



Hochschule
Kaiserslautern
University of
Applied Sciences

Betriebswirtschaft
Zweibrücken

Studiengang

International Management and Finance

PO Version 2015

Masterarbeit

How to Support and Stabilize Startups in Europe

Unterstützung und Stabilisierung von Startups in Europa

vorgelegt von

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29. April 2019

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Abstract

It became widely believed that a high rate (up to 95%) of startups fail within the first few years. The high failure rates discourage entrepreneurs from starting a business as they discourage investors from investing in startups which lead to less than optimal economic activities. This master thesis aims to clarify the available statistics on startup failure, address the main reasons for startup failure, define the characteristics of favorable startups ecosystem, assess the current status of the startup ecosystem in Europe, and address the existing gaps and support needs.

Keywords: Startup, failure rate, reasons for business failure, entrepreneurial ecosystem, entrepreneurship indexes, startup support, startup programs, startup policies.

Declaration

I declare that I have prepared and submitted this dissertation independently, I have NOT made payments to third parties for any part of it and I have not submitted it, in whole or in part, in any previous application for a degree.

Furthermore, I took reasonable care to ensure that the work is original, and, to the best of my knowledge, does not breach copyright law, and has not been taken from other sources except where such work has been cited and acknowledged within the text.

Signed  _____

Student Number 873123 _____

Date 24/04/2019 _____

Acknowledgment

I would like to express my gratitude toward my thesis supervisors Dr. Ludger Birkendorf and Dr. Ruben Ascuá for their guidance and continuous support. I would like to thank all the participants of the survey and a special thanks to Michael Wunsch from the management team of the Social Impact Lab in Frankfurt for facilitating the interviews with entrepreneurs. Additionally, I thank all friends who put me in contact with entrepreneurs and people who inspired me along my research path. The accomplishment of this work wouldn't be possible without the received support.

Malda El Chalak



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List of Abbreviations:

BED	Business Employment Dynamics
BLS	The US Bureau of Labor Statistics
BMWI	Federal Ministry of Economics and Technology
CEO	Chief Executive Officer
COSME	Competitiveness of Enterprises and Small and Medium-sized Enterprises
EC	European Commission
EDCi	The European Digital City Index
EFG	Equity Facility for Growth
EIC	European Innovation Council
EIDES	Digital Entrepreneurship Systems
EIP	Entrepreneurship and Innovation Program
EO	Entrepreneurs' Organization
ESG	Startup Grant
ESI	European Structural and Investment
ESIS	European Survey of Information Society
ESM	European Startup Monitor
EU	European Union
FEE	European Federation of Accountants
GDP	Gross Domestic Product
GEDI	Global Entrepreneurship and Development Index
GEI	Global Entrepreneurship Index
GEM	Global Entrepreneurship Monitor
GVCs	Global Value Chains
GZ	Foundation grant
IAB	German Federal Employment Agency
ICT	Information and Communication Technology
IDE	Index of Dynamic Entrepreneurship
IEE	Intelligent Energy – Europe Program
IEF	Index of Economic Freedom
IP	Intellectual Property
IPO	Initial Public Offering
LGF	The Loan Guarantee Facility
NGO	Non-governmental Organization
OECD	The Organization for Economic Cooperation and Development
PAYE	Pay as You Earn
R&D	Research and Development
REDI	Regional Entrepreneurship and Development Index
SBA	Small Business Act for Europe
SEP	Startup Europe Partnership

SME Small and Medium Enterprise
 STI Science Technology Innovation
 VAT Value Added Tax

Country Code									
Country	Code	Country	Code	Country	Code	Country	Code	Country	Code
Austria	BE	Denmark	DK	Hungary	HU	Malta	MT	Slovakia	SK
Belgium	BG	Estonia	EE	Ireland	IE	Netherlands	NL	Slovenia	SI
Bulgaria	HR	Finland	FI	Italy	IT	Norway	NO	Spain	ES
Croatia	CY	France	FR	Latvia	LV	Poland	PL	Sweden	SE
Cyprus	CZ	Germany	DE	Lithuania	LT	Portugal	PT	Switzerland	CH
Czech Republic	AT	Greece	GR	Luxemburg	LU	Romania	RO	Turkey	TR
United Kingdom			UK	United States			US		

1 Chapter One: Introduction:

The global recession stimulates policymakers to promote entrepreneurship as a solution for getting young people into employment and revive the economy. Additionally, the economy witnessed a shift from the 'managed' economy to an 'entrepreneurial' economy in the last decade. Some of the attributes of the entrepreneurial economy are having the knowledge rather than the physical capital as a key driver for economic growth and having individuals rather than large firms lading the knowledge. (Acs, Ortega-Argiles, Komlosi, Szerb, & Autio, 2013) As a result, the importance of entrepreneurship increased and startup business got more attention. The success and the striking growth that some startups achieved brought more brains to the area of academic and professional research to cover this phenomenon.

Alongside the numerous literature that discussed the startup success, there were plenty of publications exposing failure and claiming a very high rate of failure that startup businesses have. The intense of publications of failure and the reputation of some of the issuing bodies created a belief in this claim. This belief is expected to lead to negative consequences as it discourages both entrepreneurs and investors from starting up and investing in new businesses, which will bring economic activities to less than optimal level. Discovering the truth behind the failure rate and the main reasons for failure were my motive to conduct this thesis. However, the aim was on promoting success and addressing the tools that help to decrease the probability of failure and to find ways for facilitating fast business growth.

Most of the business literature discuss small and medium enterprises or entrepreneurship. I faced a great challenge in sorting relevant studies from the ones that have a different scope. I started my thesis with the definitions and clarifications of critical terms. In the second section, I tried to summarize available statistics regarding business failure. The third section aims to explain the factors behind the failure. The fourth section attempts to demonstrate various available supporting tools and the characteristics of the favorable startup ecosystem. The third chapter analyzes the situation in Europe. The analysis is based on comparing the results of different indexes and screening recent policies and programs that should be in place in order to improve the weakest areas in the ecosystem. The fourth chapter aims to validate the thesis-hypothesis which suggests that entrepreneurship indexes help to have an overview picture of the current status, thus they can be used as a guiding tool by entrepreneurs and policymakers. Additionally, innovative entrepreneurs are aware and benefiting from the available startup supporting programs. The study addressed several areas where information is not sufficient and further research is needed.

2 Chapter Two: Literature Review:

2.1 Definitions:

This master thesis has a focus on a startup business. Business literature started to highlight startup business in the last two decades, previously small and medium enterprises or entrepreneurship were the discussed topics. Till this moment, most of the business literature and policy taxonomy have a broader scope than startups. The terms that have been used in business literature were not always defined or clarified properly and, in some cases, they were used interchangeably. For this reason, I think it is valuable to start my thesis by explaining and clarifying the critical terms which I am going to use in my dissertation.

2.1.1 Small Business vs Startup, Start-up, and Scaleup:

This paragraph clarifies the different terms that can be used describing the type of business under the analysis.

The criteria for considering business as small business differ from one country to another. According to the European Commission, a small business has less than fifty employees and generates an annual turnover that does not exceed ten million euros. (European Commission, 2016b)

A startup can be considered as a small business, however, the type of business is different and a startup may grow beyond the definition of small business, while it is still considered as a startup.

The Business Dictionary (2018) defines a startup as an early phase in the enterprise life cycle when the entrepreneur moves from the idea stage to stable operation, structured business and secured income phase. Warby Parker, the CEO of Neil Blumenthal defined a startup as an enterprise that considers solving a problem that doesn't have a clear solution, and where is no guarantee for success. (조아윤, 2015) Wilhelm (2014) put a frame for what a startup is. In his opinion, the company value should be below five hundred million dollars and its annual revenue is less than fifty million dollars, additionally, it employs less than one hundred employees. Blank (2010) differentiated a startup from small business by mentioning that the purpose of a startup is to search for a repeatable and scalable business model applying an agile development. The University of Sydney (2017) addressed the factors that distinguish a startup from a small business as the following: a product type that tends to be new to the market; funding method that seeks venture capital, business angels and crowdfund in order to get rapid source of money to enable rapid business growth; business model that is agile enough for allowing rapid growth; and business mentality that is innovative and market

disrupting. On the other hand, Graham (2012) thinks that the only difference between a small business and a startup is the ability of fast growth regardless of innovation, sector, funding, business model or exit strategy. The definition used by the European Startup Monitor for a startup was a highly innovative business which is active for less than ten years and has a business model that allows it for significant employee and/or sales growth. (Kollmann, Stöckmann, Hensellek, & Kensbock, 2016)

We can conclude that even though the word startup is widely used and understood by business and academic writers and readers, however, there is no one unified definition of it.

The words startup and start-up are not synonymous. Start-up refers to the emergence of a new business (European Union, 2010) regardless of its characteristics whether it is small or large, traditional or innovational. The emergence may be caused by previously existing business in the merging or break up situations for instance. The term start-up is mostly used by statistics bureaus when they refer to rates of new businesses, closed businesses and the duration of business life.

World Economic Forum (2014.a) referred to three phases of the entrepreneurial life cycle: Stand up when attitudes and skills required to mobilize desire and ability are promoted toward creating a scalable venture; Startup when resources are gathered to start up the venture; Scaleup when the venture is able to grow exponentially. Thus, scaleup refers to a later stage of a startup business. It is not clear when a business would not be considered a startup anymore. A scaleup, as it is mentioned in Startup Europe Partnership publication, is a business which solved its startup challenges by validating its business model hypothesis and being ready for exponential growth. (Onetti, 2014) Rocket Space (2018) published that a startup became a scaleup when the following conditions are met: the product has a perfect market fit; team member roles became narrower; the management has less tolerance toward risk; the business has an organized system and onboarding process, and it can provide its investors with more validation than minimum viable product. A report issued by Innovate UK (2017) demonstrated five components of scaleup definition that have the most agreement among 105 investors and 125 businesses that participated in the Ebiquity survey. These components are: commercializing products, proven business model, sustainable growth, more than 20% growth in revenue, and global expansion.

On average only 4% of startups can scaleup. Others either fail in the first years or remain small. Startups with different characteristics scale up at different stages of their life cycle. The majority of startups grow during the first two to three years. The growth can be organic due to internal factors or non-organic as a result of merger or acquisition. Digitalization and participation in global value chains (GVCs) help startups to scale up. (OECD, 2018)

2.1.2 Business Birth vs Entries:

The terms of business birth and business entry are used by statistics bureaus for calculating the rate of new businesses. They refer to the point when the business life starts. This event is considered for calculation of business life and the rate of business failure during a particular number of years.

Business birth refers to a newly created business that started to be active and it generates profit or loss for the first time, additionally, it has employees above a specific threshold. According to the European Communities (2007) "it is the creation of a combination of production factors with the restriction that no other national businesses are involved in the event". (p.34) On the other hand, entry refers to the registration of the business in the business registry with an identification number, regardless of employment and activity status. entries are called start-up as well. Start-up is broader than birth as it includes birth in addition to businesses created from the merger, takes over, split off, and break up. (European Union, 2010)

Considering both definitions, the definition of birth is more problematic when we consider global statistics as it differs from one country to another which makes the comparison across countries is difficult. Start-up definition is clearer as it refers to the moment when the business is registered. Never the less most of statistics consider business birth rather than start-up in order to exclude records of existing businesses that receive a new identity number as a result of events such as a merger.

2.1.3 Failure vs Closure and Death:

The focus of my thesis is on business failure. One way to measure the failure is by business closure or death. Both terms are used in the statistics of business life.

Business closure refers to discontinuous of business so its identification number is removed from the active business register. This can be due to one of these events: break up, merger, take over where the business continues under another entity or it is terminated. (European Communities, 2007)

Business death is the opposite of birth, thus when the business stops its activity or goes under the threshold for a specific period it is considered dead and it does not result from break up, merger, take over and restructured activities. (European Communities, 2007)

As in the situation of business birth and start-up, the term of closure is clearer than death. Never the less death is used in most of statistics to avoid having businesses that continued under another entity within the records of terminated businesses.

Farlex Financial Dictionary (2012, as cited in The Free Dictionary, 2018) defined the business failure as a business which terminated its operation due to the fact that it is unable to generate revenues enough for covering expenses. The business failure event is hard to be defined as failure can be seen as part of the process during the cycle of trial and error. (Salminen, 2012) Some writers consider failure when bankruptcy, others argue that having an undesirable outcome is a failure regardless of whether the business is still active or ceased. Some think that failure refers to only business closure when the outcomes are not satisfactory. Satisfaction is a relative feeling; Thus, a particular result may be satisfactory to some entrepreneurs, still not to others. Startups' founders may interpret failure in different ways and report the same event as a failure or non-failure depending on the case. (Salminen, 2012)

Pretorius has studied various academic literature to demonstrate a clear and universal definition of failure. His work showed several commonly used definitions and criteria in addition to difficulty in differentiating between decline and failure. He concluded that decline can be referred to worse performance according to some financial and nonfinancial indicators; additionally, it may refer to failure in anticipating, avoiding or adapting internal or external pressure that threatens the business survival. On the other hand, business failure refers to severe financial distress; an annual loss for several years in continuous; organizational capital close to zero; closing business with a loss to creditors; bankruptcy or even terminating the business for any reason including deviation from goals and having better investment opportunities. (Pretorius, 2009)

Another study with the aim of defining failure summarized all definitions from different perspectives. Failure from the accounting standpoint refers to the need of business liquidation to avoid additional losses. The legal view of failure refers to compulsory liquidation of business based on the court decision. The economic perspective reflects a deviation from expected or desired results. The strategic approach deals with the misalignment of the organization with environmental realities. The organization perspective indicates to discontinuous of business. While the entrepreneurship approach indicates the cessation of the entrepreneur involvement in the business. (Walsh & Cunningham, 2016)

As a conclusion, there is no one agreed definition for failure. At the same time, most of statistics used business death as an indicator of failure, in spite of the fact that death does not accurately reflect failure.

2.1.4 Survival vs Success:

Success is considered as the opposite of failure. One way to measure success is business survival especially when business death is considered as the measurement for failure.

Survival refers to a business that exists and is active in terms of employment and turnover. Survival is calculated as the period between business birth and death. (European Communities, 2007)

The entrepreneurs' definition of success differs from one person to another. It refers to satisfaction about business performance against goals. These goals may include value adding, profitability, or simply a realization of an idea. (Mielach, 2013) Thus, by definition survival does not always reflect success. Some uncompetitive markets help unsuccessful businesses to stay alive.

As a conclusion failure and success have broad meanings which differ from one person to another. Thus, using some indicators to conclude a failure against success on massive research is not reasonable. Although some surveys are more personal and can catch more of failure/success situations, still they are not totally accurate and neutral as they represent the opinion of the surveyed person that may be different from his / her peers at the enterprise.

2.1.5 Startup Ecosystem vs Macro & Microenvironment:

The word ecosystem is relatively a new term. The first time it has been used in the academic literature was in 1995 for a study on Silicon Valley. (Bahrami, 1995) Afterward, it started to be used in entrepreneurship literature while microenvironment and macro environment are mostly used when the discussion is about SMEs. Here below a description of these terms.

The microenvironment includes suppliers, resellers, customers, competitors (both direct and indirect) and the general public. On the other hand, the macro environment encompasses demographic, economic, natural and physical, technological, political, legal, social and cultural forces. (Oxford College of Marketing, 2018)

A system is an organized set of non-living subsystems that interact to achieve a purpose. Whereas, an ecosystem is a purposeful collaborating network of dynamic interacting living and non-living subsystems that have an ever-changing set of dependencies within a given context. Thus, the entrepreneurial ecosystem is a dynamic interaction between entrepreneurial attitudes, ability, and aspirations that drive the allocation of resources through the creation and operation of new ventures. (Ács, Szerb, & Lloyd, 2018) The entrepreneurial ecosystem approach does not include traditional small businesses. It is connected to innovation and growth-oriented initiatives. It is defined by Spiegel (2017) as a

“combination of social, political, economic, and cultural elements within a region” (p.50) According to Isenberg (2011b) the entrepreneurship ecosystem encompasses hundreds of elements that can be grouped under culture, policies, finance, human capital, market, and infrastructure. It also represents the interconnection of the various entrepreneurial actors including entrepreneurs, venture capitals, business angels, banks, public authorities, agencies, universities, to name a few. (Schuh, et al., 2017)

The terms macro environment and ecosystem may sound similar. Indeed, they have some factors in common. However, the ecosystem represents a part of the macroenvironment which is most influential on startups.

2.2 Startups Failure Rate:

Most of studies and statistics about business failure related failure to business closure, they assumed that closures were due to unsuccessful business ventures. (Stokes & Blackburn, 2002) Based on the articles and reports that I viewed discussing failure and demonstrating high rates. The majority reported higher than 90% of businesses fail during the first five years, most of these articles were not backed up with statistics or analysis. The ones that provided the source of data depended on two types of data: The first source is national business register statistics that consider business birth and death and count the survival period in between these two events. the survival rate is calculated as a percentage of enterprises that survived a period of years to all enterprises created the same years of the creation of survived enterprises. (European Communities, 2007) These statistics consider all businesses regardless of their characteristics so they are broader than startup business definition. The second source is business surveys that consider a small sample of businesses, sometimes with specific characteristics, However, it was not clear to me whether these samples were representative to the whole society considered in the study.

National business registers use different assumptions and methodology of gathering and analyzing data which result in incomparable rates. Eurostat faced a real challenge in harmonizing the national business registers across European Union countries for statistics purposes. The challenge raised from the need to harmonize the definition of units, the coverage of business register, frequency of updates, the characteristics of units that are recorded in the business register, and the quality of business registration information. (European Union, 2010)

The following paragraphs explain some of these challenges as reported by OECD International Comparability of Business Start-up Rates Final Report (Vale, 2006)

Definition of unit: the definition of business is vague. Statistic offices usually use the term legal unit to refer to the main address of the entity with legal or tax obligation and local unit to the physical address of operation. However, some businesses contain more than one local and/or legal units under one management team. This creates complexity on how to consider entries or closure of a unit for such businesses.

Threshold: business birth is considered after meeting an employment threshold that differs from one country to another. In some countries it is one employee, others require at least one for the first year and two for the second year for instance. Sole proprietorship is not included in the statistics of some countries.

Timing: Several startups start in reality months or even years before they meet the requirements to be considered as birth. Similarly, Death requires waiting for a period that may be up to two or three years without activity before considering the business is dead. In another situation, companies need several years to finish the legal procedure of bankruptcy. Moreover, the data may come from sources that take a long time to report an event such as VAT registration data which is used by British statistical business register in the UK. For all the previously mentioned reasons, the statistics include lag from a real-life event that can be longer than a year which distorts the accuracy and comparability of survival period together with the annual rates of business birth, death, and survival.

The frequency of update: in some countries, the data is collected on a quarterly basis, in others, it is collected on annual or even longer than a year basis. When data is collected on a longer time frame, it will not include businesses that started and closed during the period so it will result in lower start-up and exit rates. The US Bureau of Labor Statistics, for example, reported a 40% difference between the annualized start-ups and the sum of start-ups for the four separate quarters.

Coverage: Some parts of the country economy are not considered in the scope of business statistics for start-up and exit. Common examples are public administration, a not-for-profit organization, agriculture, forestry, and fishing. The scope differs from one country to another.

Some of the available statistics are summarized in Table One. They represent different countries, years and they used different definitions and methodology. However, all of them showed a survival rate of five years above 25%. In Europe, only Portugal had a survival rate below 30%. Thus, if we take business death as an indicator of failure then the failure rate is less than 75% for the first five years.

Table Two demonstrates some claimed failure ratio based on surveys or work experience. The first two analyses used biased samples and the source of data for the third and fourth studies is not clear. The first study of European Startup Monitor (ESM) defines startups as a business

with less than ten years. Thus, by definition, the startups who survived more than ten years are not considered startups and not tracked. Tracked businesses tend to be young to fulfill the definition requirement. Hence, it is expected that the rate of business with age above five years is low. The second study was based on a failed startup in Sweden. Therefore, the sample didn't include successful startups. The failure rate demonstrated by this study, would be better interpreted as 86% of failed startups in Sweden, fail in the first five years. Shikhar Ghosh explained that the failure rate is high when we consider goals fulfillments, whereas if we consider bankruptcy as an indicator of failure then the rate is much lower. (Nobel, 2011) The fourth study reflects this statement.

Walsh & Cunningham (2016) demonstrated the outcomes of two studies that reported higher than claimed survival rate. The first study was done by K. Wennberg, J. Wiklund, D. DeTienne, and M. S. Cardon on entrepreneurial exit. They analyzed 1,735 firms started in 1995 and tracked until 2002 in Sweden. Only 31% were under distress sale and liquidation; 34% of them remained in business; the rest were liquidated for other reasons. The second study by Tavares Machado tracked the exit of 35,135 Portuguese start-ups over the period of 2004 to 2009. Distress sale and liquidation rate was 25% and the survival rate was 65%.

45.8% of monitored founders in the ESM declared that they have previously founded at least one venture. Only 5.9% of them reported that the old business was closed due to insolvency. 24% of them ceased the business voluntarily and 65.2% mentioned that the previous business is still running. (Kollmann et al, 2016)

Table One: Survival Rates Statistics

Reference	Source	Identification	Unit	Birth	Death	5 Years Survival Rates	Data Collection	Location	Examined Duration
(Eurostat, 2018) & (European Communities, 2007)	Eurostat Statistics	Enterprise code in the business register	Legal unit	Includes dormant < 2 years	2 years inactive	EU < 50% Countries 25% - 62%	Annually	European Union	5 years
(Genesis Online Datenbank, 2018)	Common New Statistical Information System	Industrial code	Legal unit	Not found	Not found	39.5% - 41.9%	Monthly	Germany	7 years
(Brixy & Grotz, 2007)	German Federal Employment Agency (IAB)	Establishment identification number for pension fund	Legal unit	1 employee at least & dormant < 3 years	3 years without employees	45% - 51%	Annually	West Germany	30 years
(Office for National Statistics, 2018)	VAT & Pay as You Earn (PAYE) Registry	Enterprise the number for VAT % PAYE	Legal unit	New entry	2 years inactive	43.2%	Annually	UK	5 years
(Gonzalez, 2017)	The US Bureau of Labor Statistics (BLS)	Created code for the research	local unit	Positive employment after 0 in the previous quarter	0 employment after positive employment in the last quarter	50% - 55%	Annually	USA	22 years
(Knaup, 2005)	Business Employment Dynamics (BED)	Created code for the research	local unit	Positive employment after 0 in the previous quarter	0 employment after positive employment in the last quarter	4 years: 45%	Quarterly	USA	4 years
(Calvino, Criscuolo, & Menon, 2016)	DynEmp v.2	Enterprise code in business register	Legal unit	New entry	Not given	3 years: 55% -75%	Annually	19 countries	9 years

Table Two: Articles on Survival Rates

Reference	Source	Unit	Sample Size	Failure Rate
(Kollmann et al, 2016)	2nd European Startup Monitor (ESM)	Startups in Europe	2515	5 years: 85%
(Cantamessa, Gatteschi, Perboli, & Rosano, 2018)	Autopsy.io & CB Insights databases	failed startups in Sweden	214	5 years: 86%
(Baeza, 2018)	work experience of Matt Murphy	Startup	Not given	70%
(Nobel, 2011)	work experience of Shikhar Ghosh	Entrepreneurs	Not given	30% - 40% (Inactive) 70% - 80% (Didn't meet projected ROI) 90% - 95% (Didn't meet projection)

We can conclude that the phenomenon of failure is hard to be captured and stated by figures. Many running businesses would be categorized as failed based on some failure definitions. And it is hard to address those businesses as they do not report such situations. Even if management has to report failure, there might be disagreement among managers whether a particular result is considered a failure or not. On the other hand, many successful businesses were closed for reasons other than failure. Some examples are: the founder lost his interest in the business, or wanted to relocate, to take up other responsibilities, or to retire to name just a few. Moreover, most of the demonstrated studies evaluated businesses in general rather than startups. Once we would like to have a study with the startup focus, then we face the challenge of having a unified startup definition. Moreover, none of the statistics considered scaleup phase. Would the startup be considered as a failure if it couldn't scale up within a specific period? Would scaleups remain in the records of survival startups since excluding them may affect the survival rate? These questions still not been discussed or covered by the academic context. In short, there is no sufficient statistics to address the failure rate among startups. This may be a reason that most of the failure articles highlighted the reason for failure and ways to support startups rather than the failure rate.

