

Lappeenranta University of Technology

School of Business and Management

International Marketing Management

SKEMA Business School

Sophia Antipolis

International Marketing and Business Development

Joni Saarela

**BARRIERS AND MOTIVATIONS FOR ACADEMIC ENTREPRENEURSHIP
IN FINLAND**

Supervisors: Professor Olli Kuivalainen, LUT

Professor Markku Ikävalko, LUT

Professor Peter Spier, SKEMA

Examiners: Professor Olli Kuivalainen, LUT

Professor Peter Spier, SKEMA

ABSTRACT

Author:	Saarela, Joni Onni
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This study was conducted by using quantitative methods and the purpose of the study is to examine factors that act as motivators or barriers towards entrepreneurial intentions amongst academics in Finnish society. The topic is intriguing, as the rising level of education correlates negatively with entrepreneurial intentions, which is a unique feature by international standards. Factors that are affecting entrepreneurial intentions can be divided into five different main categories: personality traits, the effects of political decisions and social networks, the attitude of prevailing culture towards entrepreneurship and life situation. This study analyzed the differences between three respondent groups. These groups were entrepreneurs vs. non-entrepreneurs, entrepreneurial students vs. students from other study fields. Lastly the differences between genders were examined. As a result, the biggest barriers were caused by political decisions and the risk associated with it. The strongest motivational factors appeared to be certain strong personality traits.

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Tämä tilastollisella tutkimusotteella toteutettu lopputyö käsittelee akateemisen yrittäjyyteen vaikuttavia motivoivia ja estäviä tekijöitä Suomalaisessa yhteiskunnassa. Aiheesta mielenkiintoisen tekee nousevan koulutustason negatiivinen korrelaatio yrittäjyshalukkuuden kanssa, joka on piirteeltään uniikki kansainvälisesti vertailtuna. Yrittäjyshalukkuuteen vaikuttavat tekijät voidaan luokitella viiteen eri pääluokkaan: persoonallisuuden piirteisiin, sosiaalisen verkoston vaikutukset, poliittisten päätösten vaikutukset, ympäröivän kulttuurin asenne yrittäjyyttä kohtaan sekä elämäntilanne. Tutkimuksessa analysoitiin kolmen eri kyselyyn osallistuneen vastaajaryhmän välisiä eroja, jotka olivat akateemiset yrittäjät ja ei-yrittäjät, yrittäjyysopintoja opiskelleet verrattuna muita pää- tai sivuaineita opiskelleet. Viimeisimpänä tutkittiin sukupuolten välisiä eroja vastauksissa. Lopputuloksena suurimmat esteet yrittäjyydelle paljastuivat poliittisten päätösten seurauksista ja siihen liittyvästä kasvaneesta riskistä. Vahvimpina motivaatiotekijöinä taas toimivat monet vahvat persoonallisuuspiirteet.

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Eniten tahtoisin kiittää kuitenkin vanhempiani kaikesta tuesta, jonka olette minulle antaneet opiskelujeni aikana ja erityisesti ennen sitä. Teidän sinnikkyytenne kasvatukseni suhteen on ollut suurin syy siihen, miksi kirjoitan näitä sanoja, jotka lopputyöstäni löytyvät. Olen tätä Pro Gradua tehdessäni tutustunut käsitteeseen ”authoritative parenting”, josta tunnistan jokaisen siihen liittyvän kuvauksen perusteella oman kasvatukseni. Sillä on ollut iso rooli siinä, minkä kaltaiseksi olen tähän päivään muovautunut ja mitä olen elämässäni onnistunut saavuttamaan.

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”For time and the world do not stand still. Change is the law of life. And those who look only to the past or present are certain to miss the future.” – John F. Kennedy

Helsingissä 31.8.2016, Joni Saarela

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LIST OF ABBREVIATIONS

GEM	= Global Entrepreneurship Monitor
EC	= Entrepreneurial competence
EI	= Entrepreneurial intentions
ESE	= Entrepreneurial self-efficacy
ICT	= Information and communications technology
OLS	= Ordinary Least Squares
SME	= Small and medium-sized enterprises
VAT	= Value added tax

1. INTRODUCTION

This chapter introduces the topic of this study and points out the structure of the study. Also research questions and both, limitations and delimitations of this study are represented in this chapter.

1.1. Background of the study

Recently, Finland has been nicknamed as “the sick man of Europe” due to its struggle with economic performance. Finland has had the worst performance of economy within the common-currency area during the first three quarters of year 2015 and its economy has been contracted continuously since 2012. In addition to this, the relative deficit is more than Italy’s, not to mention about slowly, but constantly raising unemployment levels. (Bloomberg.com, 2016; Stat.fi, 2015)

A way to fix this would be aggressive creation of new companies that would be growth oriented and practice trading over the borders. However, Finland has very small interest towards entrepreneurship compared to other countries. In Global Entrepreneurship Monitor’s report (Arenius & Autio, 1999), the entrepreneurial potential was measured in ten different countries that were taken into comparison, which resulted in Finland having the lowest interest towards entrepreneurship. The results were stunning: the survey revealed that only 1,4 percent of Finnish adults were seriously considering starting their own business, compared to the highest result, 8,5 percent, acquired by the United States. The difference was six fold. No clear reason have been found why certain countries lack entrepreneurial activity and previous studies have been suggesting either cultural differences, different set of minds, attitudes, economic growth and the level of education as factors that affect entrepreneurial activity (Casson, cited in Littunen, 2000). In Finland, establishing a company is still seen characteristically as a career option for those with low or medium level of education. In addition, by the time GEM Consortium’s report was made, Finnish economy was still booming and yet the entrepreneurial activities remained low. The report also revealed multiple other factors that should justify high level of interest towards entrepreneurial activities that Finland possessed, which still did not reflect in the activity level. (Arenius & Autio, 1999)

These special features that were related to Finland's generally low entrepreneurial activities would offer topics for multiple thesis or researches, but this study will concentrate on studying the phenomena of low academic entrepreneurship and the reasons behind its existence. The other mentioned deviations will be gone through to the extent that they are related to low level of academic entrepreneurship in Finland. This phenomena is important to study, as academic entrepreneurship is needed in order to create companies that do not only operate on domestic markets and stay as small, family-owned companies. The level of education brings higher level of knowledge about innovations and success factors for entrepreneurship. This contributes directly to growth-orientation as well and these type of companies are essential for Finnish economy. It has been suggested that one reason behind low motivation of academic entrepreneurship could be as well the knowledge that education brings along (Arenius & Autio, 1999). The more knowledge, the more individuals are aware of the risks associated with entrepreneurship. In addition, the level of education justifies higher salary level, which then makes other career options and unemployment more attractive options than entrepreneurship (Henrekson & Rosenberg, 2000). Therefore the ultimate aim of this thesis is to find out those invisible factors that are behind low academic entrepreneurial activity and to build up a strategy to promote entrepreneurship as a career option for academics.

Whether you are an academic, considering of becoming one or you are interested in entrepreneurship, either from professional or personal interest point of view, this research gives you an overall picture of the factors that motivates and prevents people becoming entrepreneurs.

1.2. Research objectives and research questions

The previous researches done on entrepreneurship and its motives and barriers, the field of research leaves few noticeable gaps. Neither the qualities of potential entrepreneurs have not been charted or even studied well, as all the researches seem to concentrate on spotting the qualities from those, who have already become entrepreneurs. To some extent this makes sense, as validating the group to be studied can be almost impossible. One way of screening the target group would be using the findings acquired from studying existing entrepreneurs to spot those with the same

qualities and see if these kind of people would end up as entrepreneurs more likely than the others. Academic entrepreneurship has been studied to some extent, but most of the studies seem to concentrate either on university spin-offs or academics, who have already started their businesses. Students' academic entrepreneurship seems to have lack of studies, as well as the reason why academic entrepreneurship has such low level of activity in Finland.

The study will examine various elements associated with entrepreneurial intentions, including personality traits, surrounding culture and its attitude towards entrepreneurial activities and related possibility of failure, the effect of political decisions and the level of taxation and social security for entrepreneurs, as well as the rigidity of hiring and its termination due to strong labor unions. Also the entrepreneurial support services are examined, as they have been seen relatively confusing and unclear (Arenius & Autio, 1999). In addition to this, also the effect of life situation is included and the effect of social networks, especially social exposure, that according to existing literature, has shown to be a strong indicator for entrepreneurship (Feldman et al., 1991). Also the level of entrepreneurial education, IPR policies of universities and industry cooperation are taken into examination of this study. From the latterly mentioned ones, especially the level of entrepreneurial education is interesting, as according to literature, it is expected to have relatively strong effect on self-efficacy, one of the strongest personality traits promoting entrepreneurial intentions (Schmitt-Rodermund, 2004; Zhao et al., 2005).

Main research question:

“Which are the factors that have the strongest effect on entrepreneurial intentions within Finnish academic context?”

When the factors that are affecting negatively the most to academic entrepreneurship are found, a strategy to overcome these factors is designed and the qualities of a Finnish entrepreneur are being charted in order to promote these qualities.

