setting up any type of labor contract” (AG1).*

To conclude, German start-ups are forced to work with flexible labor contracts and/or are involved with hiring regular external labor in a later stage due to the previously mentioned rigid contract conditions. Therefore, hypothesis H2b can be confirmed and is this later stage external labor involvement indicated with the red bar in Figure 1 that starts off already in a later stage of the venture creation process.

The Spanish hiring and firing practices are tougher than in both Germany and the UK: First, firms are required by law to pay fired employees a percentage of the amount of time that they've been working (20 salary days per year that this person has worked). Second, social security payments are extremely high for employers in order to protect the wages of employees and form a big issue when employing staff. Both employers and employees are required to pay social security payments where: 40% of the salary is contributed to social security by the employer and 6.4% is contributed to social security by the employees²

² In contrast, social security payments in Germany are for both employers and employees around 19% of the employees' salaries (FMLSA, 2016).

(Bacaria et al.,). Consequently, start-ups are not able to comply with these high financial contributions where Spanish managers points out that they advise start-ups to be very cautious with hiring employees:

“Due to strict firing practices, we tell them that they specifically have to wait with hiring people until their budget is big enough”. (AS2 & AS3)

These legal requirements for firing are possibly fueled by the high unemployment rate in the Spanish economy and delay the number of people employed by start-ups. A common strategy by Spanish start-ups in order to prevent being involved with these labor contracts, is to work with flexible labor forces as long as possible before officially hiring employees. This is also supported by the fact that a third of the Spanish labor market consists of temporary contracts of which 91.7% of the Spanish workers are on these temporary contract because they cannot find permanent positions (Jaumotte, 2011; SIM Europe, 2015). Also, specific types of temporal contracts that apply for freelancers on a project basis exists, with a specific start and end period. The terms and conditions for these contracts, however, seem to be a bit ambiguous as pointed out by this Spanish accelerator manager:

“The temporal contracts on project basis are difficult to establish for start-up firms because there is usually not a specific project that ends at a specific date. There are ways to form these contracts with an open-end project date, but that requires big risk that not many start-up firms dare to take.” (AS1)

Another reason influencing the employment environment in Spain is that the Spanish government rather devotes money to employment subsidies than to education and training as other European countries do (Jaumotte, 2011). That can be seen as a typical (over)protective measure in the short-term, where the long-term skill sets of workers are underinvested.

To conclude, Spanish start-ups are primarily relying on flexible labor forces and delayed with involving external labor in their development process in hiring regular employees at a very late stage. This conforms hypothesis H2c and is indicated in Figure 1 with the red bar that starts at a late stage.

Table 2 shows the macro-level results regarding labor market regulation provided by the OECD and the Global Competitive Report. For all indicators Spain scores the highest and thus consists of the strongest regulated and protected employment environment, followed by Germany.

Table 2. Strictness of employment protection: temporary contracts . Source: OECD (2016) and GCR (2015)

| | OECD: Strictness of temporal employment protection over years (Scores 0-6) | | | | GCR: Labor market efficiency in 2015 | |
|-----------------------|--|------|------|------|--------------------------------------|-----------------------|
| | 2010 | 2011 | 2012 | 2013 | Hiring and firing practices rank | Total efficiency rank |
| Spain | 3.00 | 2.56 | 2.69 | 2.56 | 110 | 69 |
| Germany | 1.00 | 1.00 | 1.00 | 1.13 | 43 | 22 |
| United Kingdom | 0.38 | 0.38 | 0.38 | 0.38 | 9 | 5 |

Both micro-level and macro-level results indicate clear evidence on how institutions matter, because they influence start-up team formation differently over time. Both Germany and Spain rely on flexible workforces (interns, freelancers, volunteers) in order to avoid hiring employees on “rigid” labor contracts. Start-up teams look different in the beginning between countries (i.e. founder team only) and start to ‘grow apart’ over time: The more rigid the labor market, the longer start-ups wait with hiring.

4.3 Institutions over time – Finance market

Regarding financial regulations, taxation structures and stage investments are perceived by most interviewees as influential in the moment of involving external finance in start-up development processes. In the UK early involvement of external finance is incentivized by advantageous (Seed) Enterprise Investment Scheme (SEIS & EIS) in the UK regulatory environment. The SEIS provides a 50% tax relief for investors’ income tax on their start-up seed investments on an annual maximum investment of £100,000. The EIS offers tax reliefs of 30% on new company shares with investments up to £1,000,000 (Gov.UK, 2017b). This encourages investors to engage in providing finance for risky start-up projects in an early stage. Consequently, numerous VCs and business angels invest in a very early stage, partly initiated by connections between accelerators and investors; the investors networks of accelerators are useful to establish quick connections between UK start-ups and investors. This emphasizes the deregulated characteristics of the “outsider” UK investment market where external investors dominate the investor market as pointed out by the following quote:

“The government changed the way that investments are being made. Instead of harvesting taxes and doing investments themselves, they let wealthy investors make the investment decisions”. (AU 1 & AU7).