2.3 Reasons for Startup Failure:

According to Salminen (2012), the theory of failure is missing from the literature and most academics are focusing on helping entrepreneurs to succeed. However, I found several articles and books discussing the failure and addressing the most common reasons for failure. Some of these texts do not explain the background of this information, others depended on empirical studies. The purpose of some text was to group failure reasons while others tried to rank reasons and address most common mistakes.

An online survey on Colombian 324 entrepreneurs who had at least one failure, grouped the failure sources in five categories: Immediate environment including suppliers; customers, competitors and interest groups; Management / venture including motivation, skills and personal characteristics; Organizational characteristics including size, industry, and flexibility; General environment which encompasses economy, politics, technology, and social factors; and Corporate policy that include marketing, personnel, finance. (Martínez & Alfonso, 2015) By reviewing 69 previous pieces of research on failure written during the period of 1984 and 2007, the most recurring factors of failure were: management skills, poor marketing skills, and weak industry expertise. (Berger, 2014) Another study issued in the year 2008 revealed that risk attitude of entrepreneurs influences the survival rate of the business. Additionally, entrepreneurial businesses last longer when the risk attitude of founders is at the medium range rather than being high or low. (Caliendo, Fossen, & Kritikos, 2008)

Walsh and Cunningham reviewed more than 350 previous studies of business failure and concluded that these studies followed five different methodologies: accounting perspective that mainly used large quantitative databases from public companies and used events as bankruptcy as failure indicator with an aim to build a model that predicts failure. The Management approach that mainly used public information both quantitative and qualitative with the aim of depicting the failure stage of companies. The economic view used large quantitative industry database to address the failure trends. The organizational perspective used a small database of quantitative and qualitative information gathered mainly by surveys with the aim to understand the internal cause of failure with the management decision-making process. The entrepreneurship approach also used quantitative and qualitative data with a focus on failure impact and prevention. (Walsh & Cunningham, 2016) Table 3 summarizes studies on the most common reasons for business failure.

Table Three: Reasons for Business Failure

Reference	Background	Top Failure Reasons Ordered from Most to Least Common
(Arnaud, 2018)	Not given	<ul style="list-style-type: none"> Insufficient market demands The market is not ready Unskilled founders Unskilled teams / management Lack of enthusiasm Cash issue Reluctance to get feedback Financing issues Poor marketing Not knowing the customers
(Feinleib, 2012)	Experience in supporting startups	<ul style="list-style-type: none"> Starting with a small market Poor data analysis Wrong assumptions Overspending to reach the market Lack of an underlying wave
(Bednár & Tarišková, 2018)	Analysis of 51 failed startups	<ul style="list-style-type: none"> Financing issues No need for the product Cost issues Unskilled teams/management Underdeveloped business Lack of enthusiasm Get outcompeted
(Fuckedup Startups, 2015)	Fucked-up Startup shows	<ul style="list-style-type: none"> No need for the product Get outcompeted Insufficient market demand Price issues Cost issues Cash issues Undefined breakeven point Unskilled founders Disharmonized teams or investors Unskilled teams/management
(Chauhan, 2017)	Gateway Group expertise	<ul style="list-style-type: none"> No need for the product Cash issues Get outcompeted Poor business model The market is not ready

Reference	Background	Top Failure Reasons Ordered from Most to Least Common
(Martínez & Alfonso, 2015)	Survey on Colombian 324 entrepreneurs	Low returns Issues with strategic plan execution Financing issues Insufficient market demand
(Failure Institute, 2018)	Research on 200 student entrepreneurs in Mexico	Poor strategic planning Poor marketing and market selection Lack of enthusiasm Cash issues Pricing issues Issues with staff Change in market Legal issues Social or safety issues Financing issues
(Gaskill, Auken, & Manning, 1993)	Survey to 245 discontinued business owners	Lack of insight Unskilled teams/management Financing issues
(Cantamessa, Gatteschi, Perboli, & Rosano, 2018)	214 failed startups	Poor business model Underdeveloped business Cash issues
(European Federation of Accountants (FEE), 2004)	Not given	Unskilled teams/management Deficit in accounting Cash issues Financing issues Dependency on customers or suppliers Impending bad debt Overtrading Poor marketing Fraud / collusion Unpredictable events
(CB Insight, 2018b)	Survey on 101 startups	No need for the product Cash issues Unskilled teams/management Get outcompeted Price & Cost issues User unfriendly product Poor business model Poor marketing Ignore customers

Reference	Background	Top Failure Reasons Ordered from Most to Least Common
(CB Insight, 2018a)	Survey on 400 consumer hardware failed startups	<ul style="list-style-type: none"> Insufficient market demand High burn rate Lack of enthusiasm Poor strategic planning Manufacturing setbacks Get outcompeted Barriers to consumer adoption Disharmonized teams or investors Regulatory uncertainty
(Wagner, 2013)	Writer's work experience	<ul style="list-style-type: none"> Not knowing the customer No need for the product Unskilled teams/management Poor business model

The reasons that were mentioned the most in the previous literature are: cash issues, financing issues, unskilled teams/management, no need for the product, get outcompeted. This high frequency of occurring indicates the strong relationship between these factors and failure. This brings us to the conclusion that most of the failure situations were related to weak management including financial management that was not able to handle funding or cash challenges, in addition to the situation where the product didn't solve a customer social need with high value as other competitive products, therefore the demand was lower than expected.

Few of the reviewed studies had a focus on startups and the rest discussed business failure in general or SMEs failure in particular. To some extent, the general business failure factors are applicable to startup as well. However, since startups have some unique characteristics, they are more vulnerable to some events than other businesses. Thus, not all factors are as influential on startups as on general businesses.

An analysis of startup failure published on Fucked-up Startup (2015) shows that 98% of failed companies had a business model failure, 91% of them had a financial failure, and 87% had a management failure. This analysis shows that failure in most of the time is due to several factors at once. Indeed, failure can be due to several internal and external factors where founders may not be able to understand the causality. (Bruno, Leidecker, & Harder, 1987)

Salminen (2012) concluded that all reasons for failure can be categorized under two groups depending on the perspective of the reporter: financial and management. Management can be blamed for any undesirable outcome whether it is internal for example low productivity, or external for instance, low demand. Since a proper planning and risk management will

decrease the probability of unexpected outcomes. Therefore, all factors can be linked to wrong management decisions at particular or several moments. Similarly, all undesirable events will result in undesirable financial outcomes at a particular moment. For example, if the product is not a perfect fit for the customer need then the revenue will be lower than expected and it will end with lower than the planned return on investment, hence some investors will quit. The same can happen if the prepared pitch was not strong enough then it would not attract investors, as a result, founders wouldn't have sufficient capital to scale up and they might cease the business.

Additionally, it is noticeable that failure reasons are communicated in broad categories such as weak product or poor management which make the understanding of the failure and learning from it is hard if it is possible. (Beaver, 2003)

To summarize there are few studies with a focus on startup failure, most of the failure studies addressed general reasons that do not help to learn and to provide solutions. In addition, the failure is most probably due to several factors together where the sequence and causality are not clear and the scenario of each company can differ from the other. Moreover, the business environment is very dynamic that the current major problems may change in the next period. For these reasons, it is hard to address broad solutions to prevent failure. However, we can develop a better business environment where the probability that failure happens is less, and where early recognition of difficulties is possible, and support for companies is provided in a way that companies can recover and turn around. This topic will be discussed in the next section.

2.4 Startup support:

It is argued whether the failure should always be avoided, in spite of the economic and emotional cost of failure, it has a return in terms of learning gains with increased experience and likelihood of success in the next times. (Salminen, 2012) Moreover, Graham and Li (2002, as cited in Salminen, 2012) argued that a high rate of a business start-up combined with a high rate of failure is an indicator of a healthy economy; in contrast to an economy where only traditional businesses exist with risk avoidance and low level of innovation. Isenberg (2010) doubted whether it is better for governments to support entrepreneurs and startups. He argued that free market law encourages entry and survival for the strongest. In a free market, the opportunity for survival and failure is equal. Protecting from failure may weaken the entrepreneurial gene-pool. However, from a social perspective, failure is costly. Thus, most policymakers focus on preventing the possibility that a right venture does not receive support and ignore the possibility of a wrong venture receives support.

Supporting startups can be on three levels: individual level concerning the capabilities of entrepreneurs and their competitiveness; institutional level concerning the support of the

non-governmental organization and private institutions; and governmental level including policies and direct support. The support tools on the individual level include education, training, and networking. To increase the opportunity of success, entrepreneurs can develop their knowledge and skills, seek professional advice and support, cooperate with each other, test their concept on a small level, join events and clubs, adopt new technologies and welcome changes. The tools on the institutional level are business consultancy, technical support, education, and training; networking; funds; analysis; research; assessments; and recommendations for policymakers. As a government, there are more tools to be used for supporting startups, these tools include providing business and technical support; providing education and training; providing subsidies and grants; improve the infrastructure; lowering corruption; modifying policies especially the ones related to public administration, labor, taxes, and bankruptcy. (Ács et al, 2018)

Startups may receive the support of business advice from the Chamber of Industry and Commerce, business incubation centers, employment agencies, networks for startups, startup fairs, and others. They can get financial advice and support in the form of investment and working capital finance, better access to loans, and social securities to unemployed entrepreneurs who want to start up a business. (The Federal Ministry for Economic Affairs and Energy, 2016)

In order to encourage migrants for initiating startups, governments may offer training, regulatory advice, access to business funding and working spaces among other supports. (European Commission, 2016a)

Apparently, there is a broad range of tools that can be applied to support startups. However, the effect of each tool on startups is not equal. Governments do not apply all of the tools at once. policies analysis helps governments to choose which tool to apply, when and how.

2.4.1 Analyzing policies' effect:

There two types of policies for supporting startups: buffering policies aim to provide favorable conditions that reduce startup dependency on external support. These policies are more vital during the seeding phase. Alternatively, the boosting policies aim to increase the startup capability to grow so they are more effective during the scale-up phase. (Roy & Nepelski, 2016) Additionally, policies can target four aspects of the entrepreneurial ecosystem: entrepreneurial actors as they need business advice and funds; entrepreneurial resource providers such as angel business, and venture capital firms where the target is facilitating the access to finance; entrepreneurial connectors including networking organization, entrepreneurship clubs among others; and finally, entrepreneurial orientation through education and entrepreneurship events. (Mason & Brown, 2014)

There is a difference between SME, entrepreneurial and startup policies. Each type of policy is targeting a different group as we clarified in the definition section, the effect can reach other groups, nevertheless, in a different way and impact. Small business policy is 'transactional' while entrepreneurship policy is 'relational' in nature. (Mazzarol, 2014) According to Isenberg (2010), entrepreneurship needs different policies and environments than self-employment and SMEs. Though, governments worldwide still treating them alike. The difference between SME and startup policies is shown in the below table: (Mason & Brown, 2014)

Table Four: SME vs Startup Policy

Respect	SME Policy	Startup Policy
Focus	Specific actors: entrepreneurs, clusters, etc.	The specific type of entrepreneurship, type of clusters, etc.
Time focus	Already existing enterprises *	Future entrepreneurship *
Objective	More entrepreneurs, start-ups, etc.	Startups with higher potential
Target	Developing specific parts of the ecosystem	Connecting components of the ecosystem
Support tools	Direct support through grants, tax incentives, etc.	Indirect support through network building
Attention	R&D and IP protection	Developing an innovation system across all parts of the ecosystem
Policy level	Top-down national level	Regional & local level with a multi-scalar framework

* (Audretsch, 2004)

There is no doubt that policies have an effect on startups, however, it is not always clear how they affect startups; besides, the level of their influence is also ambiguous. Some academic texts discussed the effectiveness and efficiencies of policies as summarized in the below paragraphs.

Legal factors: There is a relation between the creation of new business and legal factors such as “ cost of starting a new business, the procedures to enforce a contract, time to export, time to prepare and pay taxes, paid-in minimum capital, procedure to register a business, procedure to register property, the total tax rate in the commercial profits” as they influence the amount of capital the entrepreneur needs to hold, to start, and run his business. (Trifu, Girneata, & Potcovaru, 2015, p.58)

The effect of several factors on the rate of starting up a business was examined as below: (Klapper, Laeven, & Rajan, 2004)

Regulatory restrictions: the hypothesis was about having a negative correlation between regulatory restrictions and business entry. It can be checked by comparing the average of new entry rate within an industry with actual rates in countries where high bureaucratic restriction to entry exists. The study proved that entry barriers work effectively in countries with a low level of corruption.

Labor laws: it examined the effect of labor laws that prevent a company from firing employees which expected to encourage employees to join small and new businesses. However, it was also expected that businesses would have less flexibility, thus they might under hire to protect against the situation of not being able to fire employees when the economic conditions are not favorable. the study proved that labor protection laws impede new entry in labor sensitive industries.

Patent laws: strong protection would make it difficult for new entries, however, it motivates startups to invest in R&D when they know they would be protected legally. The study shows a higher entry in the R&D field in countries where IP protected better.

Financial system: the study demonstrated a higher entry rate in countries where the financial system is more developed and credit is higher.

Education: I was expected that entry is higher in countries where the workforce is more educated. However, the study found the difference is not statistically significant.

Other factors are mentioned by other research are summarized below.

Retirement benefits: the retirement benefit is expected to attract employees to switch to self-employment as a form of partial retirement. (Parker, 2004)

Entrepreneurial education and training: They have an influence on the perceived opportunities, especially in high-income economies, though their effect on entrepreneurial skills is weak. (Levie, 2008) It was also reported that education supported the entrepreneurial attitude in Europe. However, only 28% of surveyed entrepreneurs think that it helped them being interested in becoming entrepreneurs. (Deloitte, 2013)

Start-up subsidies: OECD (2013b) reported that in Germany the start-up subsidies had a positive influence on survival. After monitoring more than 100,000 participants in this grant until the year 2011, the five-year survival rate of supported individuals was between 60% - 70% which is higher than the overall survival rate.

Interest rates: Parker (2004) claims that higher interest rates increase business costs thus, decrease firm births and increase firm deaths.

One research prepared for doctoral dissertation checked the effect of below factors on startup performance: (Kösters, 2009)

Business support the study revealed that there is no impact of business support provided at the nascent phase on the performance of business measured by employment or credit rating in the first three years.

R&D: contrarily, there is a high positive impact of R&D subsidies on the start-up performance measured by patent activities and employment. However, to ensure the effectiveness and efficiency of R&D subsidies, only projects with high social returns should be supported, thus, projects expected to be privately profitable and, therefore, will be undertaken anyway, should not receive public support.

Start-up subsidies: They include all forms of grants, soft loans and loan guarantee. They have an impact on higher employment growth or startup survival, However, when they are granted to inefficient start-ups, they would distort market selection by giving such start-ups an artificial competitive edge.

The study concluded that providing business support has a target of building a competitive venture, thus it should be provided to everyone without selectivity. On the other hand, funds should be granted to only highly competitive ventures, in this way they would not cause market distortion.

Initial conditions: a study on 118,000 Portuguese firms over the period 1983-1993 revealed that firms which have been created during an economic boom have a higher survival rate. The study concluded that survival is affected by the initial conditions when the business is created such as “firm size, human capital, entry rates and GDP growth”, however, their effect decreases over the time. (Geroski, Mata, & Portuga, 2007) On the other hand, another study done by Gonzalez (2017) used the US Bureau of Labor data between 1994 and 2015. It examined the effect of economic external factors and revealed that factors such as interest rates, GDP growth, number of accelerators and geographical location have no sound influence on survival rates.

Bankruptcy regulations: In his study, Berger (2014) concluded that fear of failure is the main obstacle that people do not engage in entrepreneurship, thus in order to promote entrepreneurship, we have to make failure less scary. He explained that bankruptcy regulations play a critical role in this field and gave an example the law §286 InsO in Germany where it takes six years to live in poverty to get out of bankruptcy. Other researcher confirmed Philipps opinion and added that the prevention of bankruptcy saves most of the firm’s value since restructuring costs are expensive. Hence, a favorable legal framework for insolvency, helps creditors recovering a larger share of the amount due to them at the end of the insolvency process. (World Bank, 2016) The bankruptcy legislation should balance two conflicting interests: protection of creditors and support for entrepreneurs to take up the risk. Bankruptcy legislation covers four phases: prevention, out-of-court settlement, in-court procedures, post-bankruptcy (European Commission, 2011)

Early warning system: Several actions can help to avoid business failure including consultations, proper planning, auditing, and managing risk. Besides, rescue procedures moderate the consequences of failure with rapid and inexpensive legal insolvency procedures, and agreements outside the juridical system. (European Federation of

Accountants (FEE), 2004) Early warning system and financial support provided to startup by the public institution will prevent a considerable number of bankruptcy cases. Additionally, governments may take extraordinary actions, for example, postponing tax payments during periods of general economic distress. Allowing the business to reach a compromise with creditors is for the best interest of all stakeholders, thus, inexpensive and simple procedures of restructuring are important, preferably with minimum publicity of entrepreneur's problem. When an out-of-court solution cannot be obtained, then simplified and lower cost procedures for micro-enterprises should be considered by national legislators. (European Commission, 2011)

Second chance: there should be a difference in legislation treating honest and fraudulent entrepreneurs' failure, in a way that access to finance and future opportunities of honest entrepreneurs shouldn't be restricted. Failed entrepreneurs are discouraged to start a new business due to the discrimination they face after bankruptcy. Therefore, an effective second chance policy is crucial in order to reduce the fear entrepreneurs have in case of negative outcomes. (European Commission, 2011) A second chance means the entrepreneurs, who formerly failed, will re-start their entrepreneurial activities. There is evidence that these entrepreneurs can use their experience and lessons learned so the new businesses grow more rapidly. credit scoring bureaus have analytical models that can serve as a warning system, additionally, these bureaus provide a new credit score for entrepreneurs that want to restart business activities. Thus, they play an important role in prevention and second chance stages. (Wymenga, Gloser, Bezegova, & Besseling, 2014)

Law enforcement: weak contract enforcement has a negative effect on surviving entrants. Seed and early-stage policies are associated with a higher size of entrants with higher post-entry growth. The survival share of start-ups does not seem to be particularly affected by the policy. (Calvino et al, 2016)

Deloitte (2013) has reviewed some policies in terms of efforts needed to implement the policy and the expected impact of it. This analysis helps address the policies with a quick win which can be considered for the short-term from the ones which are more strategic. The results are demonstrated in Table Five.