Sub question 1:

“How the factors that are affecting negatively with entrepreneurial intentions could be strengthened to overcome the obstacles?”

Sub question 2:

“Which type of means should be implemented to encourage academic entrepreneurship?”

In order to answer the last research question, the study reflects the existing theory from those countries that have been successful in academic entrepreneurship to the data acquired from formed self-report. Also the differences between academic entrepreneurs and non-entrepreneurs will be examined to spot the critical factors that are affecting entrepreneurial intentions.

1.3. Limitations and delimitations

The thesis concentrates on studying academic entrepreneurship. In this context the primary group of the study are academic students, which refers to undergraduate, graduate and doctoral students, as well as graduates and dropouts. Altogether three different samples are being studied, in where the academic entrepreneurs belong to secondary area of study, so that the results from studying primary group could be reflected to existing entrepreneurs in order to find similarities. Lower education levels will be considered to the extinct in where they help to understand the reasons behind lack of entrepreneurial motivation in Finland. In other terms, including other educational levels would make the topic too wide and drive away the focus from examining the reasons, why Finland is a special case in terms of the level of education related to demotivation towards entrepreneurship.

Differences in entrepreneurial intentions between genders will be taken account in the research from the point of view of personality traits. The distribution of genders is relatively equal in Finnish context, but the entrepreneurial intentions tend to be lower amongst women. Yet, this is not only a Finnish characteristic, but the same signs can be seen in other nations as well (Tilastokeskus, 2016).

According to Langowitz et al. (2006), entrepreneurs can be divided either to opportunity entrepreneurs or necessity entrepreneurs. In innovative-driven economies, over three quarters of entrepreneurs are opportunity-motivated (Kelley et al., 2016). Therefore this thesis will mostly concentrate on opportunity entrepreneurs, as Finland can be considered as innovative-driven economy and also due to Finnish social security

system, it is very unlikely to end up in a situation, in where someone must become an entrepreneur to acquire money for basic needs and therefore these possible situations can be seen as borderline cases. Yet, the effect of unemployment or its threat are taken into examination briefly.

This thesis will concentrate on academic entrepreneurship in Finland. This is due to fact that countries have differences in their cultures, legislations, economies and possibilities to become an entrepreneur in general. Therefore expanding this study to cover multiple countries or continents would significantly decrease the validity of acquired results.

After finding out the factors affecting to academic entrepreneurship, a strategy is built around these observations to promote academic entrepreneurship. No plan of implementation will be presented in the thesis in order to delimit the length of the thesis.

It should be noticed that most of the research on factors affecting entrepreneurship has been done elsewhere than in Finland and the results may not be always applicable in Finnish context. In addition, the literature about academic entrepreneurship moots mostly university spin-offs and entrepreneurship occurring in industrial cooperation, rather than student or graduate entrepreneurship. Therefore it must be taken into account, that the theory might not reflect perfectly the studied topic that mostly concentrates to other type of academic entrepreneurship than spin-offs. In addition to this, especially in theories that moot entrepreneurial attributes, do not often have clear consensus and therefore for every theory supporting an entrepreneurial attribute, at least one research can be found that claims the opposite. In order to limit the research scope, the results of this thesis will not be reflected to other countries' motives and barriers for entrepreneurship, as they vary depending on the country which makes the reflection too wide topic.

1.4. Key definitions

Entrepreneurship

“Entrepreneurship refers to an individual’s ability to turn ideas into action. It includes creativity, innovation and risk taking, as well as the ability to plan and manage projects in order to achieve objectives. This supports everyone in day to day life at home and

in society, employees in being aware of the context of their work and being able to seize opportunities, and is a foundation for more specific skills and knowledge needed by entrepreneurs establishing social or commercial activity” (Commission of the European Communities, 2005).

Academic Entrepreneurship

Most often the term academic entrepreneurship in academic literature refers to situations in where university staff decides to start commercializing an innovation done in the university with the university’s industrial partners (O’Shea et al., 2004). In this context, academic entrepreneurship refers to any entrepreneurial action executed by academic student or higher degree education institution staff member. Therefore Henrekson’s and Rosenberg’s (2000) definition of academic entrepreneurship fits into this context: “Academic entrepreneurship seen in a broad generic sense referring to a variety of ways in which academics go beyond the production of potentially useful knowledge”.

Authoritative parenting

According to Baumrind (1991), authoritative parenting is a type of parenting that is providing support and rules for the children, but simultaneously granting autonomy for them. It is researched that this type of parenting is supporting child’s ability to acquire autonomy, self-confidence, leadership skills and the feeling of control. Therefore it assists adolescents to develop strong independency and industriousness – qualities that are seen as entrepreneurial. (Schmitt-Rodermund, 2004)

Locus of control

Locus of control can be either external or internal. The person with external locus of control “belief that fate, luck, or outside forces are responsible what happens”. A person with internal locus of control instead has a “belief that one’s own ability, effort, or actions determine what happens”. (Rotter, 2004)

Self-efficacy

According to Wood and Bandura (1989), perceived self-efficacy refers to a person’s belief of his own capability to mobilize his motivation, cognitive resources and courses of action in order to gain control of the events occurring in his life.

Entrepreneurial intentions

Factors affecting to entrepreneurship can be divided into two sections: contextual factors that consist of political, social and economic variables and individual domains that are the factors that are being affected by both, rational and intuitive way of thinking and aim to reach personally set goals. These two dimensions combined are responsible for the development of entrepreneurial intentions. (Boyd & Vozikis, 1994; Bird, 1988) In the psychological literature, intentions have been proven to be the best predictive quality for planned, rare and unpredictable behavior in the future (Krueger et al., 2000a).

Emotional intelligence

“Emotional intelligence reflects the ability to read and understand others in social contexts, to detect the nuances of emotional reactions, and to utilize such knowledge to influence others through emotional regulation and control” (Prati et al., 2003).

Entrepreneurial self-efficacy

Entrepreneurial self-efficacy is seen as a construct that is measuring an individual's beliefs in his own abilities to successfully establish and run his own business venture (McGee et al., 2009).

Push and pull factors

In this context, push factors are referring to factors that are pushing towards entrepreneurship, such as unemployment or its threat, insufficient personal income or availability of open job positions. Pull factors instead are factors that are attracting to entrepreneurship for other reasons than necessity, such as spotting feasible business opportunities. (Gilad & Levine, 1986) The latterly mentioned usually appears in a non-threatening situation, in where the person own necessary amounts of personal savings for starting a new venture (Ritsilä & Tervo, 2002).

Social exposure

This term in this context refers to the influence of positive entrepreneurial role models that can boost individual's entrepreneurial self-efficacy. Usually these role models are either family members, such as parents or a close acquaintance, but the role model

can be also someone not known beforehand, for example an entrepreneur as a visiting lecturer on a university course.

1.5. Structure of the thesis

The structure of this study follows the traditional structure of master's thesis. The flow of the study is demonstrated in Figure 1. The first part introduces the background of the study and points out the objectives of this study, as well as research questions. Both, limitations and delimitations for the study are included in this part.

The second part introduces the findings of previously made studies about academic entrepreneurship and its motivators and barriers. Each of these findings that can be applied in this research context, are introduced separately.

In the third part the chosen research methodology for this study is being introduced. The chapter also mouts how the data is being collected and which type of analysis methods are used to analyze the data. The chapter also considers validity and reliability of the study.

The next chapter first introduces the results generally and then continues introducing the main motives and barriers for academic entrepreneurship in Finnish context that point out from the data. After these factors are compared to the data acquired from entrepreneurs in order to find out which of them are affecting the most to entrepreneurial intentions.

Discussion and conclusion chapter then gives recommendations for how these arising factors can be overcome or supported, depending on their nature, as well as answers the research questions. In the end recommendations for future research are given on this specific area of study.