Consequently, UK investors are involved in the early phase of start-up development and therefore hypothesis H3a can be confirmed. The blue bar in Figure 1 for UK start-ups starts off in the early stage accordingly.

The German government implemented a new investment tax regime according to the European Union Directive 2011/61/EU on Alternative Investment Fund Managers (“AIFMD”) (Bauer, Eckl, & Bernau, 2016). This implied the expansion of the German investment tax act by including private equity funds and other “close-end” funds. This stricter regulatory environment for investors in particular led to the exclusion of specific private equity tax incentive schemes available for VCs investing in German start-ups. The increasing tax regulations logically led to agitated responses by accelerator managers accordingly:

“The German government does anything in its power to let everyone pay as much taxes as you can, which is also the case for the entrepreneurial ecosystem”(AG1)

An act for the promotion of venture capital participations was repealed in 2013, further straining start-ups (Bauer et al., 2016). The repealed act had been intended to improve the legal framework for equity investments in young, innovative and fast growing companies. The biggest reason for repealing the act was the interference with the risk capital guidelines of the EU (Bauer et al., 2016).

Despite the unbeneficial tax schemes, there are rules under the German Income Tax Act (EStG) which can lead to tax exemptions (20%) for shares up to €50,000 for strictly investments in new or innovative companies (Bauer et al., 2016). The German taxation practices are particularly focused on tax reliefs in

early stage seed funding, but later stage (VC) investments are not incentivized which leads to a bigger “finance gap” between early stage and later stage/growth investments (Koellinger, 2008). The German legislation also prioritizes capital preservation where investments may not lead to a reduction of capital stock. This puts pressure on high impact investments by venture capitals and explains why:

1) The levels of investments in German start-ups are relatively low: “...the levels of equity investments are rather low in Germany, compared to the UK for example” (AG2)

2) High-growth investments in the later stage are perceived too risky: “Berlin is perfect for start-up investments but we can’t compete with London for growth investments” (AG5).

A German accelerator manager summarizes the regulatory constraints of a lack of tax exemptions for bigger shares in a later stage as follows:

“Regarding business angels in early stage, I think it’s here in Berlin easier to obtain money than anywhere else in Europe, but at a later stage the conditions are getting more complicated as further down the investment road and bigger investors start making bigger claims or alterations to standard terms” (AG1)

These institutions imply that German start-ups are suffering from a finance gap between early and later stage because they are delayed in involving external financiers in the later stage of their start-up development process. Hypothesis H3c will therefore not fully be confirmed since involving external financiers in an early stage does not differ as much between the UK and Germany. The lack of later stage investment incentives though, makes that the finance gap for German start-ups between new stages of investments is big.

Despite a tax reduction of 15% for newly-formed businesses, in Spain there are no regulations in place that exempt start-ups from VAT below a certain threshold (AHK, 2015), as is the case for low incomes by start-ups in Germany and the UK³. This means that it is imperative for Spanish start-ups to have investment funds available continuously in order to afford the tax contributions. The consequences are that Spanish start-ups are advised to delay external finances until they have stable financial conditions as pointed out by this Spanish interviewee:

“In order to be able to accept money, you already have to be constituted and pay taxes without benefits. So the typical advice that we give is to don’t accept money unless you think you know that money will be continuously available”. (AS2)

A new law in the Spanish financial market (“Ley de Emprendedores”) slightly improved the situation for start-ups with tax reliefs for seed investors but also created regulatory “speed bumps” with removing tax exemptions for stock options (sharing capital) and capital gains tax for change of residency (exit tax) (Cameron, 2016). Consequently, early start-up investing is difficult for larger investment shares by VCs where the government is an important (co-)investor. This is characterized by the lack of VCs and main dominated by public government funding:

³ UK start-ups are exempt from VAT with a threshold of £83,000 (Gov.UK, 2016) and German start-ups are exempt from VAT with a threshold of €17,500 with expectation not to exceed €50,000 in the current year.