Despite the attempts of improving the quality of policies, the problems remain as the majority of policies do not have a clear objective, measures, and monitors. (Fischer, Miller, & Sidney, 2007) Assessing the impact of a policy is challenging due to the lack of monitoring data for the situation before and after the implementation of the policy together with a clear measuring tool. Assessing the effect of a group of policies such as labor policies or financial policies is more challenging and can be misleading as some policies in the group may have an influence that counters the others. Never the less the GEM and Eurostat data showed indicators of improvement after the year 2000 with regard to entrepreneurship activities. (Richardson, Curth, Bianchini, & Wukovits, 2015)

Table Five: Efforts & Impact of Policy Application

Policy	Efforts	Impact	Investment
Embedding entrepreneurship in education	High	Low to medium	Strategic
Promoting Erasmus for Young Entrepreneurs	Low	Low	Tactical
Encourage students to start a startup	Low	Low	Tactical
Mentoring and networking platforms	Medium	Medium	Strategic
Relax visa requirements for highly skilled individuals	Medium to high	Low to medium	Tactical
Europe Entrepreneurs Visa Act	High	Low to medium	Strategic
Leverage the national 'Points of Single Contact'	Low	Low to medium	Quick Wins
Open public data initiative	Low to medium	Medium	Quick Wins
Set up actions to facilitate the public procurement of digital innovations developed by SMEs	Medium	Medium to high	Strategic
Reinforcing existing industry clusters	Low to medium	Medium to high	Quick Wins
Monitor the evolution of digital entrepreneurship	Medium	Low	Tactical
Promote the use of existing financial instruments	Low	Medium	Quick Wins
Tax incentives	Medium to high	Medium	Strategic
Implementation of the European Intellectual Property framework	Medium	Low	Tactical
Harmonization of crowdfunding policies	Medium	Low	Tactical

Moreover, the effect of the policy may change from one region to another depending on the region's situation. This predicts a limited effect of one single policy once applied on a wide region. Governments should create a diverse array of supporting programs then build connections between them to make sure they cover the entire entrepreneurial process and they have shared goals and sense of mission which as a result will enhance the ecosystem. A large number of smaller programs are more effective and one institution cannot provide all types of support. This approach is referred to as a bottom-up approach. (Spiegel, 2016) this finding was also supported by a recent study carried by the International Consulting Services Ltd. (Richardson et al, 2015)

Additionally, the evaluation of government intervention and entrepreneurial policy should be based on the economic rationale for intervention based on policies' effectiveness and efficiency. (Kösters, 2009) Isenberg (2011a) thinks that there is a general misuse of financial support when the available fund is just granted rather been used to create a self-sustaining ecosystem. In his opinion, governments should not provide easy money to entrepreneurs in order to ensure they develop toughness and resourcefulness. (Isenberg, 2010) Many of startup supports are not efficient since they are based on the assumption that founders are

doing their business for the first time, whereas studies show the majority of entrepreneurs who failed in the past are motivated to start up again and this group of entrepreneurs is the one who needs support the most. Plus, the type of support given to each group is different. (Stokes & Blackburn, 2002)

Finally, governments policies shouldn't be toward reducing local differences or equally distributed resources rather they should be directed toward regions with high potential and existing competitiveness. (Isenberg, 2011a) Similarly, the government policy shouldn't aim to maximize a certain indicator of entrepreneurship, rather develop the ecosystem, in which productive entrepreneurship can flourish. (Stam, 2015) Developing a favorable ecosystem and continuously enhance it became the target of policymakers rather than increasing the number of entrepreneurs or the survival rate. A favorable startup ecosystem helps startups be more independent, competitive, cooperative, and capable of high growth. Thus, the best startup ecosystem is not the one which has the most entrepreneurs as quality matters more than quantity. (Ács et al, 2018). Isenberg (2011b) wrote "the shortest path to growth is not through national innovation systems, it is not through national competitiveness, it is not through creating a knowledge-based economy, it is not through the creation of economic clusters, and it is not through foreign direct investment. At certain times these economic development strategies certainly play a role, but either (a) a pre-condition to these strategies' success is entrepreneurship; (b) they are a complement to entrepreneurship; (c) if implemented without an ecosystem perspective, they can be detrimental to entrepreneurship. Without entrepreneurs – economic actors – these strategies may lose a lot of their value. The shortest path is through the deliberate and informed cultivation of an entrepreneurship ecosystem." (p. 13) All forms of support provided to startup are at best mildly effective if it is applied in isolation. For that reason, a holistic ecosystem policy is needed. (Isenberg, 2011b)

2.4.2 Favorable startup ecosystem:

The entrepreneurial ecosystems need to evolve from an existing system. The policy should evolve over time to address the needs of a dynamic system. Each entrepreneurial ecosystem is unique, thus there are no standard policies suitable for all ecosystems. Government policies should be developed as holistic and cover all components of the ecosystem, one initiative alone cannot have an effect. both macro and micro-level policy settings need to be configured to help stimulate and sustain the entrepreneurial ecosystem growth. (Mason & Brown, 2014)

Ecosystem development does not only depend on government actions, "the government cannot do everything on its own; the private and non-profit sectors too must shoulder some responsibility. In numerous instances corporate executives, family-business owners, universities, professional organizations, foundations, labor organizations, financiers, and, of

course, entrepreneurs themselves have initiated and even financed entrepreneurship education, conferences, research, and policy advocacy” (Isenberg, 2010, p.42) Mix of policy is likely to have a higher impact on overall performance than focusing on a single policy area. (Ács et al, 2018)

The question is then what are the characteristics of a favorable ecosystem? The following paragraphs represent previous studies that tried to answer this question.

One aspect of a favorable ecosystem is an entrepreneurship culture that encourages trial and risk-taking and considers both success and failure have a positive outcome on societies. This is called Entrepreneurship Knowledge Spillover theory which argues that an environment with more knowledge will generate more entrepreneurial opportunities. (Audretsch, 2006) Isenberg introduced the law of small numbers which means that even one success may inspire the public and stimulate imitators. (Isenberg, 2010) Successful entrepreneurs tend to create or support more new business so they are like “entrepreneurship addicts become angel investors, or advisors, or venture capitalists, or board members, and likely a combination, feeding back their experience and wealth to generate more entrepreneurship. They become public speakers or guest lecturers inspiring others to follow in their footsteps. They lobby the government for reform. In sufficient quantities, these activities leave a region indelibly imprinted.” (Isenberg, 2011b, p.5) According to Isenberg (2010), it is possible to alter social norms about entrepreneurship in less than a generation and media can play an important role in this regard. Positive entrepreneurial culture may be induced by governments when it over-celebrates success also through media.

Another aspect is easy to access to resources. One of the challenges startups face is access to talented and skillful employees. Another challenge is accessing funds for growth. (Startup Hubs Europe, 2018a) Accessing finance is a major challenge for startups. They cannot get traditional loans easily due to their recent history, besides, their business model that relies on intangibles. Access to human resources is another challenge as the most qualified employees seek reputable large companies. Besides, employment legislation plays an important role. There is evidence that stricter employment protection legislation leads to slower firm growth in sectors which are more labor-intensive. Additionally, effective contract enforcement and civil justice system support firm growth (OECD, 2018)

It is believed that entrepreneurship flourishes in a free economic environment where companies can freely enter and compete. By comparing entrepreneurship activities and entrepreneurs mobilities across the countries with the 2016 Index of Economic Freedom (IEF), it has been witnessed that an increase of economic freedom by one-unit results in an increase in the net migration flow of startups by 2.5% in the relative country. (Thannhuber, et al., 2016)

According to Venkataraman (2004), in order to have a favorable entrepreneurial ecosystem, there is a need for: innovation centers to stimulate ideas; informal forums of entrepreneurship; safety net in form of financial and business legislation that tolerates risk; gateways to large markets; executive leadership; and role models.

A survey on startups revealed that above 60% of monitored startups in Europe wish that there would be a reduction of regulative and administrative burden. Almost 49% of them desires a tax reduction and about 33% wanted support in raising capital among other requests. (Kollmann et al, 2016) In order to improve the infrastructure for small companies in Germany, reduced number and simplified requirements from start-ups were the goals of Promotion Act. These include an exemption of VAT, in addition to single-entry bookkeeping for small merchants. (The Federal Ministry for Economic Affairs and Energy, 2016)

A study based on Eurostat data for seventy cities during 2004 and 2010, four out of six of the ecosystem components have a very important role to improve entrepreneurial activities. The study showed that cultures that reflect trust and safety; infrastructure that facilitates the transfer of information, knowledge, people, and services; efficient public administration services that engaging private sector; and internet access and connectivity; all help having a favorable ecosystem. (Audretsch & Belitski, 2017)

Startup Hubs Europe (2018b) highlighted similar factors of an effective ecosystem including: entrepreneurial education through schools and universities; personal networks infrastructure in the form of high-speed internet and suitable workspaces; support of accelerators and incubators and collaboration between startups and corporates; government regulations and tax system in a way that makes doing business is easier, creating incentives for businesses and investors and providing funding and support programs.

Mazzarol (2014) proved the importance of these factors by mentioning that governments should work on the following in order to enhance the entrepreneurial ecosystem: enhance the flexibility of labor market; reform taxation systems; harmonize regulation locally and nationally; free international trade; improve national productivity; have entrepreneurship as part of school curriculum; and enable E-Government.

Among the recommendations for EU member to improve entrepreneurship policy and governance the following: promote entrepreneurial education; support research projects; facilitate access to finance; promote the EU internal market; facilitate SMEs access to public procurement. (Schuh, et al., 2017)

The EU favorable ecosystem is the one that has cooperation between public and private stakeholders where all actors have one vision that reflects the economic need and this vision is translated to a common strategy. This will be achieved through multi-level governance that

has three features: decentralization in terms of transferring administrative function to executive bodies; delegation that means transferring the managerial and regulatory functions to other agencies; and devolution that means transferring the power, rights, resources, and assets to local governments (Schuh, et al., 2017)

There is an agreement on the importance of certain factors for the success of an ecosystem. These factors were mentioned in the previously summarized studies and they are expressed in a form of pillars as demonstrated in Table Six.

The pillars are expressed in a general form, they only highlight important areas for policymakers to consider. The specific actions for improving these pillars differ from one region to another as each ecosystem is unique and requires different policies as concluded before. For this reason, a situational analysis for the current status of each ecosystem is needed as a base of policy reforms. These pillars were used as a basis of indexes which were built with the aim of assessment and comparisons among ecosystems.

Table Six: Favorable Ecosystem Pillars

Reference	Frame	Components
(World Economic Forum, 2014b)	Entrepreneurial ecosystem eight pillars	Cultural support Government and Regulatory framework Support system Accessible markets Funding and finance Human capital/workforce Education and training Major universities as catalysts
(World Economic Forum, 2014a)	twelve pillars of competitiveness	Macroeconomic environment Infrastructure Institutions Market size Market efficiency Financial market development Labor market efficiency Health and primary education Higher education and training Technological readiness Business sophistication Innovation

Reference	Frame	Components
(Feld, 2012)	Successful startup community nine attributes	Intermediaries of advisors Accelerators and incubators Professional services at appropriate prices Well-connected network of entrepreneurs Startup events Cooperation of large companies Favorable government policies Availability and easy access to funds Strong leadership Pool of talented labor
(Isenberg, 2011a)	Entrepreneurship ecosystem six pillars	Infrastructure Culture Policies Finance Human capital Market

In summary, most of the policies were not targeting startups particularly, even the analysis of policies and their effect was considering SMEs and startup businesses as alike. Moreover, these studies discussed the effect of a group of policies rather than a specific policy in a specific region and period. Thus, the value these analyses provided for policymakers considering a particular action is limited. In order to develop the ecosystem, it is not realistic nor practical to improve all aspects at once, hence, governments have to create a clear map of the entire ecosystem then address the weakest areas that negatively affect the performance of other areas. Afterward, reforms and corrective actions can be determined. Once the performance of the weakest area improves, another area may become the weakest and receive the focus. (Isenberg, 2010)

3 Chapter Three: Situational Analysis for Europe:

This thesis aims to address the ways of supporting startups in Europe. Situational analysis for Europe is needed for addressing the areas where the individual, institutional and governmental efforts are needed. Policymakers and planners use assessment tools in order to determine problems and solutions. In this section, I used the data and information of some available indexes. I compared the framework of each index and I summarized the areas for improvements each index highlights. Additionally, I reviewed the currently available programs and initiatives concerning these critical areas.

3.1 Assessment of Startup Ecosystem:

There is a need for an objective measure to assess the startup's ecosystem. Entrepreneurship measures were developed through the time from output measures to attitude, then to a framework, weighted until they reach the ecosystem level. Output measures count some of the entrepreneurial incidents such as the business registry. These measures are easily understood; however, they cannot reflect the startup scope properly. Businesses at the seeding phase which haven't been registered wouldn't be included in this measure, though the small and medium registered businesses that do not meet the startup definition would be part of this measure. Attitude measures analyze the entrepreneurial attitude (also referred to as entrepreneurial culture), the major shortcoming of these measures is their dissociation from real life as there is minor evidence of the effect of entrepreneurial attitude on entrepreneurship actions. Framework measures are similar to attitude measures, except for the fact that they capture formal institutions and tangible conditions. They have the same drawback of attitude measures. Weighted measures combine contextual conditions with entrepreneurial outcomes, hence they reflect the quality of the entrepreneurial dynamic in the economy. Their strength is focusing on the economic rather than entrepreneurial outcomes. Their weakness is that they are less straightforward than other types of measures. The ecosystem measures, on the other hand, measure the density, fluidity, connectivity, and diversity of entrepreneurial activity with an ecosystem. (Autio, Szerb, Komlósi, & Tiszberger, 2018)

An entrepreneurial ecosystem index can be built from several measures on three levels: individual (cultural, personal wealth, and work and life satisfaction), organization (organizational performance), community (policy, market, location, job creation, infrastructure, visibility, support, network, talent, funding, education, innovation, new venture). (Vogel, 2013)

Table Seven summarizes available indexes and table Eight represents the most recent assessments of the indexes.

Table Seven: Ecosystem Indexes Overview

Reference	Index	Purpose	Data Source	Structure	Pillars
(Bosma & Kelley, 2018)	Global Entrepreneurship Monitor (GEM) model	Producing indicators on entrepreneurial mindsets	Adult Population Survey and National Expert Survey	12 pillars weighted based on their importance	<ul style="list-style-type: none"> Entrepreneurial finance Taxes and bureaucracy R&D transfer Physical infrastructure Government policies Government entrepreneurship programs Entrepreneurship school education Entrepreneurial post-graduate education Professional infrastructure Internal market dynamics Internal market entry regulation Culture
(Ács et al, 2018)	Global Entrepreneurship Index (GEI) / (GEDI)	Assessing entrepreneurial ecosystem health	Individual level: GEM Adult Population Survey Institutional level: 13 databases including Eurostat, World Bank, OECD. (1)	14 pillars considering 28 variables	<ul style="list-style-type: none"> financing Networking Technology absorption Opportunity perception Risk acceptance Startup skills Product innovation Process innovation High growth Human capital Opportunity startup Competition Internationalization Cultural support

Reference	Index	Purpose	Data Source	Structure	Pillars
(Ács et al, 2013)	Regional Entrepreneurship and Development Index (REDI)	Strengthening the portfolio of entrepreneurship at the regional level	Individual level: GEM Adult Population Survey Institutional level: 13 databases including Eurostat, World Bank, OECD. (1)	14 pillars considering 28 variables	Financing Networking Technology adoption Opportunity perception Risk acceptance Startup skills Process innovation Product innovation High growth Human capital Opportunity startup Competition Globalization Cultural support
(World Economic Forum, 2014b)	Entrepreneurial ecosystem	Understanding the dynamics of successful entrepreneurial companies and ecosystem	Online survey on more than 1000 entrepreneurs and 66 executive case studies	8 Pillars with 38 sub-components	Funding and finance Support system Government and regulatory framework Education and training Major universities as catalysts Human capital/workforce Accessible markets Cultural support
(Roy & Nepelski, 2016)	The entrepreneurship index (2)	Assessing the entrepreneurial conditions on the national level	ESIS based on 14 databases including World Bank, Eurostat, Eurobarometer and OECD and other	7 Pillars for startup are based on 20 variables It uses the same pillars for scaleup with different 25 indicators (3)	Access to finance Tax and regulations Infrastructure and support Knowledge and networking Access to human capital Market conditions Culture and institution

Reference	Index	Purpose	Data Source	Structure	Pillars
(Autio et al, 2018)	Digital Entrepreneurship Systems (EIDES) (4)	Understanding and assessing the digital entrepreneurial ecosystem	Several databases including World Economic Forum, IMF, World Bank, and OECD	General and systematic framework based on 8 pillars	Culture and informal institutions Formal institutions, regulation, and taxation Market conditions Physical infrastructure Human capital Knowledge creation and dissemination Finance Networking and support
(Kantis, Federico, & García, 2018)	Index of Dynamic Entrepreneurship (IDE)	Helping entrepreneurial projects in developing countries to leverage	Several databases including World Bank, GEM, GCI, UNESCO, and others	It has a systemic approach built on 10 key social, cultural, economic and political dimensions	Financing STI platform Business structure Policies and regulations Education Social capital Entrepreneurial human capital Demand conditions Social conditions Culture
(Bannerjee, Bone, Finger, & Haley, 2016)	The European Digital City Index (EDCi)	Supporting digital entrepreneurship and digital startups	Several databases including World Bank, Eurostat, Eurobarometer and OECD and other, in addition to in-house data gathering by Nesta	It assesses the city's situation for startups and scaleups separately based on ten pillars and 40 factors	Access to capital Digital infrastructure Non-digital infrastructure Skills Lifestyle Knowledge spillover Business environment Market Monitoring Entrepreneurial culture (5)

(1) It benchmarks with the best five percent existing performance. The averages of each of 14 pillars values were equated to provide the same marginal effect.

(2) The index groups countries into excellent, very good, good, and fair framework conditions. This classification facilitates benchmarking with immediate peers and helps to set reasonable targets. (Roy & Nepelski, 2016)

(3) There are strong and balanced correlations between the indicators and their pillars which indicates the equal importance of the indicators within the pillar. In spite of indicators difference, the Entrepreneurship startup and Scaleup indexes are relatively well correlated. They group countries into four groups based on the framework conditions: excellent, very good, good and fair. They reveal that a country's level of development is strongly correlated with framework conditions for entrepreneurial activity. (Roy & Nepelski, 2016)

(4) EIDES distinguishes between three stages of the entrepreneurial dynamic: Stand-up, Start-up, and Scale-up. It calculates the arithmetic average of the three sub-index scores. It divides countries into four groups: leaders (score above 70), followers (score above 45 and up to 70), catchers-up (score above 35 and up to 45) and laggards (score below 35). (Autio et al, 2018)

(5) The factors considered in each pillar are as the following: Access to capital: debt, equity investment, crowdfunding, and grants. Infrastructure: mobility, science parks, and incubators, urban innovation districts, and coworking spaces. Skills: education, startup visas, and attracting and retaining talents. Lifestyle: cost of living, cultural attraction, and creative experimentation. Knowledge spillover: collaborative research and consultancy, cross-pollination, and facilities hire. Business environment: tax incentives, regulatory sandboxes and testbeds, first track permits, and labor market regulations. Monitoring: monitoring networks, accelerators, and business angels. Entrepreneurial culture: attitudes towards failure, promoting youth entrepreneurship, and city branding. (EDCi European Digital City Index 2016, 2018)

There are common pillars considered in all indexes, additionally, some indexes used the same variables and data sources in order to assess some pillars. For instance, EDCi and GEM used same data sources for some variables which indicate some overlap, however EDCi measures at city level rather than the national level, it is more detailed than GEM and it aims to provide a ranking. (Bannerjee et al, 2016) Comparing the structure of indexes on the variable level will be too detailed and beyond the scope of this thesis.

On the other hand, there are some critics on the structure and assumptions used for building the indexes in addition to the way data was collected. For instance, GEDI does not reveal the strength of links between pillars, and it assumes that all links have the same strength and that all pillars cost the same to change. Additionally, it does not differentiate between causal and

symptoms, thus, experts' judgment is needed to assess bottlenecks causes and required actions. (Levie, et al., 2013) As in GEDI, REDI assumes that the efforts and costs for improving any pillar at any location are the same, this assumption is not realistic, however, it was used for simplicity. (Acs et al, 3013) Another risk the concept of these indexes carry when they focus on system bottlenecks to fix a gap that may come at the cost of maximizing system strengths. (Autio et al, 2018)

Although these indexes are not perfect, they are helpful for creating a simple overall picture on the status of the ecosystem. Having a blurry picture is always better than having nothing at all. Some researches aim to prove the relevance of using such indexes for policy decisions. One study carried out by Audretsch & Belitski (2017) supported the use of the Regional Entrepreneurship and Development Index (REDI) as an instrument for explaining failure and success.

Table Eight: Ecosystem Indexes Score Overview

Reference	Index	Year	Pillar	Europe	World	US	Report Findings
(Global Entrepreneurship Monitor, 2019)	GEM	2018	Entrepreneurial finance	2.83	2.61	3.57	<p>Policy assessment covered some countries as below:</p> <p>BG: It lacks entrepreneurial education; the government does not provide sufficient attention to entrepreneurship; in addition to the high corruption level.</p> <p>DE: It has negative social values and norms. It should involve more policymakers for regulations and taxation and improve entrepreneurial education.</p> <p>PL: The social attitude and culture do not stimulate entrepreneurship.</p> <p>SK: It lacks entrepreneurial skills and education; it has unfavorable regulations and taxes in addition to high bureaucracy. There are no sufficient government entrepreneurship programs.</p> <p>SI: It must improve the quality of entrepreneurial education and training. (GLOBAL ENTREPRENEURSHIP MONITOR, 2018) (1)</p>
			Government policies	2.57	2.61	2.53	
			Taxes and bureaucracy	2.39	2.39	2.84	
			Government entrepreneurship programs	2.79	2.70	2.67	
			Entrepreneurship school education	1.96	1.95	2.60	
			Entrepreneurial postgraduate education	2.89	2.89	3.29	
			R&D transfer	2.54	2.40	2.65	
			Professional infrastructure	3.14	2.95	3.53	
			Physical infrastructure	2.97	3.10	3.29	
			Internal market dynamics	2.67	2.55	2.93	
			Internal market entry regulation	3.93	3.77	4.19	
			Culture	2.73	2.92	4.30	

Reference	Index	Year	Pillar	Europe	World	US	Report Findings
(Ács et al, 2018)	GEI & REDI	2018	Opportunity perception	51%	36%	86%	Seven of the GEI's top ten countries are in the EU zone. Northern European countries have better ranks than Eastern European countries. Europe has a high score in startup skills, technology absorption, and internationalization. The key weakness is in Networking, Although, it is higher than the global average. Policy recommendations based on lowest scores are: Improve ICT access and infrastructure. Promote networking activities. Improve institutional and regulatory stability. Simplify the bankruptcy process. Support having a social safety net. Foster flexible labor market. Sponsor entrepreneurial education and provide tax breaks for education costs incurred by firms. Break up monopolies and police anticompetitive practices. (2)
			Startup skills	66%	43%	100%	
			Risk acceptance	48%	36%	97%	
			Networking	45%	43%	57%	
			Cultural support	51%	41%	82%	
			Opportunity startup	59%	45%	85%	
			Technology absorption	63%	38%	81%	
			Human capital	49%	46%	100%	
			competition	49%	38%	100%	
			Product innovation	57%	53%	73%	
			Process innovation	58%	39%	90%	
			High growth	50%	43%	100%	
			Internationalization	63%	41%	100%	
			Risk capital	53%	41%	88%	
(World Economic Forum, 2014b)	Entrepreneurial ecosystem	2013	Accessible markets	72%	75%	92%	4 EU countries were categorized in Group A, 4 in group B, 6 in Group C, and 2 in Group D.
			Human capital/workforce	81%	78%	93%	
			Funding and finance	57%	65%	91%	
			Support system	52%	58%	91%	
			Government and Regulatory framework	54%	54%	67%	
			Education and training	60%	50%	80%	
			Major universities as catalysts	52%	51%	88%	
			Cultural support	33%	48%	90%	

Reference	Index	Year	Pillar	Europe	World	US	Report Findings
(Roy & Nepelski, 2016)	The entrepreneurship index	2016	Culture and institution	5.5	N/A	N/A	Data is available for EU Zone only (3)
			Access to human capital	4.5			
			Knowledge and networking	7			
			Market conditions	6.1			
			Access to finance	5.2			
			Tax and regulations	6.4			
			Infrastructure and support	5.9			
Autio et al, 2018)	EIDES	2018	Culture and informal institutions	50.3	N/A	N/A	Data is available for EU Zone only. (4) The analysis recommends how efforts should be distributed among pillars for policy optimization for each country. (5) A summary is available in the appendix (3)
			Formal institutions, regulation & taxation	50.3			
			Market conditions	50.31			
			Physical infrastructure	50.31			
			Human capital	50.3			
			Knowledge creation and dissemination	50.3			
			Finance	50.3			
			Networking and support	50.31			
(Kantis et al, 2018)	IDE	2018	Financing	62	48	79	Data is available for 61 countries including 25 countries in Europe. (6) The index provides international benchmark based on the average of the top three countries of each pillar
			STI platform	51	35	69	
			Business structure	44	36	58	
			Policies and regulations	58	52	63	
			Education	59	50	56	
			Social capital	59	54	84	
			Entrepreneurial human capital	41	38	71	
			Demand conditions	51	54	57	
			Social conditions	56	47	62	
			Culture	43	41	63	
(European Digital City Index, 2019)	EDCi	2016	Scores are available on variable level rather than on pillar level.	N/A	N/A	N/A	Data is available only for some European cities (7)

Indexes Analysis:

Green color refers to the strongest pillar; while red refers to the weakest.