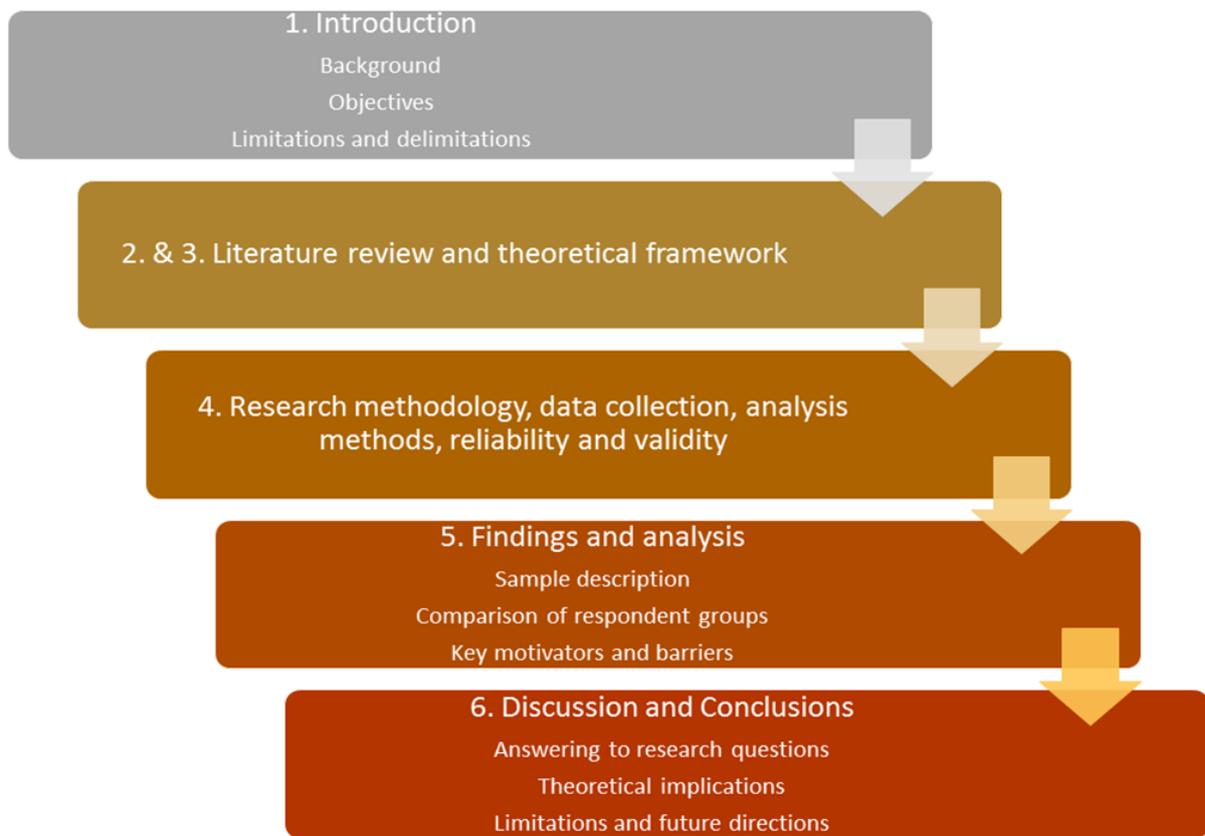


Figure 1. Structure of the thesis

2. LITERATURE REVIEW

The purpose of this chapter is to give an overall picture of the content of the thesis to its reader, whether the person is already familiar with the topic or not. Hirsjärvi et al. (2013, 121) say that the purpose for literature review is to cover existing perspectives to the topic, the way they have been studied earlier and to connect and validate the current research with the researches made previously. This literature review accompanies the reader through the main theories that are considering motivations and barriers for academic entrepreneurship.

In entrepreneurial research, there are various factors that are generally affecting to intentions of becoming an entrepreneur. Roughly, these factors can be divided into common background factors, personality factors and situational factors (Huuskonen, 1989; Huuskonen et al., 1990).

The most prestigious kept values amongst entrepreneurs are independence and non-dependency. (Leppäalho, 1981, 24-25; Virtanen & Keskinen, 2000) The view of existing world that acts as a base for decision-making progress consists of the information acquired from the current situation, personal goals and the means of how to acquire these goals. Therefore positive ambience towards entrepreneurship affects the values and attitudes of an individual and therefore affects the career decisions made later on in life. Yet, individual's positive view towards entrepreneurship can form also from other sources than the effect of the environment around him. (Huuskonen, 1992)

Psychology -based researches that are concerning personality attributes which have effect on entrepreneurial intentions (EI), are most often based to three main schools: motive theory, trait theory and cognitive theory. From motive theories the most popular one is McClelland's need for achievement motive theory. The theory is based on desire to acquire personal achievements that drives entrepreneurs to perform beyond the norm. Yet, the theory is seen such narrow that it does not consider other types of personality qualities that might have effect on entrepreneurial intentions (Sagie & Elizur, 1999). The trait theory, also known as personality theory, takes into account other types of personality traits than only the need for personal achievement. In this theory, also personality attributes such as risk aversion, innovativeness, adaptability, conscientiousness, uncertainty avoidance with many other traits are being studied simultaneously. The approach in the theory is limited to an assumption that the beginning of developing a business is determined by one individual. (Littunen, 2000; Busenitz, 1999; McCarthy, 2000) The school of cognitive theory tries to explain entrepreneurship as a definitive thought process in where the entrepreneurs are able to develop greater self-abilities than non-entrepreneurial individuals and by this, reach greater results, as in the theory of self-efficacy perception (Neck et al., 1999). Another theory of cognitive theory school – risk propensity theory – evaluates entrepreneurial intentions by stating that success in entrepreneurship can be reached by confidence to take risks (Littunen, 2000; Busenitz, 1999; McCarthy, 2000). As well as these cognitive –based theories, in addition to the trait theory, these all fail to assess entrepreneurial qualities by leaving possible other influencing factors outside the scope (Cross & Travaglione, 2003). In addition to these schools, one of the most referred theories is the Big Five personality traits theory. The theory moots five personality

traits, openness to experience, conscientiousness, extraversion, agreeableness and neuroticism (Judge et al., 1999). Even though the model is proved to be generalized across nations, it has been criticized of it being a static sample of the current situation and not representing any school, but rather being a data-driven investigation (Cattell et al., 2002; Boyle et al., 1995). In addition to this, the Big Five theory falls into the same pit as another schools studying personality traits: it only takes five personality traits into account, leaving approximately half of the normal personality traits studied unexplored (Boyle et al., 1995). The problem with different schools of studying reasons for entrepreneurship seems to be that the researches done concentrate only on narrow areas of all the factors that might have effect on entrepreneurial intentions. In this sense, more cross-research ought to be done in order to really find out the causalities between EI factors, that are not only found from personality attributes, but as well from individual's social networks, surrounding culture, education, life situation and political environment.

The main focus in finding out motives and barriers for entrepreneurship has been in personality attributes, but much attention has been paid on the effect of social networks – especially on social exposure and authoritative parenting. Feldman et al. (1991) noted in their research that often entrepreneurs come from families in which either another or both parents own a business. The effect of social exposure has been also linked to recent examinations of entrepreneurial self-efficacy (ESE), as in where the exposure would have a positive impact on individual's perceptions of himself. Therefore, ESE could be strengthened through social exposure. (Chen et al., 1998; Zhao et al., 2005; Bandura, 1982) Authoritative parenting – a certain type of parenting that simultaneously provides support and rules in addition to granting autonomy – has been researched for not to be a factor for entrepreneurial intentions itself, but instead having a positive impact on personality traits, such as achievement orientation, self-efficacy and internal locus of control (Baumrind, 1991; Kracke, 1997; Schmitt-Rodermund & Vondracek, 1999; Schneewind, 1995; Juang & Silbereisen, 1999).

The set of values that entrepreneurs withhold, are believed to form as a result of their culture and surrounding world. In studies researching set of values it has been noticed that the values held by entrepreneurs and their explanations to their own entrepreneurship are very similar to each other. Entrepreneurs seem to value independence, autonomy and success, but are not that motivated by social support

given by their close acquaintances or resulting financial income. (Huuskonen, 1992) A research that examined three aspects that are related to entrepreneurial intentions pointed out that attributing control and professional values were two of statistically significant factors that distinguished entrepreneurs the most from the rest of the population (Pitkänen & Vesala, 1988). Self-reliant and more emotionally stable entrepreneurs are more satisfied to their role as entrepreneurs and also more willing to expand the business than other type of entrepreneurs. These kind of entrepreneurs are typically the ones that started their own companies instead of those inheriting or acquiring a company through marriage. (Brandstätter, 1997)

The set of values are also dependent on the country and culture and for example in the United States, entrepreneurs tend to score high in theoretical and esthetical values, but low in religion-related values (Brockhaus, 1982, 49-50; Brinkman & Rimler, 1988, 59). The external factors do not directly determine behavior, but rather indirectly via changed vision of the world. The focus in researches studying cultural values has been in the general attitude of accepting entrepreneurship as a career option and in attitudes towards the acceptance of failure. As Hofstede states that culture is a set of shared values and beliefs that are determining socially accepted behaviors, Hayton et al. (2002) crystallize the statement clearly by saying that cultural values are determining the degree to which the surrounding society is willing to see entrepreneurial attributes, such as risk taking and independence as desirable. A negative relationship between the perceived feasibility of entrepreneurship and the fear of failure has been found (Tan, 2001). The significance of this demotivating factor is due to existing social norms in cultures, that have a wide variation depending on the country and its culture (Pruett et al., 2009).

Life situation has also its effect on entrepreneurial intentions. Entrepreneurship can be evaluated only as a combination of life situation, experiences and social context (Chell, 1985; Gasse, 1982, 58). Becoming an entrepreneur is not either a static phenomenon. The effect of different affecting factors vary, depending on the moment they are being inspected, and it can be thought that these “curves” that are pointing out the favorability of each factor affecting entrepreneurial intentions are constantly moving, depending on the life situation. (Huuskonen, 1992) The appropriate moment for becoming an entrepreneur is not only dependent on age or family situation. Also dissatisfaction towards current job or a favorable opportunity can have their effect on the final

decision. Therefore Dubini (1987) entrepreneurs into three different classes: entrepreneurs that are continuing family-owned companies, the ones that were motivated by pulling forces – in other words saw a feasible market opportunity – and the ones that were motivated by pushing forces – that were not satisfied with their current occupation or available career opportunities in the company they were working at.