“90% of our start-ups apply for ‘Enisa’, which is a public organization providing start-ups with loans between 25k-75k” (AS3).

Combining the negative taxation conditions of Spanish start-ups and the lack of trust in venture capital investment as reason why there is a high supply of financial government aid, form therefore the main reasons why involving external financiers is as delayed as indicated in Figure 1. Hypothesis H3c can therefore be confirmed.

Macro level data on finance market is shown in Table 3 with equally sized VC investment in the early stage in both the United Kingdom and Germany. This means that there is less of a difference in finance provision for start-ups in the early stage as expected. Interestingly, the extent of VC investments in later stages is very different across the three cases because British VC investments are significantly higher in the later stage than Spain and Germany. This means that Germany especially cannot follow up with their investments in later development stages, which is in line with the earlier found evidence on the rigid finance market for later stage investments indicated by the “finance gap”; start-ups grow apart after the early stage investments. Spain follows last with the lowest VC investments as expected by hypothesis H3c and found by the empirical findings.

Table 3. Macro level results on the finance market across countries

| 2014 | Start-up early stage | Later stage venture | VC availability |
|----------------|----------------------|---------------------|-----------------|
| | Million USD | Million USD | Score (1-6) |
| United Kingdom | \$658 | \$408 | 3.6 |
| Germany | \$547 | \$169 | 3.4 |
| Spain | \$78.4 | \$53.6 | 2.3 |
| 2015 | | | |
| United Kingdom | \$555 | \$351.8 | 3.9 |
| Germany | \$557 | \$174.3 | 3.5 |
| Spain | \$86.8 | \$80.4 | 2.7 |

The GCR results on VC availability in Table 3 as well show similar (almost) equal results as the actual numbers by the OECD and thus shows similar results as found by the empirical results. The macro-level results on finance in Table 3 also do not fully support the hypothesis on the influence of institutions on the finance market (H3b), but are in line with the empirical findings.

Having established when and how institutions start to matter, additional evidence is found on start-ups entering different growth paths. As the theory stated and the empirical results pointed out, the UK has a high-growth pattern based on its beneficial institutionalized financial and labor environment. Germany follows second with a medium-growth path and Spain with a slow-growth path. These different growth patterns are supported by the Global Entrepreneurship Index accordingly: for both 2015 and 2016 the reports ranks the UK first, followed by Germany and then Spain. More specifically, their indicator for high-growth in entrepreneurship is similarly ranked as shown in Table 4. The high-growth gazelles indicator is

established by combining the percentage of high growth companies of the total company population and standardized with the gazelle company conditions (expected growth of <50%).

Table 4. High growth gazelles (GEDI 2015 & 2016)

| | 2015 | 2016 | Trend |
|----------------|-------|-------|--------|
| United Kingdom | 0.670 | 0.741 | +0.070 |
| Germany | 0.610 | 0.607 | -0.003 |
| Spain | 0.320 | 0.269 | -0.049 |

5. Conclusions & Discussion

This paper discussed the influence of national institutions over time on the venture creation process of start-up firms in Germany, Spain and the United Kingdom. Institutions are found to matter as soon as they contribute in solving collective actions problems between start-up firms and external actors. Based on the specific national conditions, institutions determine how and when important input factors for venture creation activities take place. Institutions determine the moment when start-up firms (can) opt for finance and labor force acquisition as well as the type and availability of finance and the type of labor contracts applicable for start-ups (the “how”). Institutions influence the type of external relations on labor and finance that start-ups seek in solving their collective action problems.

Finance is a key factor to venture creation as well as to the operation of incumbent firms in both the entrepreneurship literature and the VoC literature. Entrepreneurs benefit from positive investment schemes (EIS & SEIS) with tax reliefs and in turn match the interests between start-up firms and investors. This makes finance more easily available and leads to VC investments at an early stage particularly because the risk of these investments is minimized by the positive investment schemes. When these regulatory measures are not in place other types of finance appear to be available for start-up firms (e.g. state-sponsored capital and business angels). The amount of capital contributed by these types of finance is significantly lower than capital provided by VCs and results in low-growth paths such as in MMEs. The medium and higher growth paths in respectively CMEs and LMEs benefit from either specialized tax measures for entrepreneurs and financiers, or simply the availability of finance in the early stage. Start-ups in CMEs lack the transition of investments between the early and later stage as indicated by the finance gap, whereas start-ups in LMEs benefit from the continuously available VC funds. Taking financial providers for start-ups into account, it can be concluded that the type and availability of finance is influenced by how and when a start-up firm engages with external financial providers.