(1) On the EU level, all countries demonstrated high score on Infrastructure; whereas Entrepreneurial School Education is weak. This conclusion applies to the country level for most countries except Sweden, Croatia, Latvia, Greece and Israel where the bottlenecks are Taxes and Bureaucracy. The bottleneck in Slovakia is the Government Support and Policies.

(2) Regional scores of REDI are available for the year 2013. By comparing them to the average scores of Europe as a whole, we see a significant difference due to the time difference in addition to using averages to present the overall picture of Europe. An analysis of the regional scores as presented in Appendix (1) reveals that Opportunity Startup is the strongest pillar in some regions and the weakest in others. Six regions out of twenty-four have it as a bottleneck. The general ecosystem is better in northwestern Europe than in the middle and southern eastern Europe. The challenge in northern-western Europe is more about Globalization. In southern eastern Europe all pillars are weak, however, the bottleneck is in most cases Opportunity Startup. In the middle of Europe, the bottleneck is Risk Perception. Surprisingly Networking wasn't the bottleneck in none of the regions, even though it appears as the weakest pillar on the Europe level. When analyzing GEDI on a country level and comparing it to Europe level, we see differences. Risk Acceptance was the major challenge on the country level and has the lowest score rather than Networking especially in eastern-southern Europe. Ten out of forty countries have it as a bottleneck. The second bottleneck was Networking. In northern-western Europe Startup Skills and Internationalization are the areas of a bottleneck. In middle Europe Networking and Human Capital are the weakest pillars.

(3) On country level in southern-eastern Europe, the Knowledge & Networking, Culture, Infrastructure, Access to Finance have a negative influence on ecosystems more than Access to Human Capital. Most of the countries have the lowest score on Finance, however, the average of EU countries hides this weakness.

(4) Calculating averages to get the score for Europe is distorting the scores and misleading the analysis. Market Condition is the bottleneck for Seven out of twenty-eight countries, especially in southern-eastern Europe. In addition to it, networking is the area for focus in northwestern Europe. In middle Europe, the focus should be on Regulations and Taxation.

(5) The recommendations for policymakers were on how to allocate efforts on different area and phases of entrepreneurship. Networking has the highest focus in all phases, especially in standup phase. Followed by Knowledge Creation in all phases. Then Finance becomes the focus, especially in the startup phase. Culture Policies are more important in southern-eastern Europe. Physical Infrastructure is out of focus in all countries. The recommendation didn't

focus on Regulations and Taxation even in the countries where it appears as a challenge such as Belgium, Poland, and Italy. The recommendation of some countries was with a focus on specific areas, in others were reflecting several areas with a minor focus, Belgium and Poland are examples of policy recommendation with minor focus. The recommendation reflects the bottleneck in most countries except for Belgium, Ireland, Malta, Cyprus, Hungary, and Slovakia.

(6) On the European level, the Entrepreneurial Human Capital was the weakest pillar, it was the bottleneck in seven countries. The Czech Republic was an exception where this pillar is the strongest. North-west countries have better conditions than middle and south-east countries almost in all pillars. The biggest challenge in north-west countries is the Demand Conditions, their strength is in Finance. In middle Europe, the Policies & Regulations is stronger than Finance and Entrepreneurial Human Capital was the weakest pillar. The strongest pillar in south-eastern countries is Education, whereas the main challenge is the Business Structure.

(7) There is a significant difference between North-West and South-East European cities especially in Attitudes Towards Entrepreneurship, the Availability of Capital, and Mentoring or Managerial Assistance. (Bannerjee et al, 2016) The Business Environment does not differ much across cities. (European Digital City Index, 2019)

By comparing indexes results on an aggregate or detailed level, we address some conflicting results. This is most probably due to the different scope, structure, variables, and data sources each index has. GEM highlighted the Entrepreneurial Education which does not appear as an issue considering other indexes. Networking was addressed as a bottleneck by GEDI, the Entrepreneurship Index, EIDES, surprisingly not by REDI which uses a similar structure. The Entrepreneurial Ecosystem highlighted the culture as a challenge, EIDES proved this hypothesis only in eastern-southern Europe. Human Capital was addressed as a strength by The Entrepreneurial Ecosystem Index, at the same time, as a weakness by the Entrepreneurship and IDE Indexes. Policies and Regulations was the strongest pillar in middle Europe by IDE and the weakest according to EIDES in the same region. It worth mentioning that the data I have for Entrepreneurial ecosystem, the entrepreneurship index, and City Index is relatively old. This may be the reason for some score differences if corrective actions and remedies were already applied and improved the scores of relative pillars.

Policymakers will face difficulty in determining which index is most appropriate especially when conflicts exist. One reason for misleading results is when we aggregate the scores to cover a larger scope. For that reason, indexes that cover narrower scope are more relevant for policymakers. This makes REDI the most appropriate index for policymakers in the EU zone.

Benchmarking with other ecosystems is also valuable, however, it gets the second importance as bottlenecks have a stronger influence on the performance of the ecosystem as a whole, thus they should receive the highest attention. The USA has the highest scores on a global level. Although, comparison with similar ecosystems is more meaningful. For this reason, some indexes categorize ecosystems to facilitate such comparison.

In addition to available indexes, European Startup Monitor asked startups to evaluate various aspects of the ecosystem. Based on startups opinion, the Education System in Europe does not promote entrepreneurship much in schools and universities. In most European countries, the Cooperation Between Startups and Traditional Companies needs to be improved. The rate was above 3 out of 6 only in 10 countries with the highest score of 4.5 in Finland. Startups rated the National Government Support 2.7 out of 6 on average in Europe. The lowest rate was 1.6 in Greece and the highest was 5 in Finland. This shows that there is a considerable possibility for improvement in Europe in general. (Kollmann, Stöckmann, Hensellek, & Kensbock, 2016)

The analysis of Startup Hubs Europe led to the following policy recommendations: review the regulation related to doing business, trading, taxation, employment, working visa in order to remove barriers to startup; additionally, review the regulation relating to business failure so that entrepreneurship can be encouraged without creating a moral hazard. Having direct government intervention at a minimal level. Encourage collaboration between startups especially with successful entrepreneurs from other countries. create a program of activities that promote and celebrate the success of entrepreneurs. Create a European-wide venture capital fund. Teach entrepreneurship in schools and universities. Encourage consistent capture and publication of data and analysis on startup. (Startup Hubs Europe, 2018b)

The indexes have indicated the areas that require attention. Additionally, the startup's monitors and networks have addressed others and provided recommendations. The next step is to check whether policymakers and all actors in the ecosystem responded accordingly and put the efforts to develop those weakest areas.

3.2 Assessment of Startup Ecosystem Programs and Initiatives:

The purpose of this section is to check whether there are sufficient programs and policies in place in order to develop the weakest parts of the ecosystem.

Some policies and programs in the EU zone are on the EU level and mainly supported by the European Commission. However, other global or European organizations contribute to the development of the Startup ecosystem in Europe. Alternatively, there are policies and programs on the local level initiated by governments, institutes, and corporates within each county.

On the regulation level, the European Charter for SMEs (2000) the EU Member States and the Commission took action to support small enterprises in ten key policy areas which are education and training, start-up cost and duration, legislation and regulation, entrepreneurial skills, online access, single market, taxation, technological capacity, E-business models, and SME representation at the Union and national level. (Bogdanowicz, 2015)

Additionally, the Small Business Act for Europe – SBA was been created in the year 2008. It represents the framework which the Member States have committed to implementing alongside the European Commission. It has a focus on start-up procedures, business transfer, regulations, environmental challenges, taxation and accounting for SMEs, public procurement, a second chance in business, employee stock options, cross-border outstanding claims projects, entrepreneurial education, and entrepreneurial culture. (Bogdanowicz, 2015)

Moreover, the European Structural and Investment (ESI) Funds is financing projects addressing institutional capacity and reforms. The amount of allocated money reached around three billion euros by the end of 2017. Almost a third of supported projects were focusing on digitalization. (European Commission, 2018a). One example of these projects is the E-government. The governments of the European Union during the Spring Council of 2006 agreed on a series of simplifications to make starting up a company faster and cheaper anywhere in Europe. The electronic “points of single contact” and physical “one-stop shops” have to be set up in each country by the public administrations in order to make the process of starting up a business is easier. The European e-Justice Portal is a future electronic one-stop-shop in the area of justice. (European e-Justice Portal, 2018) Another program that makes the legal environment more appealing is SOLVIT Centers. It aims to establish centers in all EU countries for helping citizens and businesses with their problems and complaints. These centers are expected to provide real solutions to problems within ten weeks free of charge. SOLVIT helps enterprises in situations such as unfair rules or decisions and discrimination caused by the authorities of another country in the European Union. Hence, it does not support in situations where the enterprise is having a problem with another enterprise or as a consumer neither when the affected enterprise is receiving compensation or taking its case to the court. (SOLVIT, 2016)

With respect to entrepreneurial education, Erasmus for Young Entrepreneurs was established in 2009 and financed by the European Commission with the aim of providing knowledge and developing the skills necessary for starting and running a small business successfully. The program takes from one to six months and it includes on-the-job training in a small or medium-sized enterprise in another country. A company can also host participating entrepreneurs from other countries. This results in win-win collaborations among entrepreneurs and hosting companies where knowledge and expertise are shared and exchanged. (Erasmus for Young Entrepreneurs, 2018)

From a financial perspective, during years of 2014 – 2017 about thirty-three billion euros were invested to boost the competitiveness of small and medium enterprises. Additionally, 321,000 companies received advisory assistance and 35,300 businesses received support to launch new products. (European Union, 2018) The money was funded by European Structural and Investment (ESI) Funds through various programs. Cohesion Policy was under ESI umbrella and it improves the competitiveness of the European ecosystem indirectly through its focus on regional development, research, innovation, and competitiveness of SMEs. cohesion policy set a target of around 80.3 billion euros to be invested in EU countries during the 2014-2020 by providing 940 financial instruments. During the period of 2007 till 2013 around 200,000 SMEs were supported, 1,800 km of railways and 25,000 km of roads were created or reconstructed, 5 million citizens received broadband access. (European Commission, 2019c) The European Commission with the aim of bringing all EU's research and innovation funding together under a single common strategic framework has established the Horizon 2020. It is considered as the most extensive EU Research and Innovation program ever with a budget of eighty billion euro over the years of 2014 till 2020. (European Commission, 2018b) In the last two years, fourteen projects were funded for linking 700 startups with investors, accelerators, entrepreneurs, corporate networks, universities, and the media. (European Commission, 2018d) Europe Horizon 2020 encompasses three actions for promoting entrepreneurship: Entrepreneurial education and training, entrepreneurship environment, role models and outreach to specific groups. These actions cover ten pillars: visibility, networking, regulatory advice, business support, business training, mentoring, access to finance, facilities provision, language & culture knowledge, and impact. European Commission, 2016a)

Competitiveness and Innovation Framework Program was initiated in 2006 to strengthen productivity and innovation capacity and help sustainable growth in Europe. It encompasses three programs: Entrepreneurship and Innovation Program (EIP) that aims to improve the competitiveness and innovativeness of European enterprises; Information Communication Technologies and Policy Support Program which aims to stimulate innovation and competitiveness through wider use of ICT and digital content by citizens, governments and businesses; and Intelligent Energy – Europe Program (IEE) aims to promote renewable energy and energy efficiency. (Wilkinson, 2010) EIP has an allocated budget of 3.6 billion euros between 2007 and 2013. It has a focus on creating entrepreneurship favorable environment; facilitate access to finance; promote entrepreneurship and innovation. It has four means to reach its objectives: financial instrument, enterprise network, innovation support, and policy analysis. After seven years of initiating the program: the seed for early stage and the supply of capital at the startup and scaleup phases have increased to cover up to 400 thousand of supported SMEs. A survey covered 413 SMEs which received support by EIP showed that the objectives of the Enterprise Europe Network are relevant to the SMEs need. (Wilkinson, 2009) On the evaluation of the support provided by EIP 88% of enterprises received the support were satisfied with the support, and 73% think that the support helped them improve their businesses. (The Centre for Strategy & Evaluation Services (CSES), 2011)

InvestHorizon is another program initiated to increase investments made in Innovative SMEs at all stages. It involves business angels, corporate and private investors, venture capital, government venture funds, crowdfunding, together with accelerators, incubators, universities, and policymakers. (InvestHorizon , 2019)

Competitiveness of Enterprises and Small and Medium-sized Enterprises (COSME) is a program started in 2014 to facilitate access to finance for SMEs. It has a budget exceeds EUR 1.3 billion to be provided through two financial instruments: The Loan Guarantee Facility (LGF) which funds guarantees and counter-guarantees and The Equity Facility for Growth (EFG) which is dedicated to investments in risk-capital funds for financing SMEs at expansion and growth-stage especially the ones across borders. (European Commission, 2019a)

The SME Instrument is part of the European Innovation Council (EIC) which provides financial support for top class innovators, entrepreneurs, and small companies especially the ones that shape new markets and generate jobs and improve the quality of life. (European Commission, 2019b) Till this date more than 1.7 billion euros were allocated and 4,373 projects were coordinated mainly in ICT, construction, health, and energy sectors. (EIC SME Instrument data hub, 2019)

The European Commission initiated the Startup Europe Program with the aim of strengthening the business environment, especially for web and ICT businesses. (European Commission, 2015) Below is a summary of enabling programs and platforms for Startup Europe. (European Commission, 2018c)

Table Nine: Startup Europe Programs

Program	Description	Focus
Access 2 Europe	It enables startups to scale up by facilitating access to the market in four major hubs (Germany, France, Spain, Estonia)	Access to market
Nordic Angel Program	It helps high-tech startups and innovative SMEs to grow and scale up by establishing business angel networks in the Nordic region	Financing
Soft Landing	It connects smaller startup ecosystems to the larger one	Networking
My Gate Way	It improves the European ecosystem in Balkans by providing access to networks, finance, talent, etc.	General

Program	Description	Focus
Scale Eup Program	It facilitates growth through access to finance, markets and skilled employees	General
Startup Europe Partnership	It aims to foster IPOs, facilitate partnerships and increase the international visibility	Internationalization and Networking
Startup Lighthouse	It guides startups to take the right combination of finance to enable them to scale up	Financing
The European Digital Forum	It empowers the digital economy and web entrepreneurs	Technology and innovation
Startup Europe University Network	It creates a community of universities and business/scientific park connected with startup opportunities	R&D and education
The LIFE project	It facilitates learning from failure	Startup skills
WeHubs	It supports women web entrepreneurs	Technology and Networking
MY-WAY	It improves collaboration among web entrepreneurship, web experts, educational actors, and young adults	Technology and Networking
The Accelerators Assembly	It supports web-friendly accelerators	Startup skills
The SEP Forum	It builds a community of investors in web businesses and mobile tech and helps them getting funds	Financing and Networking
Massive Open Online Courses Network	It encourages the use of Massive Open Online Courses focused on web skills	Technology and innovation
The SE Unicorns Forum	It allows sharing best practices, understanding global web entrepreneurship trends and reflecting on future models	Startup skills and opportunity perception
EU Tech Writers	It promotes the digital economy by organizing meetings and workshops	Technology
European Disrupters Network	It encourages learning, innovation, and collaboration at a high level of Tech	Technology and innovation
ICT Law Incubators Network	It provides free legal support to startups and offers the opportunity to postgraduate law students to engage in professional practice	Human capital

Program	Description	Focus
EU-XCE (European Virtual virtual accelerator)	It seeks out talented ICT entrepreneurs to participate in a unique international entrepreneurship	Human capital and opportunity perception
Utrecht Summer Academy	It provides education in entrepreneurship and innovation	Education and innovation
STARTIFY7	It trains young future ICT entrepreneurs	Technology and innovation
Startup Hubs Europe	provide analysis of the European startup ecosystem. It uses the national company registries data, Angel List and Crunchbase (Europe, 2018)	Networking
Startup Europe Club	It facilitates the connection among investors, startups, and corporates	Networking

The above-mentioned programs encompass other programs or services. Some programs were offered only one time and stopped, others are continuously running. The duration of each program for the applied businesses varies from one program to another, it ranges from few days to few months. The support for a specific startup is provided once, in rare cases the support can be extended for an additional period.

The most active global supporting communities are The Global Entrepreneurship Network, The Entrepreneurs' Organization, Startup Grind and Google for Startups. The Global Entrepreneurship Network which is supported by the global community of numerous foundations and corporations. It operates a platform of projects and programs in 170 countries with the aim of supporting starting and scaling businesses. Its programs focus on research, support and connecting entrepreneurs with other players in the ecosystem. It issues the GEDI index. (Global Entrepreneurship Network, 2019) The Entrepreneurs' Organization (EO) was Founded in 1987 by a group of young entrepreneurs. It became the world's most influential community of entrepreneurs which operates in 58 countries with a network that exceeds 13,000 entrepreneurs. Its programs have a focus on education and mentorship. (Entrepreneurs' Organization , 2019) Startup Grind is the largest independent startup community with a presence in 125 countries. It organizes events for educating, inspiring, and connecting more than 1,5 million entrepreneurs. (Startup Grind, 2019) Google for Startups is an initiative that provides tools, best practices, and an international community to help startups building their products and scale them up. (Google for Startups, 2019)

On the regional and local level, there are thousands of programs and initiatives supported by local governments, institutions, and corporations. Several are supported by one of European Commission's programs or more. The EU supports more than 200,000 businesses every year. Local financial institutions such as banks, business angels and venture capitalists decide on the amount of fund, duration, interest rates, and fees. Then the EU in addition to the European Investment Bank and European Investment Fund support these institutions by providing additional funds. (Your Europe, 2018) The below table provides a few examples of local programs: (Richardson et al, 2015)

Table Ten: Local Startup Supporting Programs

Country	Program Name	Description
Czech Republic	Practice Firms	It gives entrepreneurs an opportunity to take an active part in the process of business creation by enrolling them into a practice firm from its network
Ireland	Best Young Entrepreneur (IBYE)	It is a competition for entrepreneurs under 30 years old that enables them to realize their outstanding ideas and creating a business
Germany	Gründungszuschuss (GZ) / Einstiegsgeld (ESG)	It is a start-up subsidy for unemployed people for a maximum amount and period of 18000 euros for 15 months
Portugal	The Investe Jovem programme	It includes financial support, technical assistance, career guidance, and non-formal training
Italy	Incentives for self-employment and entrepreneurship (Autoimprenditorialita')	It combines sector-specific incentives with financial support for young entrepreneurs with the age between 18-35 years old
France	Pole Etudiant Pour l'Innovation, le Transfert et l'Entrepreneuriat (PEPITE)	It creates regional-level hubs for innovation, knowledge transfer and entrepreneurship. On the strategic term, it is expected to improve entrepreneurship education and training and support entrepreneurial projects by providing consultation and mentorship

In spite of the importance of these programs for developing the regional startup ecosystems, it will be difficult to cover this part within this master thesis for time, efforts and languages limitations.

An evaluation on entrepreneurship supporting policies in EU zone revealed that the education policies have been carried out by almost all member states, However, they have been developed separately from other entrepreneurship supporting policies in most of the

countries. Simplifying administration rules were also adopted as part of the Small Business Act 2008. However, there is a considerable variation among the countries on the extent of provided support. (Richardson et al, 2015)

In summary, there are several and huge funds that directly or indirectly support startups and enhance the ecosystem. However, on the overall European level, the focus is more on networking, technology, and innovation. I couldn't address programs that aim for improving risk perception and market conditions. Even though these pillars were recognized as bottlenecks by some indexes. They might be considered and covered by local programs which I was not able to check.

The existence of programs alone doesn't guarantee the development of the relative pillar as the effectiveness and efficiency of these programs is not always monitored. Another issue raised by entrepreneurs is that the requirements for applying for support are difficult to be met and the procedure of application is complicated. Additionally, the competition to get support is very high. Thus, the entrepreneur faces tough competitors even before entering the market. This may also be an indication for a shortage in supporting programs. The awareness of startup supporting programs and the sufficiency of the programs are among the points that have been checked in the survey that I conducted for this thesis.

4 Chapter Four: Thesis Methodology:

Dr. Ibrahim Inuwa (2016) defined the research methodology as the philosophy that guides the research. It includes research design, research strategy, area of the study, the population of the study, sample size & sampling technique, the method of data collection, the method of data analysis, reliability & validity test, and ethical consideration. Here below I used the same structure and definitions of Dr. Inuwa.

4.1 Research Design:

The research plan is the structure of the research work which is determined by the research problem & objective. There are two types of research design: qualitative and quantitative. (Inuwa, 2016) The qualitative approach aims to understand and explain a phenomenon by a structured study where data is collected through observation, experiment, and interviews. Whereas the quantitative approach attempts to prove or disprove hypothesis through examining pre-defined variables, the data is numerical and is mainly gathered through surveys and interviews with closed-ended questions. (Stumpfegger, 2017)

This thesis is trying to solve the problem of the high failure rate among startups. The main target of this thesis is to determine how to support startups in Europe to succeed. The used approach was reviewing previous studies on this topic, analyze the current situation based on relative indexes results and available programs then validating the assumptions through an empirical study. The empirical study used a mixture of qualitative and quantitative approaches. The respective data is qualitative in nature as it represents opinion toward the convenience of the startup ecosystem, major challenges that startups face and desired means of support. However, the method of collecting data was a questionnaire with both open-ended and closed-ended questions. The main reasons for choosing this approach were the aim of validating the research hypotheses which resulted from the previous studies and situational analysis, in addition, to cover a broad geographical and business scopes that encompass the whole startup ecosystem in Europe. On the other hand, case studies and interviews would not be sufficient for representing the overall population. Additionally, time and cost were limiting my ability to have direct contact with targeted providers of data out of my home city Frankfurt.

The advantages of using this approach were covering wide area across the borders, being efficient with time and costs, and receiving structured data. The online tool assures confidentiality since it does not reveal the identity of participants. Additionally, the information is more objective as answers were not influenced by the researcher way of asking questions or interpreting answers. However, confidentiality and objectivity were lower when the paper questionnaire was filled during interviews.

Quantifying answers facilitated conducting further analysis. Never the less, expressing an opinion by number is difficult, even if the scale is simple and clear. People may be different in the way they use the scale, some are more positive or negative in the way they see and assess situations.