In addition to this, there has been relatively much researches about the effect of politics, taxation and entrepreneurial education to entrepreneurial intentions. Yet, these are such country- and culture-dependent factors, that they should be evaluated in Finnish context instead of trying to generalize a working model of the existing theory.

2.1. Factors that are affecting Finnish academic entrepreneurial activity

Regarding to theory, on international level there are several areas that are either blocking or promoting entrepreneurial intentions. Division to motivations and barriers is practically impossible, because the factors tend to be contrasts to each other: in a positive sense, they act as motivators for entrepreneurial activity, whereas in negative sense they prevent it. It is also clear that these motives and barriers appear in different phases of decision-making process of becoming an entrepreneur. According to Olson (1986), the decision-making process can be roughly divided into four different phases. The first phase, identification, appears when the person becomes aware of the gap between his current situation and the possible, more desirable situation in his life that could be achieved. This first phase is followed by design –phase that includes dismantling the current situation into smaller components in order to evaluate them separately and finding out the factors that are causing the gap between these two situations and ways how to fulfill the gap in order to reach the desired outcome. The second last phase, selection, is the moment when the person is willing to dedicate himself to a certain choice or direction that aims to close the gap. Finally in the implementation –phase the desired actions are being implemented and the process started. Yet, this phase may iterate multiple times when the starting entrepreneur recognizes new existing gaps that had not been spotted in the previous phases. This might lead the person even return to previous phases or in worst case scenario, stop

the whole progress. In the four-stage progress, there are multiple possibilities in where the motives and barriers can appear. Depending on their nature, they appear more likely in different phases, but it is also possible that such reasons as the risk of hiring employees can appear as a barrier already in the beginning of the progress, even though many of us would consider this in latter phase of the decision-making progress.

2.2. Personality traits

The attributes of an entrepreneur have been studied noticeably widely. Noticeable is that most of the studies concentrate on examining these qualities from those, who are already entrepreneurs. Researchers have been in conflict on whether entrepreneurs could be spotted beforehand regarding to their qualities or not. So far, no clear model has been created that could help spotting potential entrepreneurs before they start their businesses, so that their education could be tailored to support their entrepreneurial skills. Roughly the descriptions of entrepreneurial attributes can be divided into two categories; in the first category an entrepreneur is seen as heroic person, who withholds almost all the good qualities that are appreciated by western society. In the second category it is possible to find those researches that see an entrepreneur as a stand-alone person, who has problems in integrating to social norms found in typical organizations and therefore is willing to seek for situations, in where self-control is possible. (Huuskonen, 1992) According to Littunen (2000), the business activity of newly established companies often springs from the personal strategy and experience of its founder and is strongly characterized by the entrepreneur's personality traits. Due to carrying the risk and personal income being dependent on how the business is being run, the characteristics of an achiever are highly demanded from that person. The author adds that entrepreneurial attributes can even change during the time when the company is being already started.

Earlier researches have considered both, entrepreneurial qualities and how they should be studied. Vesa Puhakka (2002) discusses the ways of approaching entrepreneurial attributes in his research paper. He mentions that entrepreneurship has been mostly studied from a point of view of trait theory. This approach has not been able to distinguish those special attributes an entrepreneur has from those that many of us have. The research has remained stagnant and many researchers have

moved into examining company behavior. Now theory of individual behavior has taken over as a way of studying entrepreneurial attributes. As a base for this approach is the belief that an entrepreneur is a personality, that stands out from other personalities in a way that he behaves. In this sense, an entrepreneur would be a personality that can create and manage new types of business activities instead of being a person with certain personality traits. Ahmetoglu et al. (2011) add, that amongst essential qualities an entrepreneur should possess, are opportunity recognition and exploitation, innovation and ability to create value.

2.2.1. Locus of control

Even though there is no clear consensus which qualities a person should have to become an entrepreneur, one internationally accepted characteristic for entrepreneurs has been the need to control of own life. This means that the people who end up as entrepreneurs, believe strongly that they can affect to their own success and that the success does not come from external factors. Rotter's (1966) locus of control is one of the most applied theories in entrepreneurial attributes' research field. Rotter divides the locus of control into two parts; external and internal and the latterly mentioned refers to individual's belief of having full control of his life. The internal control is often strongly associated to be a strong indicator of entrepreneurial intentions (Littunen, 2000; Virtanen & Keskinen, 2000). According to Oosterbeek et al. (2010), entrepreneurs tend often believe in their own skills to the extent that they are able to execute every activity successfully until the end. They also tend to believe that they have full control of their life and their success or career choices are not determined by other people. The authors continue stating that this quality includes high endurance, despite of experienced setbacks. Yet, owning this quality does not automatically mean that the person becomes an entrepreneur, but is a significant factor which has an effect on becoming an entrepreneur, in addition to life experience and other factors that affect one's willingness to become an entrepreneur. (Huuskonen, 1992) Often this belief of total self-control of own life is relatively significant reason for choosing entrepreneurship as a career option. Therefore successful entrepreneurs tend to score high in their ability to make independent decisions and as well accomplishing activities successfully until the end on their own. They also tend to have strong skills to influence people around them in order to reach their aims. (Oosterbeek et al., 2010) Yet, many

researchers claim that studying locus of control fails to distinguish entrepreneurs from individuals that are potential managers (Chen et al., 1998).

Therefore, it is assumed that: H_1 = Internal locus of control predicts strong entrepreneurial intentions (Littunen, 2000; Virtanen & Keskinen, 2000).

2.2.2. Risk propensity

Risk aversion can be seen as part of Hofstede's uncertainty avoidance on a national level. Individuals differ in willingness to take a risk, but on general level risk propensity can be seen as national characteristic.

Currently there are no clear consensus of entrepreneurial minded individuals taking higher risks than usual. Instead, entrepreneurs are seen willing to accept higher risks associated with entrepreneurship, but this sentiment might be caused by the fact that researchers have mixed up the ability to take risks and the natural consequence of carrying a risk as an entrepreneur. In other words, entrepreneurs are believed to seek higher risks because they have to carry the risks that come along with entrepreneurship. This point of view has not been supported scientifically, but instead entrepreneurs are seen to prefer mediocre level risks and also be able to accept occurring risks, which is seen as a condition for entrepreneurship. (Huuskonen, 1992; Brockhaus, 1982) Moreover, Sagie and Elizur (1999) noted in their quantitative research that entrepreneurial individuals score higher in ability to tolerate uncertainty, in willingness to take personal responsibilities and calculating risks. Also a slight difference was found between non-entrepreneurial individuals and entrepreneurial individuals, but the difference was not statistically significant. In entrepreneurship the risk does not only concern financial aspect, but altogether five aspects: financial risk, risks associated with social relations and career development, psychological and health risks (Bird, cited in Littunen, 2000).

2.2.3. Entrepreneurial self-efficacy

Entrepreneurial self-efficacy is believed to be a strong indicator of entrepreneurial interests (Schmitt-Rodermund, 2004). The existing literature emphasizes widely self-efficacy-based explanation for entrepreneurial intentions (Chen et al., 1998; Krueger

et al., 2000b), whereas many researchers believe that locus of control could not distinguish managers and entrepreneurs from each other. Those that have studied entrepreneurial self-efficacy, have in fact found it to be the strongest predictor of entrepreneurial intentions (Pruett et al., 2009).

Entrepreneurial self-efficacy construct (ESE) refers to the strength of a person's own belief to be capable of successfully performing entrepreneurial tasks and succeeding in various roles of a newly started business. ESE consists of five factors: risk-taking, innovation, marketing, management and financial control. (Chen et al., 1998) The level of entrepreneurial self-efficacy does not remain constant level since the birth: it can be rooted and strengthened by four principal ways. The first and the most effective way to do this is through successfully mastering experiences. This improves one's confidence to success also in the future, whereas negative experiences decrease this confidence. Yet, in order this principle to work, the succeeded tasks ought to have significant obstacles to overcome in order to develop entrepreneurial self-efficacy. The second mean for strengthening this quality is through modeling challenging situations. When done collectively, the modeling allows the participant to be encouraged by successful results done by the others. Modeling can also happen through using entrepreneurs as encouraging examples. Also, these entrepreneurs do not necessarily have to be from the person's close acquaintances. Thirdly, social persuasion is used to strengthen self-efficacy. By receiving realistic encouragements, people tend to exert greater effort and therefore perform more successful. Lastly, self-efficacy can be encouraged by enhancing their physical status and reduce their stress levels. This happens due to the fact that people tend to take their physical defects as signs of weakness. These types of exposures to have a positive influence on entrepreneurial intentions and might help to overcome typical start-up fears, such as lack of experience and other types of hurdle associated with entrepreneurship. (Wood & Bandura, 1989; Pruett et al., 2009) Noticeable in strengthening entrepreneurial self-efficacy is, that the effect of entrepreneurial education strengthens this feature more with women than with men (Wilson et al., 2007).