Labor is another key factor in both the entrepreneurship literature and the VoC literature. A start-up’s team growth process is influenced by the strictness of regulations on employee protection and the conditions for temporal contracting. Strict employee protection makes it hard to fire employees from a start-up without bearing a substantial financial loss. Other financial barriers are seen as hurdles for entrepreneurship, particularly in MMEs and CMEs, due to a lack of tax benefits. This makes it hard to grow start-up teams and gaining full-time labor forces with the responsibilities of a real entrepreneur, despite the help of accelerators and incubators. Temporal contracting, interns or volunteers are commonly used forms of labor for start-ups in more regulated labor markets, but can be seen as a disadvantage in terms of labor productivity because they lack a full commitment and willingness to invest in firm-specific skills

(Machikita & Sato, 2016). Fully solving the collective action problems between the start-up firm and new talent is therefore a big task handled differently based on the institutional environments. It may also hamper the team growth processes of start-up firms whereas start-ups in one country can solve their collective action problems regarding labor forces faster and/or more easily.

This paper thus concludes that different institutional environments increasingly lead to different types and availability of finance and labor: the more regulated an economy, the more the 'engagement' with external economic actors (financiers, venture capitalists, structural labor force potentials) is delayed. As a result start-ups grow apart in their venture creation characteristics over time as indicated by the different growth paths of entrepreneurship.

A notable remark about the finance market is that the type of finance provided per stage is quite heterogeneous. This paper used a broad definition of VC investments where VC literature distinguished different stages of investments influencing the development of VC markets and how firms cope with investments each stage (Wright et al., 2005). VC firms are traditionally most of use beginning in the later stage of start-up development (Jeng & Wells, 2000), but their investments can possibly be involved differently across market economies. Possible reasons for this heterogeneous behavior by VCs are possibly be found in how start-ups are protected from high equity rates in VC contracts (Atanasov et al., 2009). This may be the reason why German regulations tend to protect their start-ups more from these contracts, leading to smaller VC investments to overcome the finance gap. How contractual terms are controlled across different market economies may be perceived differently by investors. It would be beneficial in future research to include the typical focus of the investor and the type of contracts because it could reveal differences over time and influence venture creation.

It is also important to note that the influence of institutions on the moment in which start-ups become profitable is not taken into account. Studies about "informal entrepreneurship" indicate, for example, that start-ups can benefit from delaying or fastening their official registration moment and increase firm performance (Engel & Keilbach, 2007). This is partially supported by the advice generally given to Spanish start-ups to postpone their registration because of the negative financial consequences in the Spanish regulatory environment as found in the results of this paper. Postponement of registration, engaging with external financiers and/or labor forces does not necessarily mean that these firms are underperforming in profitability. On the contrary, start-ups that postpone their registration may even outperform those that engage too fast with external actors in a high growth environment. Literature on the fast growth of start-ups indicates that growth management activities are as important in venture creation as obtaining finance and labor (Von Krogh & Cusumano, 2001). This suggests that venture creation also needs a clear guidance of growth, which could differ across market economies and could be a foundation for further research. Additional insights on moment in which start-ups become profitable and/or grow could therefore provide more explanation in how venture creation is influenced by institutions.