On the other hand, using surveys limited the amount of the information collected when participants provided only the information they were asked for. Other qualitative approaches allow for more information to be gathered. The questionnaire provided the ability to mention other information rather than the given choices, however, most people tend to fill the questionnaire fast and they do not provide further information unless it is critical.

Additionally, using the online tool limited the control on the eligibility of participants and the way they understood the questions and answered them as there was no way for providing further explanation. In such a situation, if the participant is not sure about understanding the question, either he/she provides any answer or quits the survey. In order to mitigate this risk, I provided my contact details for participants and requested they contact me in case they have questions.

Another drawback for the confidential anonymous online survey was the inability to clarify ambiguous answers and follow up on uncompleted answers. Besides, the low response rate of this tool.

In spite of all the drawbacks of the research approach, I believed that it was the most suitable and practical approach to the conditions I had during my research. The research aimed to test the following hypothesis:

Hypothesis 1: entrepreneurship indexes provide a valid representation of the situation of the entrepreneurial ecosystem.

Hypothesis 2: entrepreneurship indexes are used by all actors within the entrepreneurial ecosystem.

Hypothesis 3: Supporting programs are known and pursued by all actors of the startup ecosystems.

4.2 Research strategy:

The strategy represents the way and the procedures used in the research followed by an operational plan. (Inuwa, 2016). For data collection, I designed a questionnaire with closed-ended questions in order to test hypotheses, and open-ended questions to gather additional data. The questionnaire had ten questions as summarized in table 11.

Table 1: The Questionnaire Structure

Quest.	Purpose	Type	Possible answers
1	Knowing the participant's role in the ecosystem	Multiple choices with the ability to select another open-ended option	Various actors within the startup ecosystem
2	Knowing the participant's business region	Open-ended	City name with the postcode
3	Evaluation of the participant's regional ecosystem	Closed-ended	A scale of numbers
4	Checking the usage of entrepreneurship indexes	Closed-ended multiple choices	Available entrepreneurship indexes
5	Knowing the major challenges, the startups face	Closed-ended ranking of choices	Possible challenges
6	Addressing the most exchanged services with the startup ecosystem	Multiple choices with the ability to select another open-ended option	Various types of services
7	Evaluating the performance of various actors within the ecosystem	Closed-ended	A scale of numbers
8	Addressing unfulfilled needs, the startups may have	Multiple choices with the ability to select another open-ended option	Various types of factors that affect startup business
9	Addressing the most popular startup supporting programs	Open-ended	Available startup supporting programs
10	Checking the sufficiency of available startup supporting programs	Closed-ended	Yes, no or I do not know

The questionnaire was built using an online tool that enabled distributing it online through Europe. It has a professional design; it provided participants with a convenient and confidential environment for participating. Additionally, I used a paper questionnaire during the interviews I conducted in Frankfurt. Afterward, I extracted the data to excel sheets which I used for summarizing and analyzing the information.

4.3 Study Area:

It refers to the geographic location the research covers. (Inuwa, 2016) My thesis covers the European continent. Some indexes used in the situational analysis demonstrate results for Europe, while others provide the data for the EU zone only. The cross-border programs were mainly supported by the European Commission; thus, they covered the EU zone. Besides, countries' policies within the EU zone are affected by EU general policy. For these reasons, it was more practical to focus on EU zone and have it as a study area for my empirical study.

4.4 Population, sample, and method of data collection:

The population refers to the targeted group for the survey within the study area. (Inuwa, 2016) In my thesis, the target group represents different parties in the startup ecosystem. These parties are entrepreneurs who have a startup business at all phases (standup, startup, scaleup), different types of investors that invest in startup businesses at all phases (business angels, crowdfunding, venture capital, banks, private investors), all supporting institutes and businesses (incubators, accelerators, consultants, universities, corporates, governments and NGOs) that are located within the EU zone.

For selecting the sample, I used the available online startup directories and maps that provide the names, locations, and websites of different actors of the startup ecosystem. Moreover, in order to get a wider reach, I asked my connections to share the survey link with people they know from the target group. This was done through social media. I shared the survey link on LinkedIn where it may be reached by my network of 1,168 professional and Business Start-up Best Practices Group on LinkedIn which include 643 members. I also shared it on my Facebook page where I have 446 friends and on the HS Kaiserslautern Zweibrücken FSM And IFM Business Administration Group of students which includes 112 members.

The survey was distributed online to 649 targeted participants through email, 28 LinkedIn messages, 11 WhatsApp messages, and 19 interviews. The targeted number of survey invitation and the destination were decided based on the availability of contact information and time allocated for that purpose.

The online interaction rate was low. I received 57 valid responses in total. The sample size is above the minimum size used for statistics. It does not cover all EU countries, Never the less, it covers the different types of economy and business environments in Europe. Almost half of the participants were located around Frankfurt as the response rate for interview-based questionnaires was much higher than the online questionnaire. The sample covers all types of actors within the ecosystem. However, their representation was not equal as most of the interviewed participants were entrepreneurs who used the facilities of coworking places. The geographical location and institution types are demonstrated in the below tables. Also, check

appendix (5) and (6)

Table Twelve: The Geographical Structure of the Sample.

Country	Sent	Received	Country	Sent	Received	Country	Sent	Received
Austria	39	0	Greece	12	0	Poland	27	0
Belgium	17	1	Hungary	8	2	Portugal	16	0
Bulgaria	4	0	Ireland	13	0	Romania	14	0
Croatia	9	0	Italy	27	1	Slovakia	3	0
Cyprus	2	0	Latvia	5	1	Slovenia	4	0
Czech Republic	21	0	Lithuania	6	1	Spain	32	3
Denmark	29	0	Luxemburg	3	0	Sweden	26	1
Estonia	24	1	Malta	1	0	Switzerland	14	1
Finland	33	0	Netherlands	46	2	Turkey	2	1
France	42	2	Norway	6	0	UK	44	2
Germany	178	38	Total Sent 707			Total Received 57		

Table Thirteen: The Institutional Structure of the Sample

Type	Sent	Received	Type	Sent	Received
Entrepreneurs (all phases)	626	41	University / Consultancy	7	1
Corporate	20	7	Investor	30	3
Incubator / Accelerator	16	2	Government	3	1
NGO	2	2	Total	707	57

4.5 Data Analysis:

Here below is a summary of the analysis covering the survey eight questions. Check the appendix (7) for the survey questions.

Evaluation of local ecosystem:

The general evaluation of the startup ecosystem in Europe varied among participants and it ranged between 3 and 8. On the pillar level, the average scores were between 5 to 7. Risk Acceptance has the lowest score of 5. Physical infrastructure has the highest score. On a regional level, the overall scores ranged between 4 and 8. Around 13% of participants rated their overall ecosystem below the middle score. The standard deviation of scores of pillars

ranged between 1.88 and 2.54. It is expected to have a high variation as the analysis covered a wide geographical area. The picture changes from one region to another, However, most of the regions have low scores on Risk Acceptance and Government Policies.

Check the appendix (8) for a graphical presentation of the results.

18 regions out of 128 REDI regions were represented in my survey and the comparison of the results with REDI 2013 showed a high variation which can be explained partially by the time difference. The variation was up to 7 points difference in some pillars and regions. The area with the most of variation was in London, UK. The one with the least variance was in Bayern, Germany. On pillar level, the highest variation was on Opportunity Startup pillar and the lowest was on Technology Absorption. Appendix (9) provides a graphical presentation of the variances from REDI.

On the country level, 14 countries were represented in my survey. I compared the results with GEDI 2018, the variance was less than the one with REDI 2013. The UK has a considerable positive variance while Turkey has a significant negative variance. The results of France were the closest to GEDI results. From pillars perspective, Globalization has the highest variation and Startup Skills together with Product Innovation have the lowest. Appendix (10) demonstrates the variance from GEDI graphically.

Entrepreneurship Index Usage:

The majority of survey participants 40 out of 57 do not consider entrepreneurship indexes. Among the ones who do, GEM is the most popular. The results are demonstrated in the appendix (11)

Major Challenges for Startup Business:

The challenges entrepreneurs face were perceived differently among different groups of participants. Table Fourteen demonstrates the three major challenges of each group.

The survey results are consistent with the findings of most of the previous studies on business failure. The main challenges the survey participants mentioned were the qualification of human capital and financial capital. Among the most reported reasons for failure in previous studies were cash issues, financing issues, unskilled teams/management.

Table Fourteen: Startups Major Challenges

Group Type	1st Challenge	2nd Challenge	3rd Challenge
Standup	Legal requirements	Capital / Fund	Qualified labor
Startup	Capital / Fund	Qualified labor	Bureaucracy
Scaleup	Capital / Fund	Market competition	Bureaucracy
Incubator/accelerator	Entrepreneurial skills	Feasible product	Availability of funds
University /Consultancy	Market competition	Cultural barrier	
Investor	Market readiness	Qualified team	Innovation level
Corporate	Bureaucracy	Qualified team	Legal requirements
Government	Entrepreneurial Cultural	Availability of funds	Infrastructure
NGO	Entrepreneurial Cultural	Availability of funds	Regulation enforcement
All Types	Capital / Fund	Qualified labor / team	Bureaucracy

Exchanged Services:

Participants are exchanging three services on average. The services that are mostly exchanged within the ecosystem based on the survey were: networking, business consultation, education and training as demonstrated in Appendix (12).

Evaluation of the Ecosystem Actors:

The evaluation of the performance of various actors within the ecosystem revealed a lower rating for the government, NGO, business angels, and venture capitals. The Government has the lowest performance. The standard deviation ranged between 0.8 for entrepreneurs scores and 1.3 for crowdfund. For graphical illustration, check appendix (13). In the third of the regions, venture capitals had the lowest performance score, and Governments had the lowest score in another third. The overall actors' performance didn't vary much across regions. It ranged between 2 in Zurich and 3.8 in North West UK and Sydsverige in Sweden. By comparing the assessment of various pillars of the ecosystem with the assessment of actors within the ecosystem. The relation between the strength of the ecosystem and the performance of actors is not strong as demonstrated in table Fifteen, also check the regression graphs on appendix (14)

Table Fifteen: The Relation Between the Scores of the Ecosystem and the Actors

Scores	Coefficient of correlation	Coefficient of Determination	Conclusion
All Pillars / All actors	0.39	0.15	Moderate correlation
Financing / All type of investors	0.38	0.15	Moderate correlation
Government policies & regulation / Government	0.17	0.03	Weak correlation
Networking / Networker	0.47	0.22	Moderate correlation
Startup Skills / Supporters (Incubators, Accelerators, Business Consultants, Universities)	0.32	0.10	Moderate correlation

Desired Support:

The forms of support that were the most desired among survey participants are: access to fund, business support, entrepreneurial education, and startup skills, and tax reduction. Appendix (15) graphically depict the answers. The situation differs a bit from one region to another and among different types of participants however it is applied to the majority of regions and groups.

Received Support:

66% of participants do not receive any support from a government or non-government startup program. Among the most popular programs: Erasmus for Young Entrepreneurs, Startup Europe, Hessen Idee Stendium and Exist startup grant BMWI. A list for all mentioned supporting programs is available in the appendix (16)

Support Sufficiency:

50% of participants think there are not enough programs to support startups, 30% of them think the opposite and 20% they are not sure about that. The results are demonstrated in the appendix (17).

4.5 Reliability & validity of data:

Twelve of the responses were not complete for the 5th question only. However, the incomplete answers didn't affect the results much since I was focusing on the three major challenges. I picked the most repetitive answers for the first ranked services rather than calculating the total scores of each challenge. In this way, the total number of answers for each challenge didn't affect the interpretation of results.

In order to check the consistency of the answers, I compared the answers of three questions where I felt there should be a logical relation among answers. The first question was the evaluation of the various aspects of the ecosystem, the second question was about the challenges the for-startup businesses and the third question was about desired support. It is expected that the weak areas in the ecosystem affect the business of startup and are reflected in the challenges the startups face. It was also expected that the wishes for the support are in the area of the major challenge or the weakest pillars of the ecosystem. This assumption was true in 82% of the answers. I checked other answers for the remaining 18% in order to understand other reasons for different desires such as the already received support or the opinion on the sufficiency of support. However, I couldn't detect a possible reason in those cases and I couldn't ask for the reason as the survey was run in an anonymous environment.

4.6 Data limitation:

The sample size is small for representing all regions in Europe. In some cases, I received only one answer from a region which is not sufficient to generalize that answer to the whole region. Additionally, it was not possible to assure the capability of each participant to evaluate the ecosystem and to participate in the survey.

5 Chapter Five: Conclusion and Recommendations:

5.1 Conclusion:

The review of previous studies revealed the following findings: in spite of the believed high failure rate among startups, there is still no evidence that supports this claim. Additionally, most of business failure statistics state the failure reasons in general terms and do not explain the relation between failure factors. Researchers found out that the best way to support startups is by developing a favorable startup ecosystem where startups can flourish. The development of a favorable ecosystem requires a holistic policy and the responsibility of development falls upon all actors of the ecosystem not only the government. Entrepreneurship indexes facilitate the development of the ecosystem as they provide a broad picture of the current situation. The concept these indexes highlight is that development should be directed toward the weakest pillar. However, the recommendation for policymakers provided by EIDES is not consistent with the index results. I couldn't gather sufficient evidence that policymakers are taking into consideration the indexes' results or relative recommendations. There are thousands of startups supporting programs, Never the less the effectiveness and the efficiency of these programs haven't been thoroughly checked yet.

The survey used an opinion measure to assess the startup ecosystem, whereas the entrepreneurship indexes used various indicators and several variables on individual and institutional levels. The purpose of the survey questions was to check the ability of entrepreneurship indexes of representing the situation of the ecosystem as it felt by the actors of the same ecosystem. REDI is expected to depict the ecosystem better than GEDI as it covers a narrower scope. However, the most recent data available from REDI was in 2013 and for this reason, the comparison of survey results with REDI was not much meaningful. The comparison of survey results with GEDI also revealed variations that were on average 2 points out of 10 (20%). However, the size of the sample is not sufficient to prove or disprove the hypothesis about the index representation of the ecosystem. Never the less, the survey revealed a weak correlation between the assessment of the ecosystem pillars and the performance of various actors within the ecosystem. The evaluation of actors is not directly covered by the indexes; thus, it requires additional consideration by policymakers.

Most of the survey participants do not use the entrepreneurship indexes: Additionally, during the interviews, it was clear to me that most of the participants haven't heard about these indexes and what type of information they provide or how they may affect their business decisions. Thus, the second hypothesis about high usage of indexes among various actors was rejected.

66% of participants are not benefiting from any startup supporting program. 70% of participants are either not satisfied with the sufficiency of the programs or they are not sure

about it. Moreover, all survey participants who provided a score less than average to the ecosystem, think the supporting programs are not sufficient except for one participant who was not sure about that. Only one of these participants receives support from a program, while the others do not. However, all of them except for one participant exchange services with other actors of the startup ecosystem. Since these participants have rated the ecosystem with a low score, then they think that there is a high chance for improvement and there is a need for support to close that gap. Since they are not benefiting from any program and they do not believe in the sufficiency of the programs, then this indicates either a low awareness of the available startup programs or the difficulty to participate in any of them. Thus, the third hypothesis about the awareness and the benefit the ecosystem actors get from supporting programs was also rejected.

5.2 Further studies and recommendations:

This thesis represents a holistic study considering the overall startup ecosystem in Europe, the research helped to address several topics that need further investigation as below:

- Unified definitions for a startup business at all phases, ecosystem, failure vs success, and failure measure.
- Comparable statistics on startup failure. It is recommended that these statistics are based on monitoring startup and internal surveys in addition to external data sources.
- Evaluation of the effectiveness and efficiency of every single policy or program related to startups or the development of the startup ecosystem
- Comparison of the structure and data sources of entrepreneurship indexes
- Validate the hypothesis of improving the startup ecosystem is best done by improving the weakest pillar.
- Trend analysis of the entrepreneurship indexes results.
- Regular evaluation of various actors within the startup ecosystem.
- Checking alignment between entrepreneurship indexes results and the decisions made for changing or reforming policies and initiated programs.

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7 Appendix:

(1) REDI Regional Results Year 2013. (Acs, Ortega-Argiles, Komlosi, Szerb, & Autio, 2013)

Table 7. The fourteen average equated pillar values of the 125 European Union regions

Regional Code	Regions	Opportunity perception	Strat-up skills	Risk Perception	Networking	Cultural support	Opportunity startup	Technology Absorption	Human Capital	Competition	Product innovation	Process innovation	High growth	Globalization	Financing
AT1	Ostösterreich	0.77	0.86	0.40	0.65	0.48	0.63	0.72	0.40	0.84	0.78	0.53	0.37	0.79	1.00
AT2	Südösterreich	0.41	0.73	0.41	0.57	0.52	0.58	0.68	0.32	0.49	0.58	0.52	0.39	0.64	1.00
AT3	Westösterreich	0.54	0.72	0.42	0.61	0.51	0.60	0.44	0.26	0.67	0.58	0.41	0.32	0.71	1.00
BE1	Region de Bruxelles-Capitale	0.76	0.86	0.90	0.50	0.37	0.34	1.00	1.00	0.58	0.97	0.50	1.00	0.97	0.60
BE2	Vlaams Gewest	0.46	0.64	0.86	0.44	0.47	0.82	0.61	0.73	0.77	0.42	0.73	0.49	0.89	0.81
BE3	Région wallonne	0.46	0.66	0.79	0.42	0.39	0.47	0.57	0.68	0.66	0.57	0.98	0.75	0.97	0.68
CZ	Czech Republic	0.52	0.38	0.15	0.29	0.23	0.20	0.28	0.16	0.24	0.62	1.00	0.86	0.97	0.43
DE1	Baden-Württemberg	0.55	0.64	0.39	0.55	0.66	0.73	0.66	0.46	0.71	0.74	0.41	0.62	0.59	0.81
DE2	Bayern	0.45	0.60	0.37	0.60	0.66	0.61	0.74	0.49	0.67	0.49	0.42	0.77	0.75	0.83
DE3	Berlin	0.78	0.73	0.39	0.57	0.56	0.66	0.90	0.79	1.00	0.89	0.40	0.82	0.87	0.90
DE4	Brandenburg	0.33	0.73	0.37	0.51	0.55	0.54	0.69	0.77	1.00	0.61	0.07	1.00	0.97	0.64
DE5	Bremen	0.56	0.57	0.39	0.74	0.58	0.50	0.53	0.99	0.65	1.00	0.37	0.09	0.97	0.66
DE6	Hamburg	0.94	0.81	0.42	0.67	0.52	0.80	1.00	0.52	1.00	0.69	0.27	0.19	0.50	0.67
DE7	Hessen	0.62	0.62	0.38	0.57	0.59	0.54	0.66	0.73	0.99	0.77	0.53	1.00	0.88	0.72
DE8	Mecklenburg-Vorpommern	0.25	0.41	0.37	0.48	0.62	0.51	0.55	0.16	0.32	0.21	0.24	0.15	0.60	0.66
DE9	Niedersachsen	0.35	0.49	0.36	0.57	0.59	0.58	0.56	0.42	0.60	0.57	0.39	0.80	0.59	0.66
DEA	Nordrhein-Westfalen	0.62	0.44	0.39	0.61	0.65	0.61	0.60	0.53	0.51	0.52	0.42	0.75	0.86	0.52
DEB	Rheinland-Pfalz	0.42	0.58	0.37	0.62	0.55	0.63	0.54	0.51	0.61	0.61	0.64	0.69	0.89	0.59
DEC	Saarland	0.58	0.36	0.39	0.55	0.55	0.60	0.78	0.43	0.55	0.88	0.49	0.66	0.76	0.50
DED	Sachsen	0.41	0.45	0.36	0.56	0.58	0.60	0.76	0.64	0.55	0.30	0.43	0.39	0.70	0.62
DEE	Sachsen-Anhalt	0.25	0.47	0.34	0.52	0.61	0.44	0.48	0.29	0.68	0.82	0.65	0.17	0.75	0.15
DEF	Schleswig-Holstein	0.33	0.55	0.38	0.54	0.67	0.69	0.47	0.40	0.80	0.12	0.47	0.35	0.89	0.48
DEG	Thüringen	0.26	0.42	0.40	0.57	0.59	0.53	0.65	0.42	0.41	0.46	0.10	0.08	0.49	0.76
DK01	Hovedstaden	0.98	0.70	0.62	1.00	1.00	0.98	1.00	1.00	1.00	1.00	0.98	1.00	0.51	0.68
DK02	Sjælland	0.90	0.48	0.64	0.96	1.00	0.95	0.62	0.98	0.69	0.88	0.88	0.81	0.19	0.52
DK03	Syddanmark	0.95	0.45	0.64	0.90	1.00	1.00	0.51	1.00	0.85	1.00	0.35	0.55	0.42	0.62
DK04	Midtjylland	1.00	0.46	0.62	1.00	1.00	1.00	0.68	1.00	0.83	1.00	0.28	0.76	0.31	0.64
DK05	Nordjylland	0.91	0.40	0.61	1.00	1.00	1.00	0.70	1.00	0.80	0.92	0.76	0.76	0.40	1.00
EE	Estonia	0.74	0.85	0.67	0.37	0.27	0.37	0.45	0.58	0.45	0.49	0.56	0.59	0.50	0.22
EL1	Voreia Ellada	0.28	0.29	0.04	0.19	0.02	0.08	0.28	0.33	0.21	0.45	0.50	0.20	0.29	0.56
EL2	Kentriki Ellada	0.22	0.20	0.04	0.15	0.04	0.13	0.22	0.22	0.13	0.47	0.45	0.10	0.17	0.59
EL3	Attiki	0.41	0.49	0.04	0.23	0.04	0.29	0.60	0.57	0.25	0.45	0.59	0.30	0.38	0.57
EL4	Nisia Aigaiou Kriti	0.25	0.35	0.04	0.20	0.03	0.19	0.21	0.20	0.19	0.65	0.47	0.11	0.22	0.41
ES11	Galicia	0.30	0.36	0.33	0.34	0.66	0.56	0.43	0.65	0.28	0.42	0.42	0.20	0.20	0.31
ES12	Principado de Asturias	0.38	0.31	0.34	0.36	0.59	0.51	0.48	0.74	0.33	0.56	0.67	0.29	0.26	0.41
ES13	Cantabria	0.33	0.33	0.33	0.39	0.55	0.42	0.50	0.76	0.35	0.47	0.35	0.18	0.22	0.27
ES21	Pais Vasco	0.49	0.44	0.38	0.39	0.67	0.58	0.60	0.96	0.29	0.41	0.57	0.28	0.23	0.70
ES22	Comunidad Foral de Navarra	0.35	0.37	0.37	0.37	0.59	0.44	0.42	0.98	0.27	0.41	0.58	0.22	0.17	0.46