Therefore it can be assumed that: H_2 = Social exposure has a positive impact on entrepreneurial self-efficacy (Chen et al., 1998).

2.2.4. Achievement motive

It is believed that high achievement motive is a requirement for becoming an entrepreneur. Researches have proven that entrepreneurs are more achievement motivated than the other population. (McClelland, cited in Huuskonen, 1992) This personality trait has been studied a lot and in their research, Cassidy and Lynn (1989) define that high achievement motive has to be defined by five different factors; dominance, work ethics, competitiveness, need for status and acquisitiveness for wealth. Scoring high only on one of these factors does not make a person to score high in achievement motive. Successful entrepreneurs score high in achievement motive due to their need for high performance and competitiveness and also because they tend to set their individual targets very high (Oosterbeek et al., 2010). It has been noticed that even though no clear link has been found with entrepreneurial orientation and achievement motive, in a research that was comparing this quality, small business students scored higher in most of the achievement motive items than the two other comparison groups, business and economics students did (Frese, 1995). Thus, the same applies to many other professional categories that are not entrepreneurs, such as athletes. As a conclusion, it can be seen that high achievement motive is the energy that can be channeled to various activities, according to the person's values and interests. (Huuskonen, 1992) A person withholding high achievement motivation does not reach for good results in his performance due to financial incentives, but for himself. Almost every person has high achievement motivation on some area of life, but entrepreneurs' high achievement motivation appears in their professional life and tends to be long-term. (Sutinen, cited in Virtanen & Keskinen, 2000)

According to McClelland's theory, self-actualization and high achievement motive are the most explanatory factors for entrepreneurial intentions and success in entrepreneurship (Brockhaus & Horwitz, 1986). Yet, there is no clear single-mindedness of which personality attributes result in entrepreneurship. Also in Finnish context, the most relevant reasons of becoming an entrepreneur relate to need of self-actualization (Mäkinen, 1977; Kankaanpää & Leimu, cited in Huuskonen, 1992). As personality traits, achievement motive and self-actualization are so close to each other, that they can be categorized under the same topic in this study.

Therefore it can be assumed that: H_3 = High achievement motive predicts strong entrepreneurial intentions (Oosterbeek et al., 2010).

2.2.5. Uncertainty avoidance

Uncertainty avoidance appears often as a national characteristic and is part of Hofstede's cultural dimensions theory. Uncertainty avoidance and risk-aversion can be seen to go in hand to hand, even though there are differences between individuals. When comparing the United States and Finland in Hofstede's uncertainty avoidance, the US ranks slightly under the average, whereas Finland slightly above (Geert Hofstede, 2016a). This should indicate that the level of entrepreneurial activities are on relatively same level in both countries. Yet, the US has much higher level of entrepreneurial activities, which points out that uncertainty avoidance is not the only factor explaining entrepreneurial activity, but one factor that at its best can lower the barrier for starting a company.

Even if low uncertainty associates with willingness to take risk, the reasons causing uncertainty should be distinguished. Political and economic situation of a country might act as a good explanatory factor for causing uncertainty. When assessing more countries from Europe, that are currently facing instability in their politics and experiencing economic regression, it is possible to spot out that Greece, Spain and Italy score extremely high in uncertainty avoidance, with scores 100, 86 and 75 respectively (Geert Hofstede, 2016b). This would indicate that political and economic instability increases the uncertainty and therefore decreases entrepreneurial activities. Cultures with high uncertainty avoidance also tend to prefer structure and predictability, whereas the ones scoring low favor unstructured situations and ambiguity that are favoring risk-taking, for example in starting a new business (Ghemawat & Reiche, 2011). In their research, Hayton et al. (2002) state that researchers generally hypothesize that cultures with low uncertainty avoidance and power-distance, high in individualism and masculinity, are associated with high entrepreneurial activities. Yet, in the research done for this thesis, low uncertainty avoidance and high individualism seem to have the highest support to these activities. In fact, researches point out that individualism and uncertainty avoidance are associated with personality traits, such as risk propensity, innovativeness and internal locus of control (Mitchell et al., 2000; Mueller & Thomas, 2001).

Oosterbeek, Van Praag and Ijsselstein (2010) were measuring risk taking propensity in their research. This factor consisted both, the ability to deal with uncertainty and the willingness of taking a risk for possible losses. These qualities were seen as important

competencies for success in entrepreneurship. The importance of uncertainty avoidance was also seen in a research that compared small business students to business and economics students. More entrepreneurial –oriented small business students scored considerably higher in their readiness to face uncertainty, as well as in their abilities to calculate risks, taking personal responsibilities and problem solving skills (Sagie & Elizur, 1999). One point of view of the study's research could be interpreted in a way that entrepreneurial -oriented individuals are not only more capable of facing uncertainty, but also by estimating risk levels they also make uncertainty more bearable for themselves. Unlike many other entrepreneurial attributes, ability to face uncertainty along with ability to take personal responsibilities as needed qualities for an entrepreneur have resulted in supportive results in researches, indicating their importance as almost obligatory qualities of an entrepreneur (Sexton & Bowman, 1986; Lengnick-Hall, 1992).

2.2.6. Agreeableness

Agreeableness is one part of the Big Five personality traits model. Low agreeableness is seen as an indicator for entrepreneurial personality and those, that are scoring low on agreeableness, are often seen as highly competitive, sometimes even as untrustworthy. This characteristic distinguish managers and entrepreneurs significantly, as entrepreneurs tend to score much lower in neuroticism and agreeableness. (Zhao & Seibert, 2006) From the Big Five personality traits, conscientiousness and emotional stability have been linked to higher job performance, whereas agreeableness, openness and extraversion are more dependent on the context (Barrick et al., 2001). In a research conducted by Schmitt-Rodermund (2004), 320 students and 139 small business founders were studied in order to identify qualities that would predict entrepreneurial intentions. The research pointed out that low agreeableness, as well as neuroticism, extraversion, openness and conscientiousness, combined with authoritative parenting, were indicating entrepreneurial competence (EC) that is a strong indicator of entrepreneurial intentions in the future. Yet, Zhao et al. (2010) are claiming that agreeableness would not be in fact associated with intentions of starting a new venture, but a quality of an entrepreneur. This claim shows the importance of need to distinguish entrepreneurial

competences from entrepreneurial intentions. Still, drawing the line between these two is dependent on the results of different studies and distinction cannot be clearly made.

2.2.7. Innovativeness

Innovativeness is not only necessary for the person who comes up with the business idea that is unique to existing offering, but also needed for spotting changes in the business environment and ability to take the advantage out of these changes. Creativity is also needed in order to find out solutions for occurring problems in entrepreneurship and turn them into advantages. (Oosterbeek et al., 2010) Tibbits (1979) adds, that especially during the start-up phase of a company, innovativeness, as well as the ability to perform rapid actions are highly important characteristics. Most likely innovativeness is partly attained through experience and training (Littunen, 2000). This quality is needed on many various aspects of starting a business, such as in marketing, management and manufacturing (Casson, cited In Littunen, 2000). Due to innovativeness' importance in existing businesses, it is often taken as a factor in studies charting entrepreneurial qualities. Leutner et al. (2014) pointed out that innovativeness is a highly important factor amongst skills and abilities along with achievement motive, self-efficacy, need for autonomy, stress tolerance and proactive personality. Even though innovativeness by itself does not lead to entrepreneurship, it is an important part of the palette of qualities that entrepreneurial intentions requires. Many studies are pointing out the importance of innovativeness and creativity as predictors of entrepreneurship (Engle et al., 1997; Mueller & Thomas, 2001; Mitchell et al., 2000). Innovativeness still does not guarantee entrepreneurship alone, but is also useful for employees to increase their knowledge about their work (Opetusministeriö, 2009).

2.2.8. Social competence

Even though social skills as requirement for entrepreneurship is not always a necessity, especially what it comes to solo entrepreneurship, it is still considered as great quality for success. An entrepreneur does not necessarily have to be fully balanced and extrovert decision-maker, but he has to be able to create confidence in his own team and with his customers (Nurmi, 1999). Successful entrepreneurs realize

that social connections are a necessity in order to make their ideas come true (Oosterbeek et al., 2010). Therefore, an opportunistic entrepreneur has to be able to pay attention his social surroundings and be confident with his abilities to interact with it (Smith, 1967).