6. References

- AHK. (2015). *Spanish Startup Ecosystem*. Retrieved from: http://www.ahk.es/fileadmin/ahk_spanien/AHK_Spanien_neu/04_Dienstleistungen/08_biosphere/01_Marktstudie/AHK-Spanish_Startup_Ecosystem-10_2015_01.pdf
- Amable, B. (2003). *The Diversity of Modern Capitalism*. Oxford University Press on Demand.
- Atanasov, V., Ivanov, V., & Litvak, K. (2012). Does reputation limit opportunistic behavior in the VC industry? Evidence from litigation against VCs. *The Journal of Finance*, 67(6), 2215-2246.
- Bacaria, J., Coll, J., & Sánchez-Montijano, E. (2015). *The Labour Market in Spain : Problems , Challenges and Future Trends*. Policy brief 2015/01
- Baker, D., Glyn, A., Howell, D., & Schmitt, J. (2004). Labor Market Institutions and Unemployment: A critical Assessment of the Cross-country Evidence. *Center for Economic Policy Analysis. Economics Series Working Papers*, 168.
- Barney, J. . (1991). Firm Resources and Sustained Competitive Advantage. *Journal of Management*, 17(1), 99-120..
- Bauer, A., Eckl, P., & Bernau, T. (2016). *Private equity in Germany : market and regulatory overview*. Retrieved from: <http://us.practicallaw.com/5-501-0906?source=relatedcontent>
- Baum, J. a C., & Silverman, B. S. (2004). Picking winners or building them? Alliance, intellectual, and human capital as selection criteria in venture financing and performance of biotechnology startups. *Journal of Business Venturing*, 19(3), 411–436.
- BGBL. (2013). *German Act on Modernization of Cost Rules*. Retrieved from https://www.bgbl.de/xaver/bgbl/start.xav?start=%2F%2F%5B%40attr_id%3D%27bgbl113s2586.pdf%27%5D#__bgbl__%2F%2F%5B%40attr_id%3D%27bgbl113s2586.pdf%27%5D__1485181867346
- BMWi. (2017). *Existenzgründungsportal des BMWi*. Retrieved from: <http://www.existenzgruender.de/DE/Home/inhalt.html>
- Bosch, J., Olsson, H. H., Björk, J., & Ljungblad, J. (2013). The Early Stage Software Startup Development Model: A Framework for Operationalizing Lean Principles in Software Startups. *Lean Enterprise Software and Systems*, 1–15.
- Bosma, N., Van Praag, M., Thurik, R., & De Wit, G. (2004). The Value of Human and Social Capital Investments for the Business Performance of Startups. *Source: Small Business Economics*, 23, 227–236.
- Brander, J. a., Amit, R., & Antweiler, W. (2002). Venture-Capital Syndication: Improved Venture Selection vs. the Value-Added Hypothesis. *Journal of Economics & Management Strategy*, 11(3), 423–452.
- Brinkley, I. (2013). *Flexibility or insecurity ? Exploring the rise in zero hours contracts*. The work foundation, August
- Brown, M. (2014). *German Employment Law*. Retrieved from: <https://www.mayerbrown.com/de/German-Employment-Law/>

- Brush, C. G., Greene, P. G., Hart, M. M., & Haller, H. S. (2001). From initial idea to unique advantage: The entrepreneurial challenge of constructing a resource base. *Academy of Management*, 15(February), 1–19.
- Bruton, G. D., Ahlstrom, D., & Li, H. L. (2010). Institutional theory and entrepreneurship: where are we now and where do we need to move in the future?. *Entrepreneurship theory and practice*, 34(3), 421-440.
- Bryman, A. (2008). *Social Research Methods*.
- Cameron, J. (2016). Spain's startup ecosystem shows big potential. Retrieved from: <http://venturebeat.com/2016/02/20/spains-startup-ecosystem-shows-big-potential/>
- Cassar, G. (2004). The financing of business start-ups. *Journal of Business Venturing*, 19(2), 261–283.
- Cohen, B. (2006). Sustainable valley entrepreneurial ecosystems. *Business Strategy and the Environment*, 15(1), 1–14.
- Davidsson, P., & Henrekson, M. (2002). Determinants of the prevalence of start-ups and high-growth firms. *Small Business Economics*, 19(2), 81–104.
- Davila, A., & Foster, G. (2007). Management Control Systems in Early-Stage Startup. *The Accounting Review*, Vol . 82 , No . 4 pp . 907-937
- Delmar, F., & Shane, S. (2004). Legitimizing first: Organizing activities and the survival of new ventures. *Journal of Business Venturing*, 19(3), 385–410.
- Denis, D. J. (2004). Entrepreneurial finance: An overview of the issues and evidence. *Journal of Corporate Finance*, 10(2), 301–326.
- Elfring, T., & Hulsink, W. (2001). Networks in Entrepreneurship : The Case of High - Technology Firms. *Small Business Economics*, 21(4), 409–422.
- Engel, D., & Keilbach, M. (2007). Firm Level Implications of Early Stage Venture Capital Investment - An Empirical Investigation. *Journal of Empirical Finance*, 14(2), 150–167.
- Estevez-Abe, M., Iversen, T., & Soskice, D. (2001). Social Protection and the Formation of Skills. In *Varieties of Capitalism: The Institutional Foundations of Comparative Advantage* (pp. 145–183).
- Fang, S. (2010). The Strategic Use of International Institutions in Dispute Settlement. *Quarterly Journal of Political Science*, 5(2), 107–131.
- FMLSA. (2016). *German Federal Ministry of Labour and Social Affairs: Social security at glance*. Retrieved from: <http://www.bmas.de/EN/Our-Topics/Labour-Law/labour-law.html;jsessionid=75378AE093E6A53EE4F44D89FDF186DA>
- GCR. (2016). *Global Competitive Report 2013-2016*. Retrieved from: <https://www.weforum.org/reports/the-global-competitiveness-report-2016-2017-1>
- GEDI. (2016). *Global Entrepreneurship & Development Index 2015 and 2016*. Retrieved from: <https://thegedi.org/global-entrepreneurship-and-development-index/>
- Gov.UK. (2006). *Companies act 2006*. Retrieved from <http://www.legislation.gov.uk/ukpga/2006/46/contents>
- Gov.UK. (2016). *Tax relief for employees*. Retrieved from <https://www.gov.uk/tax-relief-for-employees/working-at-home>