Regional Code	Regions	Opportunity perception	Strat-up skills	Risk Perception	Networking	Cultural support	Opportunity startup	Technology Absorption	Human Capital	Competition	Product innovation	Process innovation	High growth	Globalization	Financing
ES23	La Rioja	0.35	0.30	0.35	0.38	0.61	0.49	0.50	0.78	0.27	0.30	0.58	0.21	0.17	0.40
ES24	Aragón	0.38	0.38	0.34	0.37	0.59	0.50	0.42	0.72	0.25	0.07	0.34	0.29	0.19	0.40
ES30	Comunidad de Madrid	0.55	0.53	0.36	0.41	0.64	0.39	0.72	0.96	0.48	0.82	0.88	0.50	0.41	0.49
ES41	Castilla y León	0.28	0.32	0.32	0.35	0.53	0.36	0.43	0.60	0.33	0.45	0.59	0.20	0.25	0.40
ES42	Castilla-la Mancha	0.19	0.31	0.31	0.34	0.59	0.42	0.27	0.47	0.27	0.25	0.40	0.21	0.27	0.38
ES43	Extremadura	0.19	0.35	0.32	0.35	0.60	0.48	0.33	0.51	0.26	0.32	0.32	0.13	0.18	0.18
ES51	Cataluna	0.49	0.46	0.36	0.41	0.58	0.30	0.52	0.63	0.40	0.49	0.31	0.35	0.35	0.44
ES52	Comunidad Valenciana	0.42	0.38	0.34	0.37	0.56	0.41	0.45	0.62	0.32	0.50	0.45	0.21	0.24	0.34
ES53	Illes Balears	0.30	0.35	0.35	0.39	0.57	0.44	0.32	0.52	0.35	0.76	0.38	0.20	0.20	0.52
ES61	Andalucia	0.31	0.35	0.31	0.37	0.58	0.31	0.40	0.49	0.33	0.47	0.54	0.26	0.24	0.43
ES62	Región de Murcia	0.29	0.27	0.33	0.35	0.57	0.45	0.41	0.49	0.32	0.44	0.62	0.22	0.22	0.37
ES70	Canarias (ES)	0.36	0.33	0.35	0.37	0.61	0.46	0.31	0.47	0.33	0.36	0.37	0.22	0.26	0.36
FI19	Länsi-Suomi	1.00	1.00	0.60	0.97	0.70	0.92	0.80	0.84	0.36	0.79	0.81	0.57	0.22	0.30
FI1B	Hälska-Uusmaa	0.85	1.00	0.59	0.97	0.77	0.85	1.00	0.89	0.53	0.79	0.72	0.29	0.32	0.40
FI1C	Etelä-Suomi	0.82	1.00	0.60	0.97	0.76	0.93	0.72	0.62	0.51	0.84	0.69	0.44	0.35	0.26
FI1D	Pohjois- ja Itä-Suomi	0.89	1.00	0.57	1.00	0.75	0.84	0.59	0.62	0.39	0.51	0.57	0.37	0.18	0.29
FR1	Île de France	0.76	0.66	0.89	0.61	0.60	0.59	1.00	0.84	0.86	1.00	0.98	1.00	0.86	0.95
FR2	Basen Parnnen	0.36	0.29	0.78	0.49	0.57	0.58	0.76	0.24	0.83	0.55	0.91	0.35	0.64	0.62
FR3	Nord - Pas-de-Calais	0.48	0.30	0.76	0.45	0.60	0.59	0.51	0.46	0.70	0.18	0.54	0.86	0.97	0.53
FR4	Est (FR)	0.31	0.33	0.80	0.49	0.56	0.42	0.59	0.29	0.76	0.56	0.73	0.58	0.45	0.61
FR5	Ouest (FR)	0.33	0.32	0.80	0.55	0.61	0.59	0.80	0.42	0.81	0.51	0.48	0.34	0.48	0.65
FR6	Sud-Ouest (FR)	0.35	0.41	0.86	0.61	0.63	0.61	0.89	0.62	0.61	0.85	0.98	0.53	0.42	0.54
FR7	Centre-Est (FR)	0.48	0.37	0.84	0.57	0.62	0.65	0.81	0.58	0.88	1.00	0.83	0.80	0.70	0.65
FR8	Méditerranée	0.48	0.46	0.88	0.57	0.53	0.44	0.72	0.43	0.93	0.74	0.98	0.55	0.54	0.47
HR03	Jadranska Hrvatska (Adriatic Croatia)	0.49	0.34	0.07	0.23	0.22	0.34	0.31	0.18	0.38	0.20	0.63	0.67	0.77	0.53
HR04	Kontinentalna Hrvatska (Continental Croatia)	0.50	0.31	0.06	0.19	0.22	0.30	0.29	0.19	0.40	0.19	0.71	0.73	0.62	0.26
HU10	Közép-Magyarország	0.54	0.79	0.15	0.29	0.07	0.14	0.52	0.54	0.28	0.22	0.26	0.71	0.29	0.38
HU21	Közép-Dunántúl	0.21	0.35	0.15	0.24	0.18	0.29	0.29	0.25	0.21	0.09	0.24	0.58	0.27	0.05
HU22	Nyugat-Dunántúl	0.30	0.31	0.14	0.24	0.18	0.31	0.37	0.29	0.17	0.04	0.15	0.27	0.43	0.10
HU23	Dél-Dunántúl	0.23	0.37	0.15	0.26	0.18	0.33	0.26	0.25	0.19	0.21	0.24	0.53	0.33	0.08
HU31	Észak-Magyarország	0.21	0.33	0.12	0.21	0.15	0.25	0.35	0.22	0.23	0.06	0.22	0.97	0.20	0.07
HU32	Észak-Alföld	0.14	0.43	0.13	0.20	0.16	0.25	0.33	0.21	0.20	0.13	0.31	0.34	0.25	0.09
HU33	Dél-Alföld	0.16	0.39	0.14	0.21	0.15	0.23	0.23	0.18	0.19	0.19	0.24	0.40	0.27	0.11
IE01	Border, Midland and Western	0.51	0.74	0.96	0.64	0.73	0.60	0.69	0.80	0.60	0.41	0.64	0.77	0.66	0.64
IE02	Southern and Eastern	0.56	0.87	0.94	0.72	0.72	0.61	0.69	0.99	1.00	0.74	0.69	0.73	0.51	0.72
ITC	Nord-Ovest	0.50	0.39	0.54	0.25	0.37	0.27	0.56	0.20	0.50	0.36	0.44	0.58	0.57	0.63
ITF	Sud	0.41	0.39	0.52	0.25	0.19	0.01	0.38	0.20	0.36	0.48	0.63	0.29	0.22	0.35

Regional Code	Regions	Opportunity perception	Strat-up skills	Risk Perception	Networking	Cultural support	Opportunity startup	Technology Absorption	Human Capital	Competition	Product innovation	Process innovation	High growth	Globalization	Financing
ITG	Isole	0.33	0.35	0.49	0.25	0.25	0.05	0.27	0.22	0.45	0.31	0.58	0.30	0.29	0.30
ITH	Nord-Est	0.42	0.35	0.55	0.29	0.40	0.33	0.43	0.27	0.44	0.50	0.47	0.17	0.24	0.63
ITI	Centro (IT)	0.42	0.40	0.55	0.27	0.33	0.19	0.41	0.24	0.51	0.42	0.75	0.31	0.37	0.47
LT	Lithuania	0.47	0.46	0.53	0.24	0.23	0.16	0.27	0.90	0.23	0.23	0.52	0.44	0.49	0.31
LV	Latvia	0.50	0.54	0.41	0.21	0.19	0.17	0.30	0.51	0.36	0.18	0.27	0.77	0.46	0.29
NL1	Noord-Nederland	0.39	0.71	0.29	0.80	1.00	0.96	0.45	0.30	0.52	0.78	0.28	0.42	0.48	0.61
NL2	Oost-Nederland	0.60	0.81	0.30	0.82	0.93	0.71	0.65	0.32	0.72	0.89	0.49	0.56	0.45	0.56
NL3	West-Nederland	0.88	1.00	0.29	0.88	1.00	0.79	0.76	0.55	0.90	0.83	0.42	0.67	0.65	0.89
NL4	Zuid-Nederland	0.66	0.82	0.29	0.80	0.97	0.66	0.65	0.47	0.72	0.65	0.38	0.49	0.74	0.61
PL1	Region Centralny	0.50	0.65	0.45	0.48	0.32	0.07	0.11	0.38	0.30	0.95	0.44	0.76	0.79	0.21
PL2	Region Poludniowy	0.53	0.58	0.42	0.47	0.28	0.06	0.19	0.22	0.21	0.74	0.17	0.76	0.75	0.68
PL3	Region Wschodni	0.43	0.41	0.40	0.46	0.34	0.09	0.10	0.18	0.20	0.46	0.36	0.80	0.43	0.21
PL4	Region Pólnocno-Zachodni	0.45	0.57	0.44	0.51	0.27	0.07	0.13	0.17	0.14	0.52	0.40	0.67	0.65	0.63
PL5	Region Południowo-Zachodni	0.50	0.49	0.44	0.50	0.30	0.12	0.17	0.26	0.20	0.86	0.31	0.67	0.66	0.55
PL6	Region Pólnocny	0.50	0.50	0.45	0.47	0.34	0.10	0.11	0.12	0.15	0.57	0.49	0.55	0.64	0.64
PT11	Norte	0.38	0.31	0.47	0.24	0.26	0.35	0.14	0.22	0.27	0.20	0.60	0.14	0.53	0.37
PT15	Algarve	0.37	0.33	0.45	0.27	0.47	0.53	0.28	0.17	0.33	0.11	0.35	0.27	0.81	0.14
PT16	Centro (PT)	0.12	0.32	0.45	0.23	0.30	0.42	0.10	0.26	0.22	0.23	0.73	0.21	0.67	0.14
PT17	Lisboa	0.58	0.56	0.55	0.31	0.37	0.43	0.23	0.53	0.40	0.38	0.67	0.53	0.74	0.54
PT18	Alentejo	0.31	0.29	0.48	0.26	0.47	0.56	0.04	0.23	0.26	0.11	0.78	0.35	0.85	0.10
RO1	Macroregiunea una	0.34	0.04	0.75	0.08	0.14	0.08	0.13	0.23	0.20	0.03	0.36	0.23	0.45	0.16
RO2	Macroregiunea doi	0.33	0.03	0.80	0.06	0.05	0.01	0.09	0.15	0.18	0.15	0.34	0.22	0.49	0.26
RO3	Macroregiunea trei	0.43	0.04	0.77	0.09	0.03	0.01	0.19	0.36	0.18	0.09	0.55	0.57	0.48	0.13
RO4	Macroregiunea patru	0.31	0.03	0.79	0.07	0.08	0.02	0.17	0.24	0.17	0.03	0.30	0.65	0.49	0.09
SE11	Stockholm	1.00	1.00	0.73	1.00	0.77	1.00	0.95	1.00	0.63	0.91	0.48	0.42	0.59	1.00
SE12	Östra Mellansverige	0.99	0.64	0.77	1.00	0.82	1.00	0.63	0.59	0.56	1.00	0.56	0.77	0.57	0.77
SE21	Småland med Öarna	1.00	0.54	0.77	1.00	0.86	0.99	0.41	0.38	0.51	0.25	0.29	0.23	0.37	0.52
SE22	Sydsverige	1.00	0.72	0.88	1.00	0.81	0.97	0.59	0.80	0.63	0.58	0.38	0.73	0.56	0.71
SE23	Vastsverige	1.00	0.67	0.78	0.99	0.81	1.00	0.57	1.00	0.64	0.52	0.81	0.57	0.54	0.72
SE31	Norra Mellansverige	0.98	0.54	0.79	0.95	0.71	0.93	0.50	0.65	0.41	0.33	0.40	0.40	0.48	0.86
SE32	Mellersta Norrland	0.99	0.64	0.72	1.00	0.71	1.00	0.66	0.64	0.63	0.26	0.17	0.07	0.51	0.94
SE33	Övre Norrland	1.00	0.65	0.82	0.97	0.77	0.90	0.38	0.64	0.61	0.64	0.76	0.40	0.47	1.00
SI01	Vzhodna Slovenija	0.44	0.48	0.26	0.52	0.53	0.41	0.50	0.46	0.33	0.63	0.54	0.58	0.62	0.47
SI02	Zahodna Slovenija	0.53	0.88	0.27	0.54	0.50	0.39	0.67	0.68	0.42	0.69	0.77	0.53	0.65	0.37
SK01	Bratislavský kraj	0.66	0.69	0.23	0.45	0.06	0.23	0.55	0.48	0.27	1.00	0.83	1.00	0.93	1.00
SK02	Západné Slovensko	0.20	0.30	0.20	0.46	0.06	0.16	0.29	0.12	0.11	0.10	0.44	0.44	0.60	0.96
SK03	Stredné Slovensko	0.18	0.32	0.21	0.45	0.06	0.16	0.21	0.15	0.13	0.09	0.41	0.59	0.59	0.57
SK04	Východné Slovensko	0.20	0.24	0.20	0.43	0.05	0.15	0.17	0.12	0.13	0.26	0.43	0.51	0.47	0.73

Regional Code	Regions	Opportunity perception	Strat-up skills	Risk Perception	Networking	Cultural support	Opportunity startup	Technology Absorption	Human Capital	Competition	Product innovation	Process innovation	High growth	Globalization	Financing
UKC	North East (UK)	0.60	0.48	0.95	0.54	0.64	0.75	0.55	0.52	0.83	0.52	0.32	0.61	0.19	0.28
UKD	North West (UK)	0.66	0.58	0.99	0.55	0.63	0.75	0.68	0.55	0.96	0.48	0.57	0.81	0.39	0.34
UKE	Yorkshire and The Humber	0.62	0.58	1.00	0.56	0.64	0.68	0.62	0.52	0.91	0.44	0.34	0.76	0.33	0.50
UKF	East Midlands (UK)	0.54	0.58	1.00	0.59	0.71	0.85	0.62	0.53	0.75	0.32	0.44	0.54	0.36	0.50
UKG	West Midlands (UK)	0.61	0.56	0.98	0.53	0.65	0.71	0.72	0.55	0.86	0.43	0.41	0.73	0.48	0.39
UKH	East of England	0.55	0.67	1.00	0.60	0.63	0.73	0.69	0.47	0.92	0.64	0.98	0.64	0.45	0.36
UKI	London	0.84	1.00	0.98	0.69	0.62	0.58	1.00	0.95	1.00	0.75	0.63	1.00	1.00	0.68
UKJ	South East (UK)	0.64	0.79	1.00	0.65	0.68	0.84	1.00	0.69	1.00	0.46	0.52	0.85	0.58	0.56
UKK	South West (UK)	0.48	0.63	1.00	0.64	0.68	0.82	0.62	0.59	0.94	0.52	0.50	0.64	0.39	0.53
UKL	Wales	0.45	0.52	1.00	0.56	0.65	0.70	0.58	0.61	0.78	0.45	0.37	0.78	0.44	0.32
UKM	Scotland	0.48	0.55	1.00	0.58	0.71	0.92	0.82	0.69	0.92	0.38	0.44	0.71	0.47	0.32
UKN	Northern Ireland (UK)	0.51	0.48	0.88	0.49	0.72	0.74	0.59	0.44	0.88	0.50	0.47	0.88	0.43	0.44

(2) EIDES Scores of Countries on Pillar Level. Data were extracted from (Autio, Szerb, Komlósi, & Tiszberger, 2018)

Country	Culture & Informal Institutions	Formal Institutions, Regulation & taxation	Market Conditions	Physical Infrastructure	Human Capital	Knowledge Creation & Dissemination	Finance	Networking & Support	EIDES
DK	100	83.9	93.7	98.1	87.4	81.9	68.2	72.5	80.7
SE	87.4	74.6	73.8	71.9	85.9	93.4	71.4	66.3	75.6
LU	80.4	100	45.1	100	68.9	66	90.2	98.6	74
FI	97.3	81.4	51.1	68.7	98.4	75.9	78.3	59.2	72.4
UK	80	80.6	97.4	63	78.3	71.8	96.4	62.5	63.7
NL	95.2	83.1	69.1	76.9	76.1	95.4	70.5	61.4	62.2
DE	72.2	79.2	100	61.3	54.4	85.6	57.7	55.2	63.8
FR	53.9	44.9	60.8	49	43.7	46.4	60.8	56.8	49.6
BE	63.4	51.4	69.3	55.3	53.6	61.7	54.2	56	57.6
AT	62.5	61.3	48.2	66.7	54.6	66.3	44.7	45.3	54.3
ES	36.8	36.4	42.4	48.5	58.9	34.6	47	58.1	44.2
PT	29.4	40.2	30.6	52.6	45.1	35.8	35.2	42.2	38.1
PL	34.5	32	33.3	41	29	28.8	36.9	31.3	32.9
IT	24.7	27.5	33.7	34.4	30.1	34.1	29.2	53.4	32.6
IE	69.4	62.9	97.7	43.1	51.3	63	52	77.9	61.3
CZ	45.5	36.8	68.9	39.8	40.6	61.1	39.3	29.5	42.3
LT	32.1	35.7	47	48.2	42.9	31.6	51.1	47.3	40.6
SI	36.4	36.5	40.6	36.7	43.6	47.6	32.5	42.5	38.4
MT	39.3	67.8	77.9	52.4	47.3	61.9	50.5	59.9	54.3
CY	34.1	45.4	29.1	42.5	31.2	31.7	47.5	39.4	36.3
EE	55.2	54.7	30	45.8	66.9	46.3	75.1	62.3	51
LV	32.9	29.6	20.6	43.2	34.2	25.8	51.3	35.7	32.9
HR	25.7	31.6	42	30.8	35.7	21.8	30.6	35.6	30.6
HU	25	30.5	27.6	33.6	34.5	34.8	33.4	31.1	30.1
SK	35.7	29.4	33.5	19.8	34.4	37.1	37	21.9	29.9
GR	25.7	20.3	26.4	24.3	29	21.6	19.2	32.4	24.3
BG	17	25.9	11.1	28.8	26.3	25	27.6	39.3	23.9
RO	16.7	24.7	7.7	32.4	26	21.5	20.6	35.1	21.6
EU	50.30	50.30	50.31	50.31	50.30	50.30	50.30	50.31	47.11

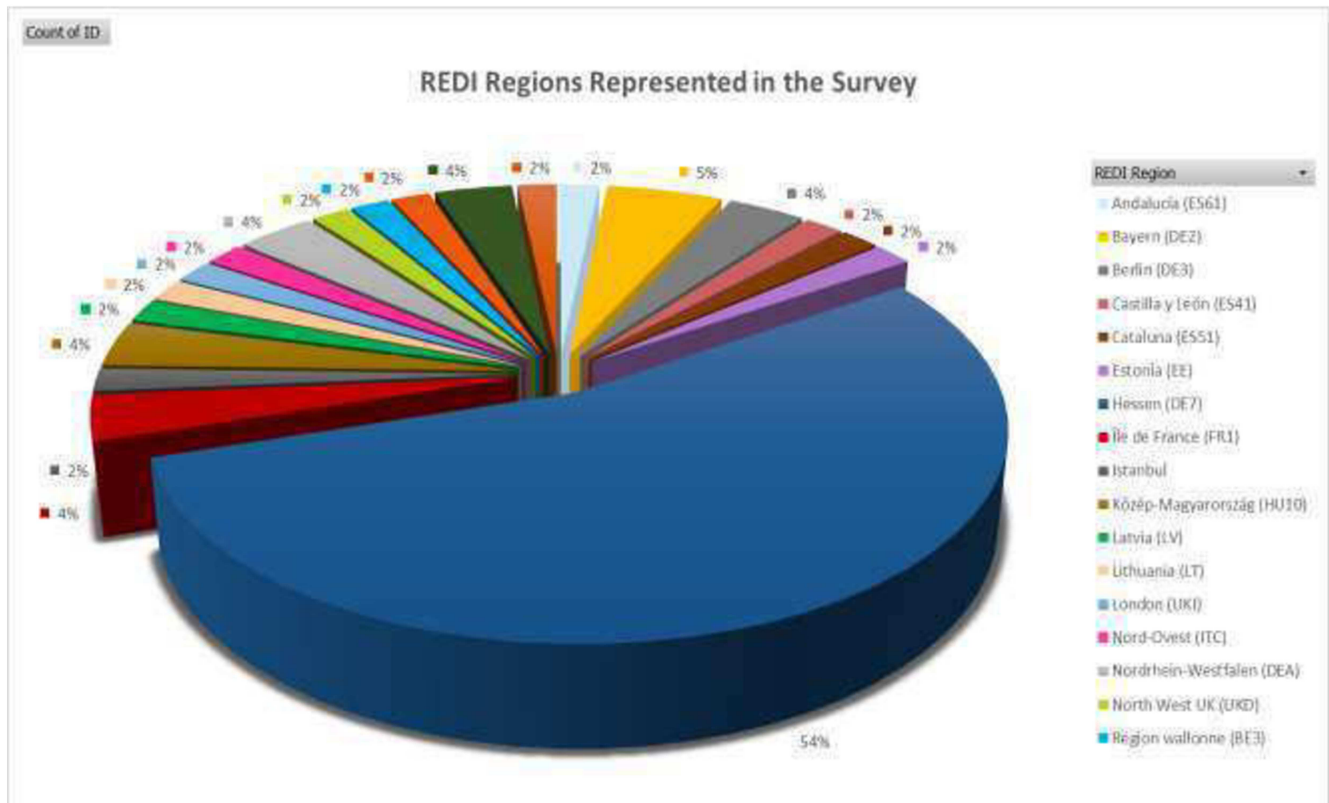
(3) EIDES Recommendation to Policymakers on Efforts Allocation. Data were extracted from (Autio, Szerb, Komlósi, & Tiszberger, 2018)

Country	General				Standup				Startup				Scaleup			
	Culture & Informal Institutions	Formal Institutions, Regulation & taxation	Market Conditions	Physical Infrastructure	Human Capital	Knowledge Creation & Dissemination	Finance	Networking & Support	Human Capital	Knowledge Creation & Dissemination	Finance	Networking & Support	Human Capital	Knowledge Creation & Dissemination	Finance	Networking & Support
DK		3			8	4	17	21	2	6	6			4	15	14
SE		6	8	1			12	9	4		5	30			13	12
LU			59			12								29		
FI			25	1		5	3	22		8		9			5	22
UK								100								
NL								100								
DE					5			61	5		8		18		3	
FR		9			10	2		34	20	18			7			
BE		13		1	13		8	14	9	1	13	7	9	2	8	2
AT			10				17	12	7		13	25			12	4
ES	16	15	4			22				18	5			20		
PT	24		19		2	5				7	14	5	2	10	12	
PL		4	4		2	15		4	18	11	4	13	13	7		5
IT	21	16					5		21	8	21		5		3	
IE				3					32		32		17	5	11	
CZ		9		1	9		6	28	3		3	26	1		8	6
LT	21	13				15				36				15		
SI	7	7					8				24	31			14	9
MT	19				22		8				3	22	6	6		14
CY	2		11		12	16						22	12	10		15
EE			45	2		7				16				16		14
LV		6	36			16				26				16		
HR	11					22				33	3	11	3	11		6
HU	22		13							4		61				
SK				4				15				61				20
GR		12				16	10			19	28		3		12	
BG	29		71													
RO			75								25					
EU	6.14	4.04	13.57	0.46	2.96	5.61	3.36	15.00	4.32	7.54	7.39	11.54	3.43	5.39	4.14	5.11