In a study conducted by Kauranen (1993), his aim was to spot entrepreneurial attributes with two qualities: the attributes that could be linked straight to success of a company and the attributes that are ought to be spotted from the entrepreneur's everyday behavior. He chose five items for his research, of which two impinged on social skills; extraversion vs. introversion and isolation vs. socialness. Both of these factors with their counterparts proved to be statistically significant. Sociability had a positive effect on the success of a company, whereas isolation correlated negatively. Yet, the need for good social skills might not be such a big predictor for entrepreneurial intentions, but appear necessary when running a business. Virtanen and Keskinen (2000) noted that the companies which were run by social founders, were almost twice as successful compared to the whole set of companies researched. Often the right set of personality traits are seen essential for entrepreneurship. Very often social factors are highlighted in these researches and they tend to emerge as strong factors for entrepreneurship. (Laukkanen, 2003)

Yet, there has been critics towards the lack of studying social skills in entrepreneurial research field (Vesala, cited in Virtanen & Keskinen, 2000). Even though extraversion and social skills have been proven to be success predictors in entrepreneurship, the need for social skills is dependent on the context. In a sole proprietorship social skills do not necessarily play such a big role and don't act as a barrier for entrepreneurship. Miner (1998) claims that there is not only one type of personality that could succeed in entrepreneurship. According to him, successful entrepreneurs are either classified as "the personal achiever", "the empathic supersalesperson", "the real manager" or "the expert idea generator", depending on their personality attributes and skills. Out of these types of entrepreneurs, social skills are highly respected and needed - excluding innovators that can succeed with their strengths on different areas. Yet, social skills are essential especially when creating professional social networks and in a larger scale business, social skills are a requirement (Brandstätter, 1997).

Within social skills, extraversion comes up often in entrepreneurship research. This element of Big Five traits theory is a significant sign of entrepreneurial intentions almost

in every research it has been examined at. Zhao et al. (2010) recognize this personality trait as a part of personality profile that predicts intentions to start a business. Also Schmitt-Rodermund (2004) ends up in similar results in her research. In addition to extraversion, she sees the perfect set for entrepreneurial success to consisting of openness for experience, conscientiousness with low agreeableness and neuroticism combined with relatively young age.

A term that has reached popularity during these days – emotional intelligence – has been seen as an important quality to possess for an entrepreneur. Emotional intelligence is seen as highly important competency for effective leadership and performing in a team in today's world – the same qualities needed to run a successful business (Prati et al., 2003). A study conducted by Cross and Travaglione (2003), studying Australian entrepreneurs with their relation to emotional intelligence by using qualitative methods, pointed out that entrepreneurs ranked extraordinary high in emotional intelligence abilities, even on the sub-scales of the study. It is said that emotionally intelligent people are more self-aware of themselves and they understand the rules associated with different social situations and therefore are able to adapt their behavior to match these expectations. People with high emotional intelligence are able to develop their behavior according to the feedback they get and by observing and understanding other people's feelings, are able to take the advantage of recognizing these behaviors and predicted reactions and use sophisticated means of persuading other people. (Prati et al., 2003)

2.2.9. Individualism

Culture consists of set of shared values and beliefs and therefore individualism vs. collectivism is one of Hofstede's cultural dimensions. The aspect refers to the degree that the members of a society are focusing on satisfying their personal interests and needs, versus them taking into account the interests and needs of the surrounding society. Individualistic societies are valuating personal freedom as a way to reach quality in personal life, they tend to be more achievement-oriented and competitive. (Pruett et al., 2009)

High individualism has been linked to entrepreneurial activities, which would suggest that the Americans would naturally have high interests towards entrepreneurship

(Hayton et al., 2002). Yet, there are exceptions to the supporting effect of high individualism, like Israel, that ranks in the middle of not being either highly individualistic or collectivistic country, but yet has a high level of entrepreneurial activity (GEM Global Entrepreneurship Monitor, 2016; Geert Hofstede, 2016c). Moreover, research evidence claims that individualism with low uncertainty avoidance can be linked to personality traits that are associated with entrepreneurship (Mitchell et al., 2000; Mueller & Thomas, 2001).

2.2.10. Neuroticism

Neuroticism, one of the factors in The Big Five –theory, seems to have an effect on entrepreneurial intentions, when scoring low with this factor (Zhao et al., 2010; Schmitt-Rodermund, 2004). Neuroticism, also sometimes referred as emotional stability, means the likeliness of exhibiting poor emotional adjustment and the occurrence of such characteristics as anxiety, fear and rashness (Brice, 2004). High neuroticism is associated with mood swings, emotional instability and being prone to anxiousness and depression (Llewellyn & Wilson, 2003), whereas low neuroticism is associated with good self-confidence, calmness and ability to be relaxed (Zhao & Seibert, 2006). Yet, low neuroticism might not be an indicator of entrepreneurial intentions on itself, but rather indicate this when combined with other Big Five traits, such as high extraversion, conscientiousness or low agreeableness (Grant & Langan-Fox, 2006). A study conducted by Klein et al. (2004) proposes that the negative correlation of high neuroticism with entrepreneurial intentions might be due to different positioning of the ones scoring high with this quality in social networks compared to the ones that score low with this personality trait. Whereas the ones with low neuroticism tend to position in central positions in terms of advice and friendship networks, highly neurotic tend to position in central positions in terms of adversarial networks. In this sense, as entrepreneurship is also very much about building social networks, high neuroticism can be a preventive factor for building up these relationships efficiently.

Therefore the assumption is that: H₄ = Low neuroticism occurs when personality traits extraversion and conscientiousness are high and agreeableness low (Grant & Langan-Fox, 2006).

2.2.11. Openness to experience

Individuals that are scoring high in this personality trait, are usually described as not being afraid of accepting new challenges in their lives, being versatile, imaginative and also tend to be more creative than people on average (Llewellyn & Wilson, 2003). Combined with other entrepreneurial attributes, openness to experience has been seen as a strong predictor for entrepreneurial intentions. Openness to experience is found to be a part of entrepreneurial personality with other qualities, such as high extraversion and conscientiousness, low agreeableness and neuroticism – especially when these qualities appear in individuals that have been raised by using authoritative parenting. Especially this quality has been seen as significant amongst entrepreneurs, even though openness to experience can be found from managers and other types of potential entrepreneurs as well. (Zhao & Seibert, 2006; Schmitt-Rodermund, 2004) Some studies are linking openness to experience strongly with innovativeness (Zhang & Huang, 2001). This might happen due to the tendency of individuals scoring high in terms of openness to experience to have more possibilities in spotting feasible possibilities for business or then possibly the openness helps to innovate in areas that many people would not consider suitable for. Even though openness to experience is seen as a personality trait that is supporting entrepreneurial intentions, a study conducted by Ciavarella et al. (2004) claims that in long-term, this personality trait has a negative effect on long-term sustainability of a business venture.

Therefore the assumption is that: H₅ = Respondents that are open to experiences are more innovative (Zhang & Huang, 2001).

2.2.12. Need for autonomy

This subconscious personality trait has been seen as a reason for choosing entrepreneurship as a career option. This probably happens due to the fact that other employment options hardly have an opportunity for such large scale autonomous behavior, excluding some separate tasks given. Therefore it is seen that other personality traits, especially the need for achievement, would be the personality traits behind entrepreneurial intentions and the need for autonomy, which is spotted as entrepreneurial trait in many studies, would be more indicating the lack of choices in career options that would allow autonomous working. (Oosterbeek et al., 2010) Also Rauch and Frese's (2007) meta-analysis pointed out this trait to correlate positively

with those individuals, that possessed skills and abilities needed in entrepreneurship. Also independence and decision-making autonomy were seen as the most important factors within all three nationalities in a study, when the respondents were asked their most important motives of becoming entrepreneurs (Pruett et al., 2009). This goes in line with a study conducted by Alstete (2002), who examined students that were taking entrepreneurship courses and were already considered to have entrepreneurial intentions. In the study independence and the need for autonomy, which is directly linked to independence, were seen as the biggest factors for motivation with personal development, approval of surrounding society and due to following of an existing role model – who is in this context most likely the respondent's close acquaintance - such as the person's parents. The need for autonomy as a factor to support entrepreneurial intentions can be also found as a part in authoritative parenting, in where such type of parenting supports this quality amongst self-confidence and leadership skills (Schmitt-Rodermund, 2004).

Therefore it can be assumed that: $H_6 =$ Authoritative parenting predicts high need for autonomy (Schmitt-Rodermund, 2004).

2.2.13. Conscientiousness

This personality trait has been linked to higher job performance in various types of job positions (Barrick et al., 2001). In addition, the results from previous researches point out that entrepreneurs tend to score higher on conscientiousness and openness to experience than those who are in managerial positions. Another study claims that there would be a certain type of personality profile that would be prone to intentions or willingness of starting a new business. According to the research, this type of personality profile would consist of high conscientiousness, openness to experience and extraversion and low in neuroticism. (Zhao et al., 2006; 2010) Other studies are also pointing out that this personality trait would indicate entrepreneurial intentions, as in the study by Schmitt-Rodermund (2004), which examined a large sample of 10th graders and small business founders. Yet, most of the studies do not claim that there would be only one type of entrepreneurial personality. Also, conscientiousness as a predictor for entrepreneurial intentions has not been universally accepted; Rauch and Frese (2007) studied narrow traits and their effect on entrepreneurial behavior by matching them to skills and qualities that are relevant to entrepreneurship. When the

results were examined in bigger entities, they found out that the unmatched broad traits to these skills included conscientiousness, extraversion, optimism, rigidity and conformity, whereas for example high achievement motive, low neuroticism and innovativeness were matched to entrepreneurial intentions.