- Hackett, S. M., & Dilts, D. M. (2004). A Systematic Review of Business Incubation Research. *The Journal of Technology Transfer*, 29(1), 55-82.
- Hall, P. a., & Gingerich, D. W. (2009). *Varieties of Capitalism and Institutional Complementarities in the Political Economy: An Empirical Analysis*. *British Journal of Political Science* (Vol. 39).
- Hall, P. a., & Soskice, D. (2001). Varieties of Capitalism. *Varieties of Capitalism : The Institutional Foundations of Comparative Advantage*. OUP Oxford
- Hall, P. A., & Thelen, K. (2008). Institutional change in varieties of capitalism. *Socio-Economic Review*, 7, 7–34.
- Hancké, B. (2009). *Intelligent Research Design*. Oxford University Press.
- Hellmann, T., & Puri, M. (2002). Venture Capital and the Professionalization of Start-Up Firms: Empirical Evidence. *The Journal of Finance*, 57(1), 169-197.
- Herrmann, A. M. (2008). *One Political Economy, One Competitive Strategy?: Comparing Pharmaceutical Firms in Germany, Italy, and the UK*. Oxford University Press.
- Howell, C. (2003). Varieties of Capitalism : And Then There Was One ? *Comparative Politics*, 36(1), 103–124.
- Huo, J. (2014). Insider and public information in varieties of capitalism. *Socio-Economic Review*, 12(3), 489–515.
- Jackson, G., & Vitols, S. (1997). Between financial commitment, market liquidity and corporate governance: Occupational pensions in Britain, Germany, Japan and the USA. In B. Ebbinghaus & P. Manow (Eds.), *Comparing welfare capitalism: Social policy and political economy in Europe, Japan and the USA*: 171-189. London: Routledge
- Jaumotte, F. (2011). The Spanish Labor Market in a Cross-Country Perspective. *IMF Working Paper*, 52.
- Jeng, L. a., & Wells, P. C. (2000). The determinants of venture capital funding: evidence across countries. *Journal of Corporate Finance*, 6(3), 241–289.
- Koellinger, P. (2008). Why are some entrepreneurs more innovative than others? *Small Business Economics*, 31(1), 21–37.
- Krueger, N. F., Reilly, M. D., & Carsrud, A. L. (2000). Competing models of entrepreneurial intentions. *Journal of Business Venturing*, 15(5), 411-432.
- Lei-Yu, W., Chun-Ju, W., Cheng-Ping, C., & Lee-Yung, P. (2006). Internal Resources, External Network, and Competitiveness during the growth stage: A Study of Taiwanese High-Tech ventures. *Entrepreneurship Theory and Practice*, 32(3), 529–549.
- Liao, J. (Jon), & Welsch, H. (2008). Patterns of venture gestation process: Exploring the differences between tech and non-tech nascent entrepreneurs. *Journal of High Technology Management Research*, 19(2), 103–113.
- Machikita, T., & Sato, H. (2016). *Temporary Jobs and Globalization*. Institute of developing economies.