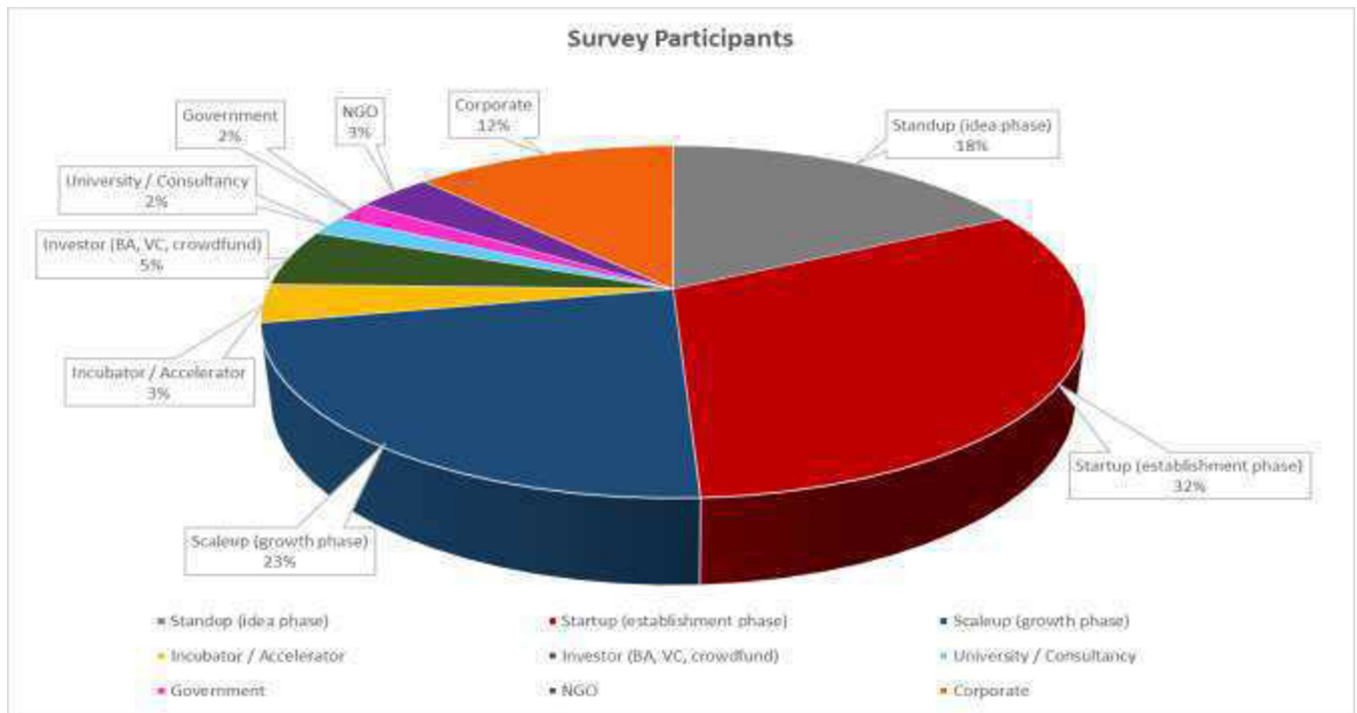
(4) IDE Country Scores (Kantis et al, 2018)

Country	Demand condition	Business structure	STI Platform	Entrepreneurial human capital	Social condition	Culture	Education	Social capital	Financing	Policies and regulation
International benchmark	75	72	79	83	72	69	80	89	89	85
Czech Republic	51	42	49	60	60	18	47	55	58	41
Croatia	47	29	24	35	43	2	46	37	32	35
Estonia	53	33	43	48	52	47	75	73	69	75
Greece	50	29	26	1	29	34	53	15	37	29
Hungary	55	32	34	47	52	35	47	55	49	28
Israel	49	48	80	33	52	67	52	81	56	39
Latvia	47	30	22	47	48	40	68	51	47	58
Russia	62	29	37	25	46	24	55	29	52	32
Turkey	61	25	27	38	43	44	37	49	34	50
Italy	54	43	38	28	49	48	53	32	60	43
Austria	50	52	66	32	66	63	53	63	62	72
Belgium	54	52	62	26	63	29	68	77	69	81
France	54	56	56	43	57	38	59	61	57	82
Germany	58	57	69	51	66	54	53	74	73	67
Netherlands	55	56	63	49	68	48	78	79	85	82
Poland	59	32	30	34	51	36	46	59	58	55
Portugal	55	29	41	22	48	44	62	56	44	69
Spain	54	38	37	24	42	21	50	49	54	52
Switzerland	22	65	75	55	71	53	72	79	78	75
Denmark	42	53	71	60	66	4	88	57	84	83
Finland	50	45	77	50	63	69	74	78	85	73
Ireland	55	69	48	60	64	72	54	54	69	71
Norway	36	60	53	51	75	62	67	65	56	53
Sweden	49	54	79	40	67	57	68	73	87	54
United Kingdom	54	53	58	56	61	59	56	66	80	54
United States	57	58	69	71	62	63	56	84	79	63
World Average	54	36	35	38	47	41	50	54	48	52
Europe Average	51	44	51	41	56	43	59	59	62	58

(5) Regional Representation of the Sample



(6) Institutional Representation of the Sample



(7) The Questionnaire



Purpose & Instructions

This questionnaire is part of a master thesis which discusses the ways of supporting startups in Europe. The purpose of the thesis is to help to reduce the failure rate among startups by addressing challenges they face and guiding entrepreneurs to available supporting tools and guiding the policymakers to the areas that require additional development.

It is prepared by Malda El Chalak who is following a master study in international management and finance at Kaiserslautern University of Applied Sciences.

All information will be kept confidential and will not be used for other purposes. Filling this questionnaire is expected to take 10 - 20 minutes. Kindly send the answers back to malda.el.chalak@gmail.com

1. What types of business do you represent? Please check the box

- | | | |
|--|---|-------------------------------------|
| <input type="checkbox"/> Standup (idea phase) | <input type="checkbox"/> Incubator / Accelerator | <input type="checkbox"/> Government |
| <input type="checkbox"/> Startup (establishment phase) | <input type="checkbox"/> Investor / Financial Institute | <input type="checkbox"/> NGO |
| <input type="checkbox"/> Scaleup (growth phase) | <input type="checkbox"/> University / Consultancy | <input type="checkbox"/> Corporate |
| <input type="checkbox"/> Others, please mention..... | | |

2. Provide the location of your business (city & postcode)

3. How would you evaluate the below aspects of the business environment at your local location (not the whole country)? In case of conflicting scores that you have on specific aspects of the environment, give your general opinion of the whole environment. Choose from the scale between 0 and 10 where 0 means not at all and 10 means always.

- Opportunity perception (Can the people easily identify opportunities for starting a business and does the institutional environment makes it possible to act on those opportunities?)
- Opportunity startup (Are entrepreneurs motivated by the opportunities rather than their need for being self-employed or having additional income?)
- High growth (Do businesses have the capacity for high growth?)
- Risk Acceptance (Do people accept high risks?)
- Cultural support (Does the business environment support entrepreneurship?)
- Physical infrastructure (Is there good infrastructure available for businesses?)
- Technology absorption (Is the technology sector large?)
- Product innovation (Are businesses able to develop new products and integrate new technology?)
- Process Innovation (Do businesses use new technology in their processes?)
- Quality of living (Are you satisfied with the living conditions in comparison with the cost of living?)
- Financing (Are there enough financial resources available?)
- Government policies & regulation (Is local legislation favorable and enforced with low bureaucracy?)
- Startup skills (Do entrepreneurs have the necessary business skills?)
- Human capital (Does the labor market allow free movement of skillful people?)
- Networking (Are there good connections among different stakeholders of business environment?)
- Competition (Are entrepreneurs able to create a unique and competitive product?)
- Globalization (Are entrepreneurs ready for global competition?)

4. Do you consider any of the below indexes when you take a decision regarding your business? Please check the boxes of all the ones you consider.

- | | |
|---|---|
| <input type="checkbox"/> Global Entrepreneurship Monitor (GEM) | <input type="checkbox"/> The entrepreneurship index |
| <input type="checkbox"/> Global Entrepreneurship Index (GEDI) | <input type="checkbox"/> Digital Entrepreneurship Systems (EIDES) |
| <input type="checkbox"/> Regional Entrepreneurship & Development Index (REDI) | <input type="checkbox"/> The European Digital City Index (EDCi) |
| <input type="checkbox"/> Entrepreneurial ecosystem index | <input type="checkbox"/> I don't use any of these indexes |

5. In case you are an entrepreneur, rank the below challenges facing your business.: Choose 1 for the biggest challenge and 10 for the lowest.

Internal operation & management	.....	Qualified labor	.....
Physical & technical infrastructure	.....	Business networks	.....
Legal requirements	.....	Bureaucracy	.....
Market competition	.....	Capital / Fund	.....
Corruption	.....	Cultural barrier	.....

In case you are representing a financial institution, investor, or a corporate rank the below challenges that represent the main reasons for rejecting a financing application or not being satisfied with your investment. (This question refers to actual reasons that you experienced and not to theoretical investing criteria) Choose 1 for the biggest challenge and 10 for the lowest.

Feasible product	.....	Innovation level	.....
IP protection	.....	Qualified team	.....
Market readiness	.....	Operation risk	.....
Strategic planning	.....	Availability of funds	.....

In case you are representing an incubator, accelerator, business consultant, or education/training institute, rank the below challenges that entrepreneurs face and limit their ability to grow their businesses. Choose 1 for the biggest challenge and 10 for the lowest.

Entrepreneurial skills	.....	Business knowledge	.....
Technical skills	.....	Labor skills	.....
Physical & technical Infrastructure	.....	Business networks	.....
Government policy & regulations	.....	Availability of funds	.....
Feasible product	.....	Cultural barrier	.....

In case you are representing the government or non-governmental organization, rank the below challenges that affect the effectiveness of the programs that support entrepreneurs. Choose 1 for the biggest challenge and 10 for the lowest.

Startup skills	.....	Entrepreneurial culture	.....
Infrastructure	.....	Business networks	.....
Simplified regulations	.....	Regulation enforcement	.....
Innovation	.....	Availability of funds	.....

6. What type of support do you receive as (or you provide to) entrepreneurs? Select all the applicable ones by checking the boxes

- | | |
|---|---|
| <input type="checkbox"/> Financial services (credit, guarantee, grants, etc.) | <input type="checkbox"/> Education/training |
| <input type="checkbox"/> Technical support (specific technology) | <input type="checkbox"/> Research and development support |
| <input type="checkbox"/> Immigrant integration service | <input type="checkbox"/> Networking services |
| <input type="checkbox"/> Others please specify..... | <input type="checkbox"/> Business consultation |

7. How do you evaluate the performance of the other parts of the ecosystem? Choose a number between 1 and 5, where 1 reflects an extremely unfavorable situation and 5 reflects the perfect situation.

- | | |
|-------------------------------------|--|
| Entrepreneurs | Incubator / Accelerator (specialists in supporting entrepreneurs) |
| Business Consultancy | Business Angel (capital provider for startups) |
| University | Venture Capital (investors in risky & high growth startups) |
| Corporate | Crowdfunding (investors of a small amount of money) |
| Government | Private investor |
| Non-Governmental Organization | Networker (intermediator who facilitates networking through a platform or program) |

8. Where do you wish the supporting programs to focus on? Choose up to only 3 by checking the relevant boxes.

- | | |
|---|--|
| <input type="checkbox"/> Physical infrastructure | <input type="checkbox"/> Legal requirements and anti-bureaucracy |
| <input type="checkbox"/> Technical infrastructure | <input type="checkbox"/> Law enforcement and anti-corruption |
| <input type="checkbox"/> R&D support | <input type="checkbox"/> Competitive markets and anti-monopoly |
| <input type="checkbox"/> Business support | <input type="checkbox"/> Cultural barriers |
| <input type="checkbox"/> Access to funds | <input type="checkbox"/> Globalization |
| <input type="checkbox"/> Access to human capital | <input type="checkbox"/> Networking |
| <input type="checkbox"/> Tax reduction | <input type="checkbox"/> Second chance for failed startups |
| <input type="checkbox"/> Entrepreneurial education & startup skills | <input type="checkbox"/> Others, please specify..... |

9. Name up to 3 programs and initiatives that support your business (e.g. Erasmus for Young Entrepreneurs, Competitiveness of Enterprises and Small and Medium-sized Enterprises (COSME), Startup Europe, etc.)

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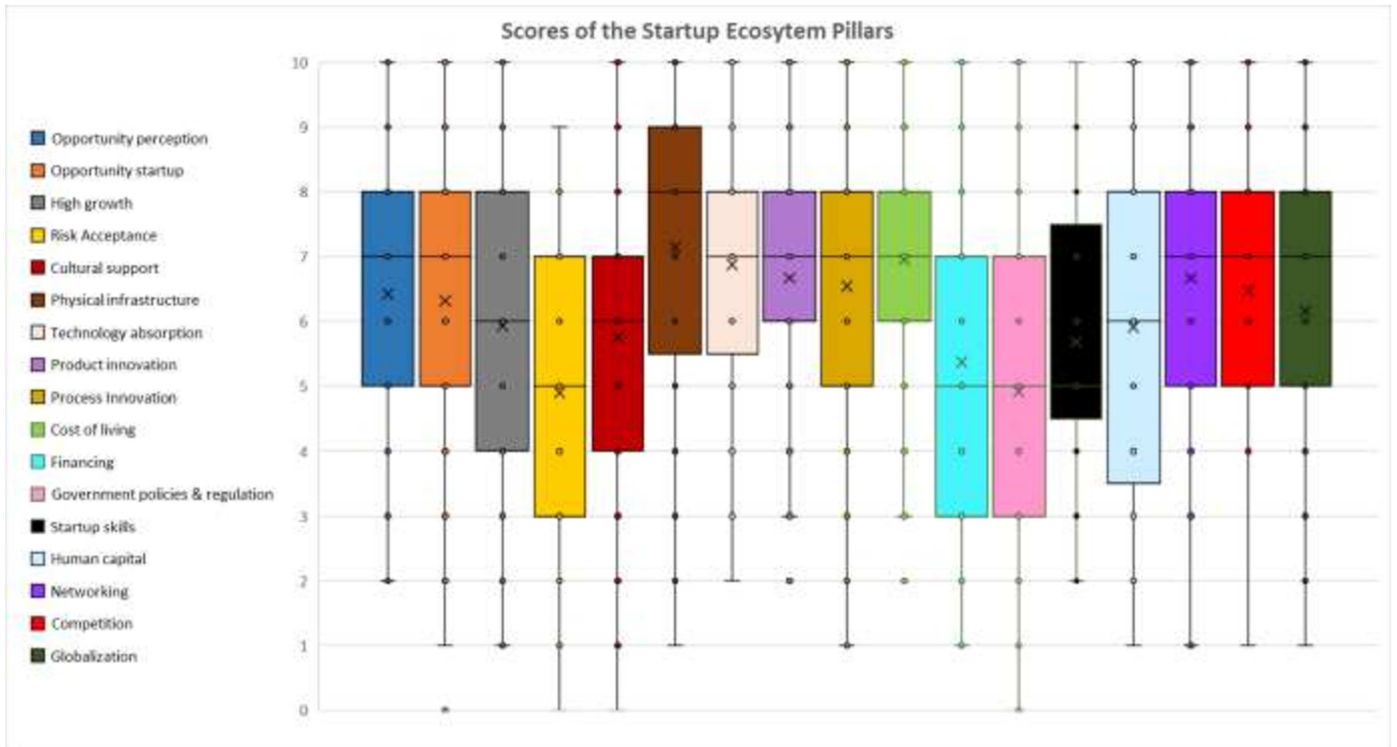
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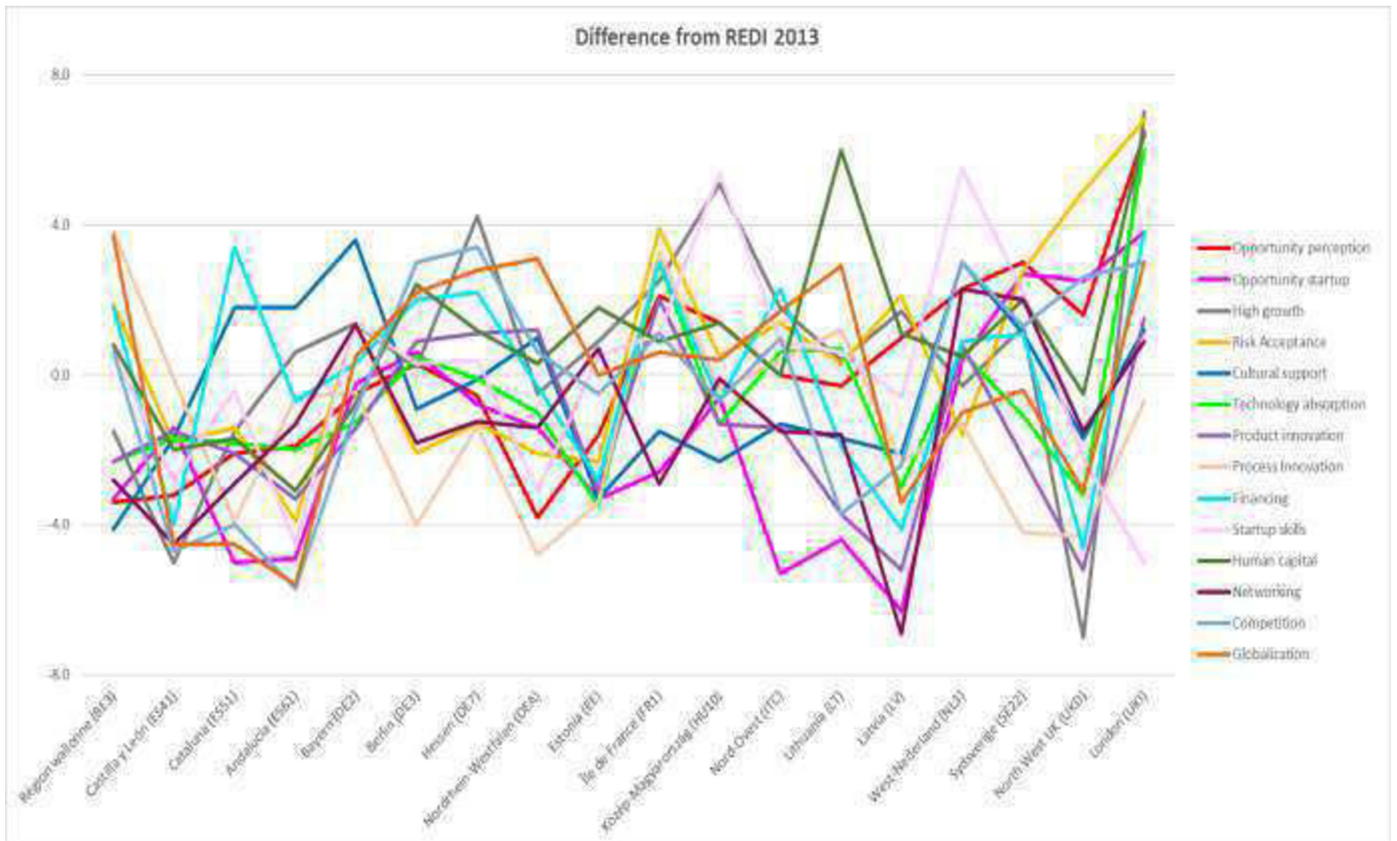
10. In your opinion, are there sufficient programs supporting entrepreneurs?