Therefore it can be assumed that: $H_7 =$ Conscientiousness predicts strong entrepreneurial intentions (Schmitt-Rodermund, 2004).

2.3. The effect of social networks

As people and their ways of behaving is also affected by the social networks they withhold, the effect of their social networks cannot be excluded. Gibb and Ritchie (1982) mention in their research that entrepreneurship can be only inspected in a way, where their encountered life situations and related social groups are taken into consideration as well. Ultimately their model assumes that individuals are changing throughout their lives and it is the individual's transactions in their social contexts that are shaping the one's personality throughout their lives. Networks also help to lower the barrier for becoming an entrepreneur, as well as developing the business and raising the probability for success. Johannisson and Spilling (1986) say in their research paper that starting entrepreneur's personal interest networks increase their resources of entrepreneurship, as the skills that can be found from the network can fill those possible gaps the entrepreneur is missing in his experience and training and in this sense increase achievement motivation. Networks play important role especially in case of technological venturing, as Sweeney states in his book (Sweeney, cited in Littunen, 2000). Entrepreneurial networks consist of informal and formal ones, in where the firstly mentioned refers to personal networks, family members, and business contacts. Formal networks again consists of entrepreneur's stakeholders, such as banks, venture capitalists or accountants. (Das & Teng, 1997)

Especially the example of having entrepreneurs in amongst family, relatives or the closest ones has been correlating strongly with entrepreneurial intentions (Scherer et al., 1989). Often in literature it is concluded that becoming an entrepreneur is a result of enculturation. In this relation parents are important actors by offering a natural role model and acting as a target in where to identify. Therefore, a large portion of entrepreneurs come from entrepreneurial families. These type of families are expected

to offer such a surrounding in where entrepreneurial activities are being encouraged and success is highly valued. By the influence of such positive surroundings affects to the core value of feeling independent permanently, which then later on affects to the person's career preferences. (Bowen & Hisrich, 1986; Gilad & Levine, 1986; Knight, 1987; Ronstadt, 1983; Hills & Welsch, 1986, 185) This point of view is also supported in Finnish context, whereas Virtanen & Keskinen (2000) noted that the individuals that are becoming entrepreneurs have very often prior experience of entrepreneurship, which is usually acquired through their entrepreneur parents or previous work experience. The authors continue stating that many researches that they have gone through, have shown that growing up in entrepreneurial family or community has positive influence on how the person's values, attitudes and beliefs can form more entrepreneurial. Despite the strong influence of social networks to entrepreneurial activities, it is harder to find entrepreneurial role models in countries with low entrepreneurial activities, such as Finland or Japan (Arenius & Autio, 1999).

Also the attitude of relatives and close acquaintances towards entrepreneurship has an effect on entrepreneurial intentions. Social network affects to those role configurations, according to which the entrepreneur acts. By adopting a certain position, the person accepts the expected role models integrated to that position. Those role models are in turn reflections of other people's expectations (Huuskonen, 1992). Depending on the context, these expectations can vary between positive and negative or even in between, being neutral. The expectations of the members within one's social network are also affecting to the self-image and to feeling of control of that person; potential entrepreneur reflects his possibilities in advance to succeed by evaluating how the key persons in his life, like family or financiers are reacting to his plans to start a business. The evaluation is mostly based on previous feedback gotten in similar type of situations. Therefore social psychologists often see that behavior happens mostly according to the reactions expected as the result of taking an action. (Carsrud & Johnson, 1989) The effect to entrepreneurial intentions caused by the attitudes of one's family and close acquaintances is dependent on the surrounding culture as well. Tan (2001) noticed in his research that was comparing Chinese managers and entrepreneurs that the shame of failure associated in Chinese culture made feasible business opportunities to look less attractive for their founders than they would have appeared in other cultures. The failure does not only concern the

entrepreneur, but is seen as casting shame on the whole family of the person. This is, according to the author, caused by social norms that are prevalent in that specific culture and therefore varies a lot depending on the country. The same effect of social norms in Chinese culture was noticed in another study, in where the Chinese respondents believed in priori that their relatives would not be strongly supportive if they had entrepreneurial intentions, as failure would not only concern them, but their whole family. This is most likely caused by the collectivist orientation in Chinese culture and therefore assumable have significantly less effect in highly individualistic countries, such as the United States. (Pruett et al., 2009)

Yet, cultural values that are being associated within the country and the mindset of a family have only moderate influence on intentions of becoming an entrepreneur. This fact refers that personality characteristics are playing more important role in career decisions than these two factors. (Krueger et al., 2000b)

Not only has the positive role model given by entrepreneur parents supported entrepreneurial activities of their offspring. Schmitt-Rodermund (2004) is discussing about the positive effect of authoritative parenting to the formation of entrepreneurial qualities in her research. Schmitt-Rodermund (2004) also mentions that as the type of parenting is granting autonomy, it provides diligence and feeling of being autonomous for children; both recognized as strong factors of early entrepreneurial qualities. This type of parenting has also been associated to achievement motivation, good self-confidence, self-efficacy, locus of control and lastly to exploratory activities (Kracke, 1997; Aunola et al., 2000; Schneewind, 1995, 125; Juang & Silbereisen, 1999). The researched students who were raised by using authoritative parenting and had entrepreneurial personality profile, showed increasing levels of curiosity, leadership and skills needed for entrepreneurship (Schmitt-Rodermund, 2004).

Mosey and Wright (2007) also underline the positive influence of entrepreneurs within social networks. They have noticed that peer academics that already have prior experience of entrepreneurial processes, are valuable role models for their colleagues and also act as a relevant source of information to those, who are considering entrepreneurial career. The existence of these kind of social networks within academic circles are crucially needed, as university spin-offs need relatively stronger support mechanisms than non-academic start-ups tend to need (Fini et al., 2009; Wennberg et al., 2011).

Not only the social networks from family or work support entrepreneurial mindset; various researches have shown that prior industrial experience can support entrepreneurial activities (Birley & Norburn, 1987). Previous experience of starting a small business has been shown to be a success factor in small companies (Willard et al., 1992) and therefore gained experience is assumed to act as similar success factor for promoting entrepreneurial activities (Klofsten & Jones-Evans, 2000). The same observations have been made in Finnish context: Hauta-Aho's (1990) research points out the high importance of prior work experience for becoming an entrepreneur. Yet, the views on the importance of work experience have been controversial: in the research done by Koskinen (1989), the interviewed entrepreneurs see that their previously gained experience of work life only contributes a little bit of help in running their own business. Therefore it is assumable that prior work experience may not completely bring the needed skills for running a business, but instead provide self-confidence for individuals that encourages them to start their own businesses.

The assumptions regarding to theory are:

H₈ = Social exposure has strong effect on entrepreneurial intentions (Scherer et al., 1989).

H₉ = Family attitude has moderate effect on entrepreneurial intentions in Finnish culture (Tan, 2001).

H₁₀ = Authoritative parenting has effect on entrepreneurial self-efficacy (Kracke, 1997; Aunola et al., 2000; Schneewind, 1995, 125; Juang & Silbereisen, 1999).

2.4. The level of entrepreneurial education in Finland

Policy makers do believe that entrepreneurship activity can be increased through entrepreneurial education. Entrepreneurial studies has been in main scope in European higher education institutions' strategy and curricula since European Commission has been taken it as one of their main agendas on the field of education (European Commission, 2006). The European Economic and Social Committee (Euroopan talous- ja sosiaalikomitea, 2006) states that entrepreneurial education aims to proceed innovation, creativity and self-confidence, which would support the needed qualities for entrepreneurship. The Committee suggests that entrepreneurial education

should be started already during early stages of studies by introducing the principles of entrepreneurship. Acquiring entrepreneurial mindset lasts throughout life, which should be started in early age and be a guideline in studies throughout the whole educational system and the Committee has researched that entrepreneurial programs have a strategic position in encouraging young people to consider entrepreneurship as a viable career option in their lives. Whether these entrepreneurial programs are really useful, is a bit contradictory, as is being discussed later on in this thesis. The committee's statement continues saying that these programs become handful in other terms as well: they teach group dynamics and working within a group, as well as improves problem solving skills and self-confidence. Yet, entrepreneurial education is not fully constructed in Finland. It has been criticized that company functions are divided into too small portions in education and by this, teaching rather supports working for big enterprises than promoting cross-knowledge that is needed in working or running a smaller company. Also, entrepreneurial education is not seen interactive enough and as a result, the education should not be based mostly on theory, but also taken to the level of practice as well. (Virtanen & Keskinen, 2000) Opetusministeriö (2009) suggests that academic entrepreneurship should be supported by strengthening cooperation with science parks, take more advantage of research results with these parks and by giving pedagogical education to teachers in order to develop their skills in entrepreneurial education area.