- Menz, G. (2011). Employer Preferences for Labour Migration: Exploring “Varieties of Capitalism”-Based Contextual Conditionality in Germany and the United Kingdom. *British Journal of Politics and International Relations*, 13(4), 534–550.
- Molina, Ó., & Rhodes, M. (2005). The Political Economy of Adjustment in Mixed Market Economies : A Study of Spain and Italy. In *Beyond Varieties of Capitalism. Conflicts, Contradictions and Complementarities in the European Economy* (pp. 223 – 252).
- Newman, K. L. (2000). Organizational Transformation during Institutional Upheaval. *Academy of Management Review*, 25(3), 602–619.
- OECD. (2008). *Pension Country Profile: Spain*. Retrieved from: <http://www.oecd.org/finance/private-pensions/42565857.pdf>
- OECD. (2016). *Entrepreneurship at Glance Reports 2011-2016*. Retrieved from: <http://www.oecd.org/std/business-stats/entrepreneurship-at-a-glance-22266941.htm>
- Ostrom, E., & Ahn, T. K. (2007). The Meaning of Social Capital and Its Link to Collective Action. *Research Paper No. 2008-11-04 The*, (October 2007), 1–34.
- Partners, M. T. &. (2017). Germany Employment Law Overview. Retrieved from <https://www.hg.org/article.asp?id=20550>
- Rauch, A., Wiklund, J., Lumpkin, G. T., & Frese, M. (2004). Entrepreneurial Orientation and Business Performance: an Assessment of Past Research and Suggestions for the Future. *Entrepreneurship Theory and Practice*, 1–54.
- Reynolds, P. D. (1997). Who Starts New Firms? Preliminary Explorations of Firms-in-Gestation. *Small Business Economics*. 9(5), 449-462
- SIM Europe. (2015). *The labour market in Spain: Problems, Challenges and Future Trends*. Retrieved from: http://www.social-inclusion-monitor.eu/uploads/tx_itaio_download/EZ_Policy_Brief_SIM_Europe_ENG_2015_01.pdf
- Stam, E., Gibcus, P., Telussa, J., & Garnsey, E. W. (2008). Employment growth of new firms.
- Streeck, W. (2005). Rejoinder: on terminology, functionalism,(historical) institutionalism and liberalization. *Socio-Economic Review*, 3(3), 577–587.
- Taylor, M. Z. (2004). Empirical Evidence Against Varieties of Capitalism’s Theory of Technological Innovation. *International Organization*, 58(03), 601–631.
- Thelen, K. A. (2004). How institutions evolve. Insights from comparative historical analysis. *Comparative Historical Analysis in the Social Sciences*, 208–240.
- Townsend, D. M., & Hart, T. a. (2008). Perceived institutional ambiguity and the choice of organizational form in social entrepreneurial ventures. *Entrepreneurship: Theory and Practice*, 32(4), 685–700.
- Unger, J. M., Rauch, A., Frese, M., & Rosenbusch, N. (2011). Human capital and entrepreneurial success: A meta-analytical review. *Journal of Business Venturing*, 26(3), 341–358.
- Van De Ven, H. (1993). The development of an infrastructure for entrepreneurship. *Journal of Business Venturing*, 8(3), 211–230.

- Vitols, S. (2001). Varieties of Corporate Governance: Comparing Germany and the UK. In *Varieties of Capitalism : The Institutional Foundations of Comparative Advantage* (pp. 337 – 360).
- Williams, C. C., & Kedir, A. M. (2016). Business Registration and Firm Performance: Some Lessons From India. *Journal of Developmental Entrepreneurship*, 21(3)
- World Data Bank. (2016). *The World Data Bank*. Retrieved from:
<http://databank.worldbank.org/data/databases.aspx>
- Wright, M., Pruthi, S., & Lockett, A. (2005). International venture capital research: From cross-country comparisons to crossing borders. *International Journal of Management Reviews*, 7(3), 135–165.
- Zacharakis, A. L., & Meyer, G. D. (2000). The potential of actuarial decision models: can they improve the venture capital investment decision? *Journal of Business Venturing*, 15(4), 323–346.

7. Appendices

7.1 Appendix A – Interview questions

Introduction

I'm writing a research report on venture creation processes for the master program Science and Innovation management at Utrecht University, the Netherlands. The goal of my research report is to investigate the influence of the national regulations on venture creation processes. I'm conducting interviews with incubators and accelerators in three countries: Spain, the UK and Germany in order to compare different national contexts on the type of input factors start-ups perceive in these environments. The interview starts with a couple general questions about your incubator/accelerator and will follow up with more in-depth question on specific types of resources that your incubator offers to start-up firms.

Incubator/accelerator attribute questions

- What is the size of the incubator/accelerator in terms of staff over the last three years?
- What is the number of start-up firms that are incubated over the last three years?
- In which industries are the start-up firms of your incubator/accelerator active the most?

General resource support questions

- What kind of resources does your incubator/accelerator offer to the start-up firms?
- What kind of resources are mostly requested by start-up firms?
- Have you ever experienced a mismatch in what the incubator provides and what start-up firms request regarding the resources needed?
- Does the incubator/accelerator experience changes in the kind of resources needed by your start-up firms over the past three years? If so, which changes?
- Does the size of the start-up firms matter with regard to the resources they need?