- Yes No I don't know

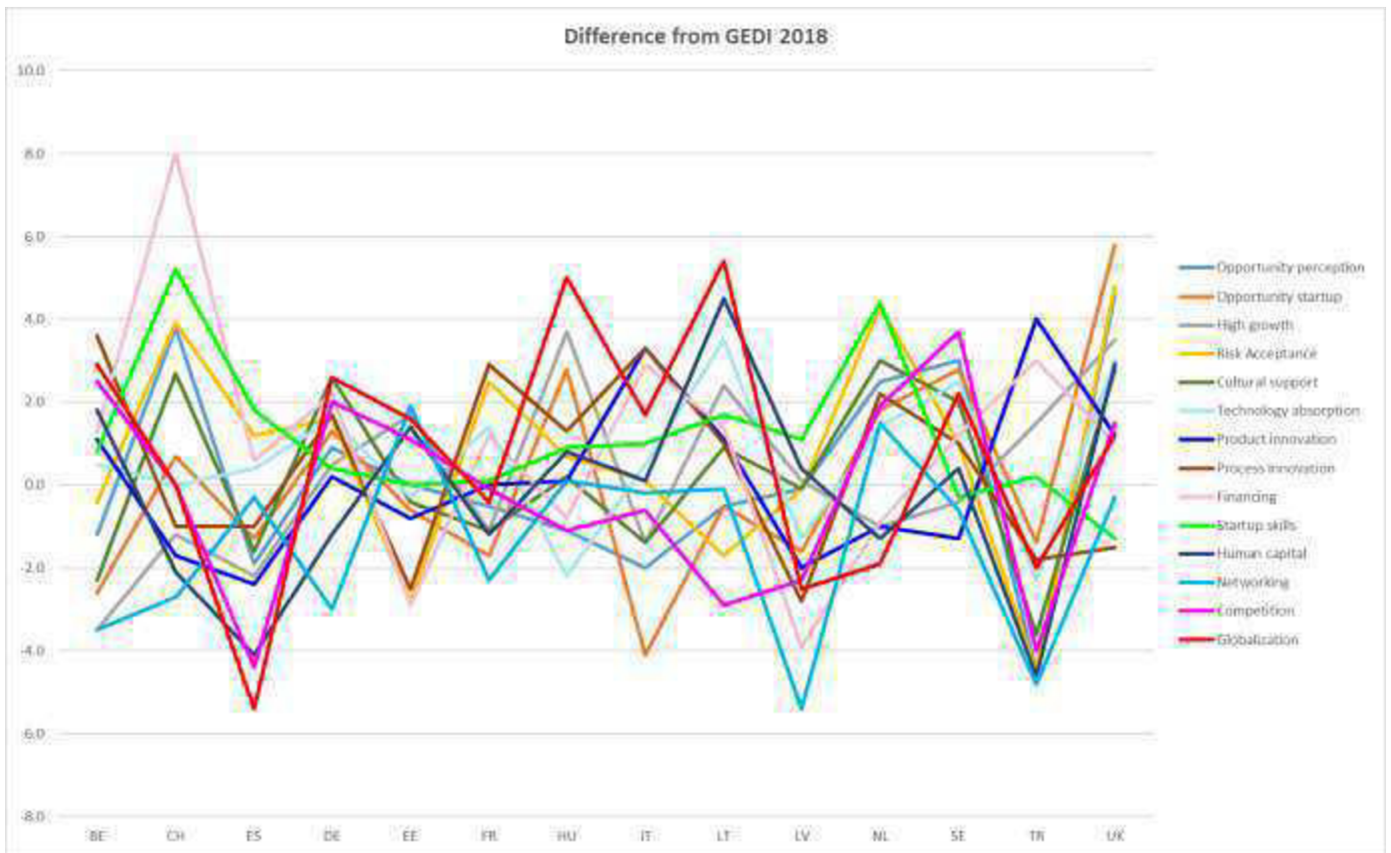
(8) Evaluation of the Startups Ecosystem



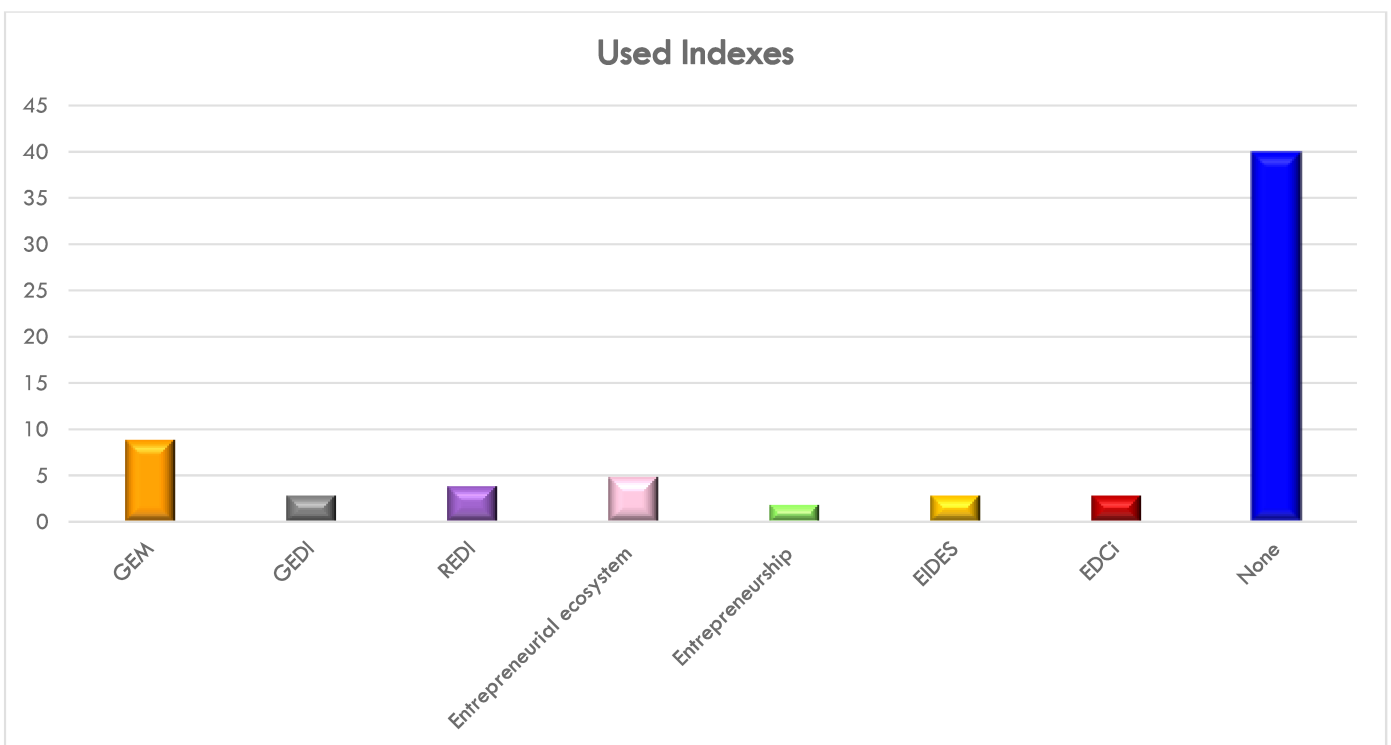
(9) Deviation of Survey Results from REDI



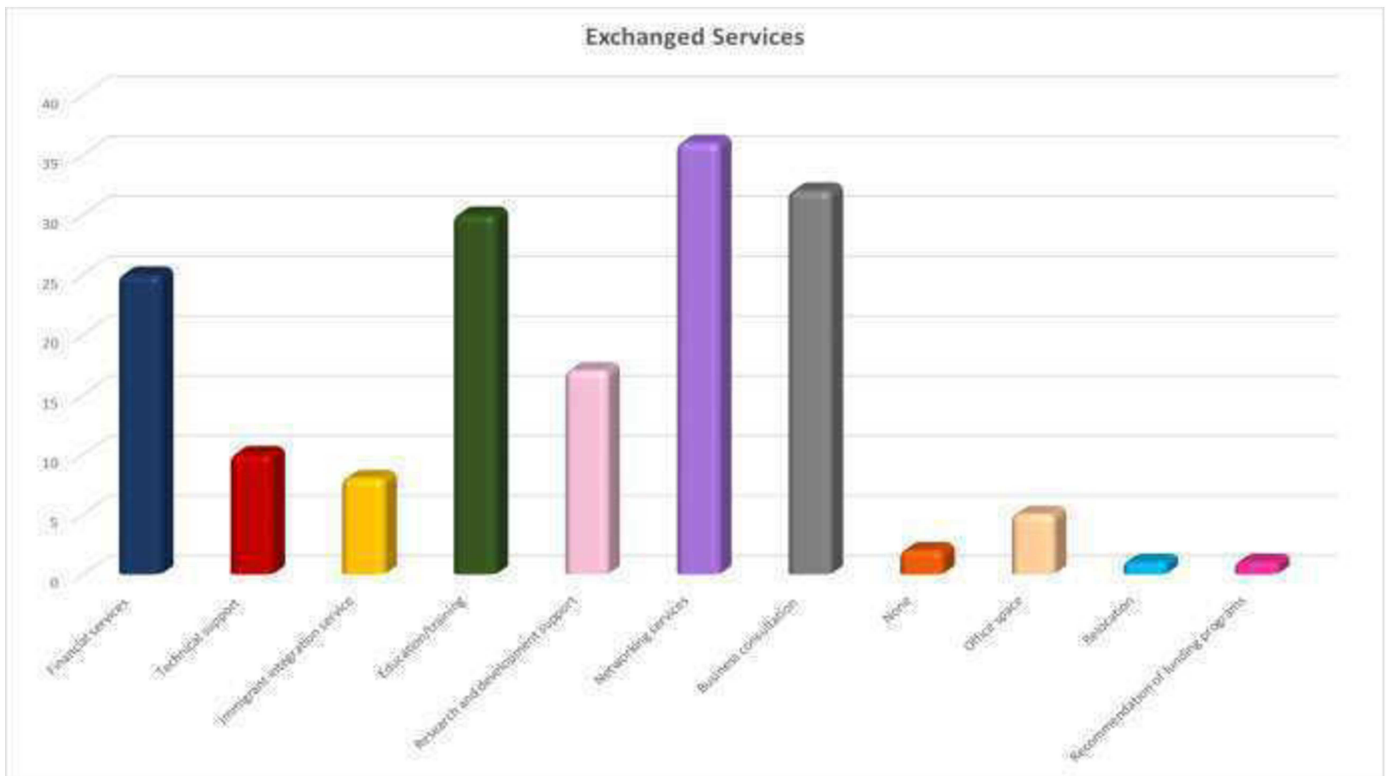
(10) Deviation of Survey Results from GEDI



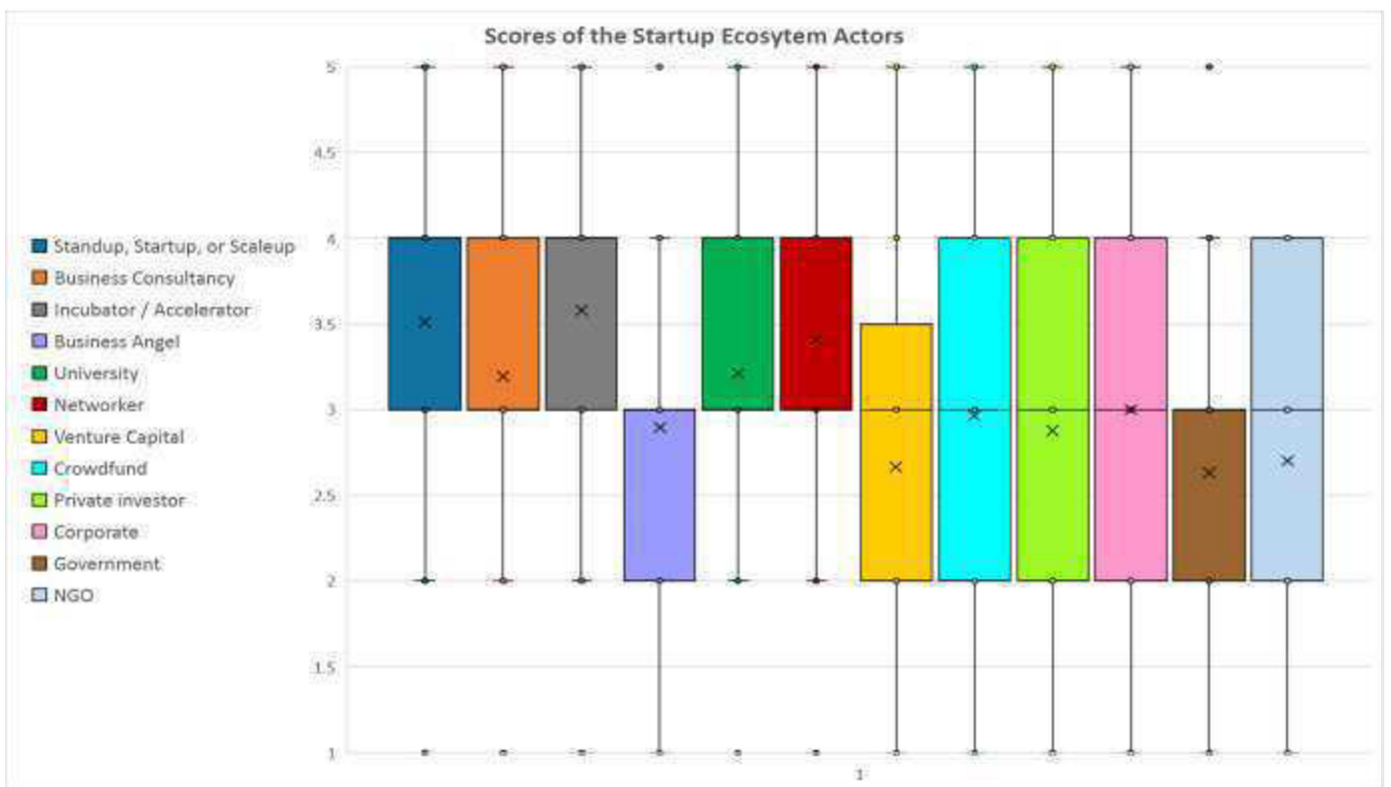
(11) Usage of Entrepreneurship Indexes



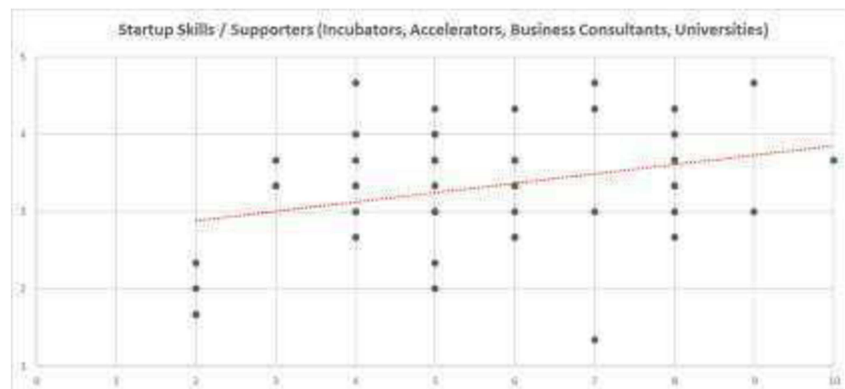
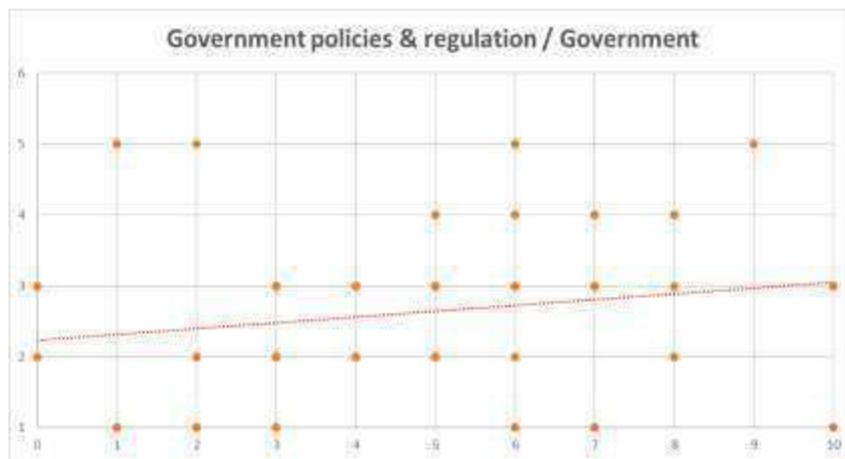
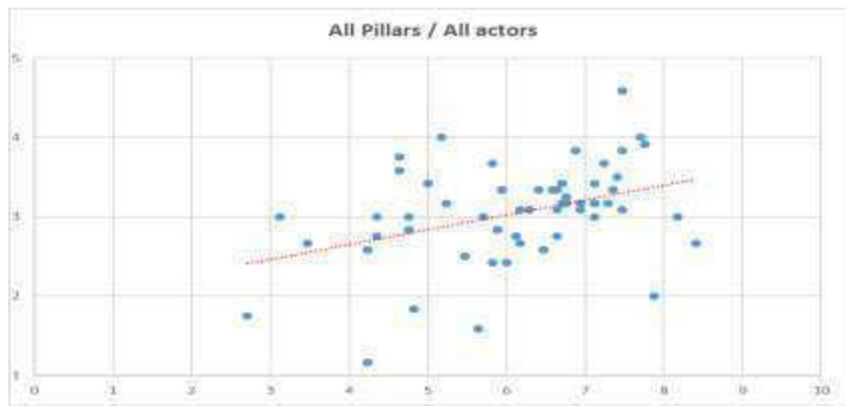
(12) Services Exchanged in The Startups Ecosystem

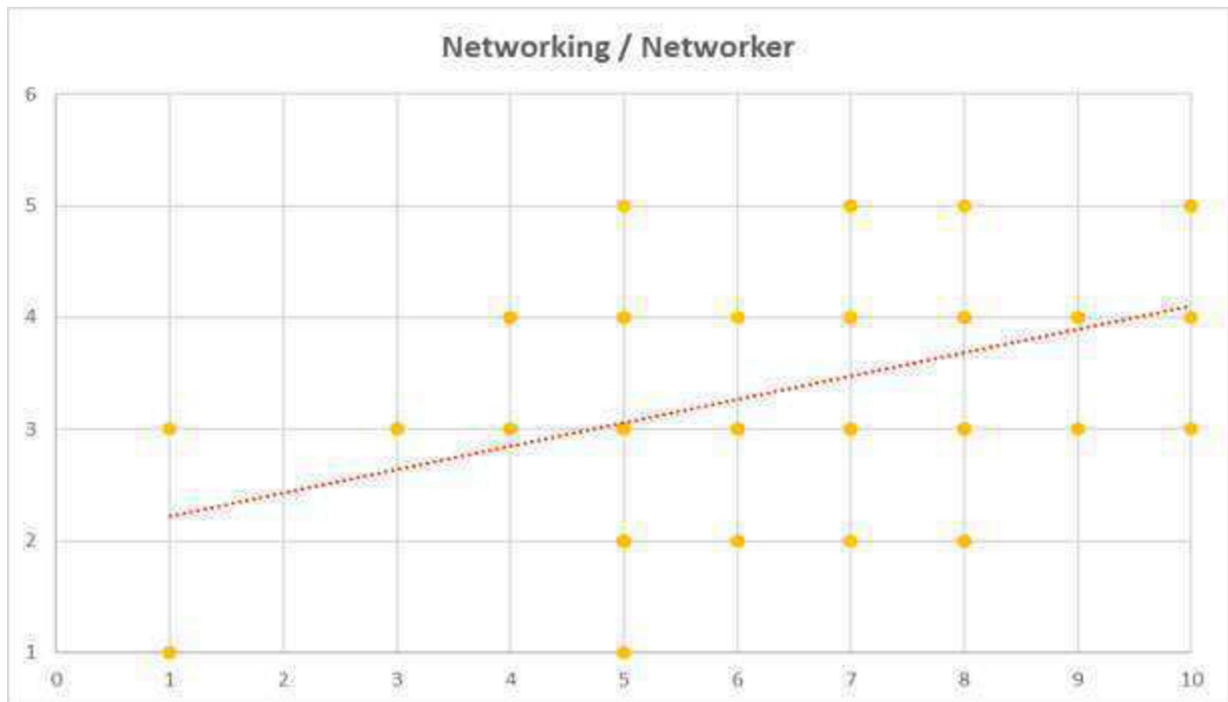


(13) Evaluation of Actors in the Startups Ecosystem

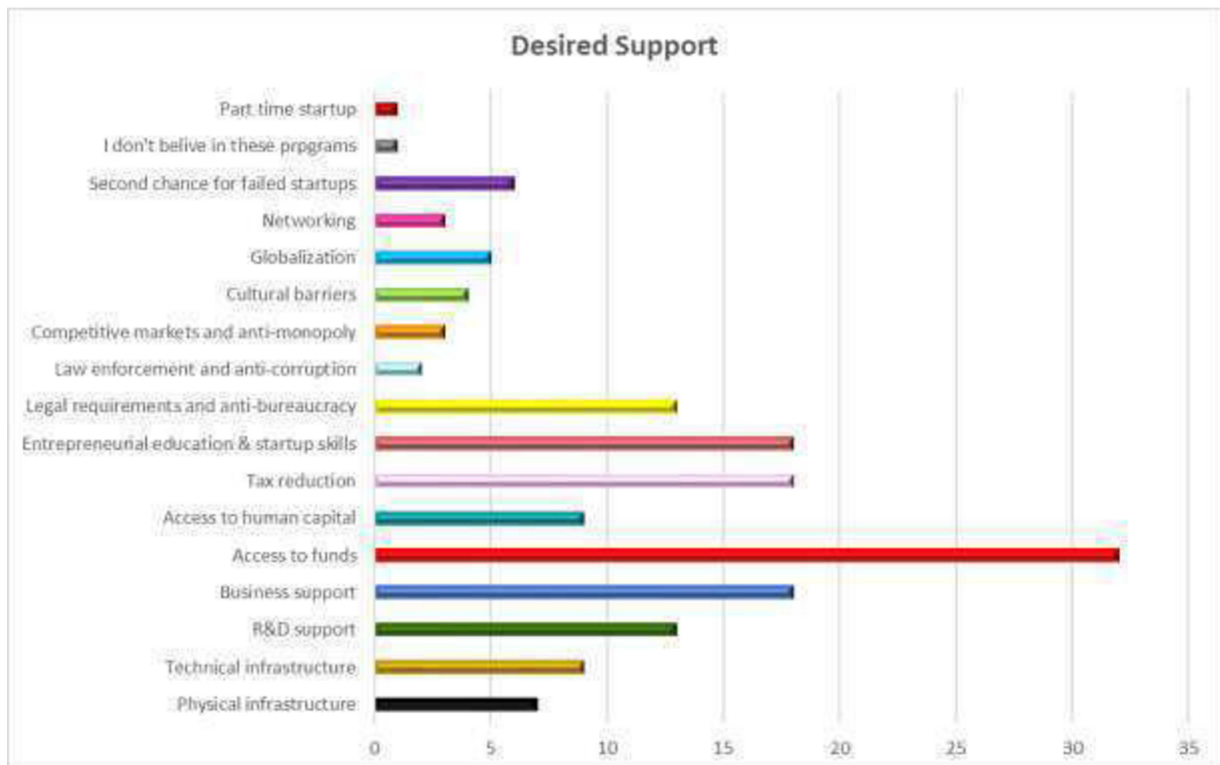


(14) The relation between the Scores for the Ecosystem Pillars and Actors





(15) Desired Support among Survey Participants



(16) List of Startup Supporting Programs and Institutes the Survey Participants are Benefiting from.

Program / Supporting Institute
ADE2020 Castille and Leon regional government
British mobile network (GSMA)
Bundesweite Gründerinnenagentur (BGA)
Competitiveness of Enterprises and Small and Medium-sized Enterprises (COSME)
Deutsche Bank
Digital Wallonia
Erasmus for Young Entrepreneurs
European Fund for Regional Development (EFRE)
Exist startup grant BMWI
Financeerungtur für Social Entrepreneurship (FASE)
Frankfurt Gründerfonds
GIZ by Leipzig University
H2020 SME Instrument
Hessen Idee Stendium
Hessen Ministry of Economics
IHK Mentoring program
Innovative Future Fund
Innovationskredit Hessen (including 70 % guarantee of the payment of loan)
IXL CENTER - 10X program
JP Morgen
Jumpp -Ihr Sprungbrett in die Selbständigkeit
KFW Studienkredit
Mittelständische Beteiligungs Gesellschaft Hessen
Reaktor
Santander Explorer
Startup Europe
Startup Grind
Social entrepreneurship Netzwerk (SEND)
Talent Return Local Valladolid Mayor Program
Vilnius Tech Park
We Forum - The Forum of Young Global Leaders (WEF YGL)

(17) The opinion of Survey Participants on the sufficiency of Startups Supporting Programs