Specific resource questions

- *Finance market regulation*
 - What types of finance are mostly made available to support the start-up firms in your incubator?
 - Loans
 - Who are the main providers of loans to your start-up firms?
 - What type of advice do you provide to your start-up firms in obtaining loans?
 - Shareholders/equity/seed capital
 - Who are the main providers of finance by shareholders?
 - What type of advice do you provide to start-up firms in obtaining shareholder capital?
 - Financial resources without return
 - How important are obtaining subsidies and other financial resources without return (e.g. grants, awards)
 - What type of advice do you provide to start-up firms in obtaining subsidies and other financial resources without return (e.g. grants, awards)
 - Does the incubator/accelerator itself provide financial aid to start-up firms? If yes, what types?

- What type of advice does your incubator/accelerator provide regarding financial strategic decisions by your start-up firms?
- *Labor market regulation*
 - What advice do you provide to start-up firms regarding labor contracts/hiring new labor forces?
 - In what areas do your start-up firms request advice related to labor contracts?
 - How easy is it for start-up firms to hire or fire (new) labor forces?
 - What are the main sources for acquiring new labor forces by your start-up firms?
 - Do you perceive national regulatory barriers as barriers in the type of advice you give start-up firms with regard to their labor structures? How?

Remaining:

- Are there any national regulations that influence the way you provide resource support to your start-up firms?

7.2 Appendix B – Start-up aid organization sample

| Country | Name of startup aid organisation | Industry | Affiliation | Equity | Initial Investment | FTE over three years | Age(Years) | Startups over three years | Accelerator length | Respondant |
|---------|---|--------------------|----------------|----------------------|--------------------|----------------------|------------|---------------------------|---------------------|------------|
| Spain | Conector | Telecommunicati | Business | 5-10% | 0 | 2 to 5 | 2 | 70 | 4 months | AS1 |
| Spain | The venture Lab & Area 31 | Broad | University | No | 0 | 2 to 6 | 4 | 150 | 10 weeks | AS2 |
| Spain | European Institute for Entrepreneurship | Broad | Business | 10% | 0 | 6 | 3 | 40 | 7 weeks | AS3 |
| Spain | Top Seeds Lab | Travel & Tech | Business | 10% | 100k | 5 to 4 | 4 | 30 | 5 months | AS4 |
| Spain | Wayra | Telecommunicati | Business | 7-10% | 40k | 3 | 5 | 67 | personalized | AS5 |
| Spain | Social Nest | Social projects | Private | No | 0 | 2 to 6 | 4 | 23 | personalized | AS6 |
| Spain | Demium Games | IT/Games | Business | 15% | 0 | 2 | 1 | 8 | 2 months | AS7 |
| UK | Startupbootcamp - IOT program | IOT & data tech | Business | 6% | 15k | 6 to 10 | 1 | 10 | 3 months | AU1 |
| UK | Bethnal Green Ventures | Health & Educatio | Public-Private | 6% | 15k | 2 to 5 | 4 | 86 | 3 months | AU2 |
| UK | Accelerator | Tech - broad | University | NA | NA | NA | 11 | 90 | 3/4 years | AU3 |
| UK | Barclays Techstars London | Fintech | Business | 6% of 20K | 100K + 20k | 3 | 3 | 32 | 3 months | AU4 |
| UK | Wayra | TIME | Business | 7%-10% | up to 50k | 3 to 7 | 4 | 80 | 9 months | AU5 |
| UK | Winton Labs | Data science | Business | No | 5k to 15k | 2 to 5 | 2 | 13 | 3 months | AU6 |
| UK | Deep Science Ventures | Broad | University | 15% | 30k | 2 | 1 | 0 | 3 months | AU7 |
| UK | Level 39 | Fintech | Business | No | 0 | 2 to 10 | 3 | 300 | NA | AU8 |
| Germany | Berlin Startup academy | Broad | Private | 4% | 25k | 1 | 4 | 22 | 3 months | AG1 |
| Germany | Green Garage | Green-tech | Public-private | Percentage of x-more | 10k + x-more | 2 | 3 | 18 | 18 months | AG2 |
| Germany | Bayer - Colaborator | Biopharma | Business | No | 0 | 2 | 2 | 8 | NA | AG3 |
| Germany | Project Flying elephant | Deep-tech/media | Private | 5-10% | 25k or 50k | 2 to 5 | 2 | 10 | 3 months - 6 months | AG4 |
| Germany | Startupbootcamp - Transportation & Energy | Transportation & I | Business | 6% | 15k | 4 to 6 to 10 | 3 | 29 | 6 months | AG5 |