2.4.1. University links to industries

Universities have been facing a huge structural change from what their original mission used to be, when the university law was changed in 2009. The new law brought universities and companies closer to each other and turned universities into independent actors instead of being governed by public law. That was a turning point when academe started to be seen increasingly as important provider of new technologies and business ventures or even as a locomotive for regional development. These tasks are often referred as universities' third mission. (FINLEX, 1997; 2009; Laukkanen, 2003) From the point of view of competitiveness of Finland, universities getting closer to companies should be a positive exchange, but it also rose fears of too big workload to handle for universities and concerns also rose about its effect to the quality of researches. Yet, tight university-industry collaboration has been seen as

beneficial especially in the United States, in where the Bayh-Dole act has enabled contractual arrangements between faculty researchers, their departments and the university they are working at. The American university system that is highly decentralized, as well as competitive, enables rapid response to the economic needs of the society. (Henrekson & Rosenberg, 2000) This type of rapid reaction to the changing needs of current economy would be highly needed in Finnish concept as well. It would enable universities to produce such information that the industry currently needs according to current market trends. This type of rapid tailoring of education might pose a risk of poorly designed educational programs, but by tightening the university-industry collaboration, these programs could be established quickly and make them to fulfill good standards.

In order to promote tighter collaboration between industries and universities, the Triple Helix concept was created. The model unites the interaction between universities, industries and the government. The purpose is to give universities a more prominent role in innovation creation process with industries and government, to increase the collaboration between these three parties - in where newly formed innovations are a natural result of the cooperation, rather than result of government policies and enable the parties to take "the role of the other". (Stanford University, 2016) In the Triple Helix concept, entrepreneurial universities are taking a proactive stance in order to put knowledge in use and to broaden the input for academic knowledge creation. This causes universities to become the source for regional development, as academic institutions are reshaped for this purpose. The industries instead move closer to academic level and share knowledge increasingly. The government's purpose in the model is to act as a public entrepreneur and venture capitalist in addition to its role of setting up procedures for the collaboration. In addition to this, the cooperation and especially the government is expected to create environment for the collaboration for setting up supporting functions such as science parks and business incubators. (Etzkowitz, 2003)

Not every study made of entrepreneurial education have resulted with good final outcome. Oosterbeek, Praag and Ijsselstein (2010) are discussing in their research about negative outcomes that they had while studying the Junior Achievement Young Enterprise student mini-company program, which is said to be the most dominant entrepreneurship education program within lower education levels in both, Europe and

the United States. Their research pointed out that the effects caused by the program were either insignificant or has even negative effect. No prove was found that the participants' self-assessed entrepreneurial skills would have improved and the overall attitude of becoming an entrepreneur got even worse after the program. The authors speculate these surprising results, which pointed out that both genders experienced lower intentions towards entrepreneurship after they were exposed to the program and whereabouts women entrepreneurial intentions got even more negative. They assumed that especially in case of women, the real experience of running their own business made the female participants to realize how hard it is to combine entrepreneurship with other activities in their lives. In addition, the authors mentioned that the students were able to acquire more realistic experience on themselves and also what it takes to be an entrepreneur. This assumption supports the cogitation in GEM Consortium's report about the reasons behind of why entrepreneurship correlates negatively with the level of education (Arenius & Autio, 1999). The interviews with lecturers and coaches of the program were suggesting more realistic picture of entrepreneurship as the main reason for demotivation. They also considered that the loss of over-optimism on students themselves might be one of the reasons behind demotivation. Naturally, the results are never so unambiguous: negative effects might just be due to dislike towards the programs or unsatisfactory caused by possible free riders. (Oosterbeek et al., 2010)

2.5. The effects of politics and taxation

One of the main reasons that has been suggested to have its effect on low entrepreneurial activity in Finland, could be found from lack of residual incentives. Social support and outsized risk of becoming an entrepreneur, compared to the probability of succeeding and receiving financial returns that correlate with the risk of entrepreneurship, are often not seen as a competitive option compared to staying unemployed or other career options providing ongoing flow of income. In contrast, the countries in where entrepreneurship is seen as a viable, less risky and accepted option for other career options or unemployment, tend to have high activity in new business establishing. (Arenius & Autio, 1999) The same negative effect has been pointed out also in Sweden. In a research comparing academic entrepreneurship between the United States and Sweden, Henrekson & Rosenberg (2000) noted, that Sweden has

multiple factors in its legislation, that appear to be unfavorable for starting a business. The authors mentioned that the “last in – first out” principle in Swedish legislation makes the opportunity cost of becoming self-employed bigger, especially if the employment has lasted long. Also it has an effect on changing employer, if the person has longer career behind him. This same legislation cannot be found in Finnish legislation, but is regulated on many industries in collective bargains of labor unions instead (Niemeläinen, 2011). This most likely also reduces knowledge transfer between different industries or companies (Henrekson & Rosenberg, 2000). Additional barrier for leaving an employee position and becoming an entrepreneur is relatively rigid wages. Rigid wages are creating imbalance in risks between entrepreneurship and employment, as typical employment contract is moving the risk from the employee to the employer (Hyytinen & Rouvinen, 2006).

It is suggested, that too tight bankruptcy act in the beginning of 1990's recession led to many grievances and despite of the changes made in the act, the effects are not visible yet due to possibly slow flow of information. Also other means in making the bankruptcy act more human, should be applied. Those changes should be targeted to the parts in the act that could turn bankruptcy from being a personal damage towards those means in where the individual has more changes to try again with another business idea. One approach suggested could be prohibiting the usage of one's house or voluntarily retirement savings as a guarantee for entrepreneurial loans, just like has been done in the United States. (Arenius & Autio, 1999)

The existence of obstacles caused by regulations and the infrastructure for entrepreneurship have been recognized relatively well. The European Economic and Social Committee (Euroopan talous- ja sosiaalikomitea, 2006) has emphasized the need for centralized service centers for entrepreneurs, as they have noticed that in the process of establishing a company, the barriers in both, pre- and after-phase are more remarkable than have been previously believed.

A research conducted by Henrekson and Rosenberg (2000) studied the differences of academic entrepreneurship in Sweden and in the United States. In their study they noted that the welfare state provisions have a negative effect on willingness to acquire personal savings, if the welfare system is seen as reliable by general public. The authors continue stating that Swedish pay-as-you-go pension system discourages acquiring savings and Feldstein (1996) in his research points out that funded pension

systems work as much better incentive for personal savings. As in Finland the pension system is sort of a hybrid of these two models, it also has a partial effect on willingness for acquiring personal savings. (Tela, 2013) This obviously leads to situation in where there are less entrepreneurial capital in use. In Finland, the percentage of household savings out of total disposable income has been varying between -0,45 to 3,38 during 21st century, whereas in other OECD countries it has been significantly higher, with few exceptions like Greece (OECD, 2016). Lindh and Ohlsson (1998) noticed in their research that significant amount of savings increases the likelihood for starting a business and Henrekson and Rosenberg (2000) noted that high taxation in Sweden occurs a problem, as it makes it very difficult to save sufficient amount of equity for starting a business.

Therefore the assumption is: H_{11} = Lack of residual incentives has strong negative effect on entrepreneurial intentions (Arenius & Autio, 1999).

2.5.1. Equity financing

In addition to previously mentioned pension system, Finland has a gap in terms of prevailing knowledge of the availability of equity-based funding. In 2015, the investments in Finnish startups and growth companies in their early stage was the highest in Europe and over twice the average of Europe, in relation to GDP (FVCA 2015). Moreover, there are relatively satisfying offering of debt based financing available, even though in some cases lack of guarantees can prevent its usage. Despite these facts, experts believe that acquiring equity should not be an insurmountable obstacle for growth, but the problems might be rather to be found from the attitude of Finnish entrepreneurs. The experts have noticed that the entrepreneurs have relatively low willingness to use both, equity-based and debt-based financing. This most likely is caused by unconsciousness of using these types of financings and the experts assumed that Finnish entrepreneurs do not necessarily realize the ratio of added value and its price in equity-based financing. (Arenius & Autio, 1999)

2.5.2. Taxation

Even though Finnish company tax rate is relatively low on overall European level (KPMG, 2016), the taxation system still creates barriers for entrepreneurship. Arenius

and Autio (1999) are discussing about the need for renewing the legislation in a way that options would be treated as capital income instead of earned income. The same issue was noticed in Henrekson and Rosenberg's research (2000) in Sweden. They also pointed out that due to wage income taxation, the social security tax must also be paid when the options are implemented, according to their current valuation, making it impossible to calculate the costs of stock option plan. The current system combines entrepreneurial risks with high taxation rate and therefore does not encourage entrepreneurship. Arenius and Autio (1999), as well as Lindh and Ohlsson (1998) are stating that high entrepreneurial activities are correlating positively with large income gaps. This probably is not a question of status, but more likely the negative effect caused by strict progressive taxation and its effect on entrepreneurial risk ratio that it causes. This assumption is supported by Kihlstrom and Laffont (1979), who claim that greater wealth affects positively with entrepreneurial intentions or the likeliness to expand risky business, due to negative correlation between risk aversion and wealth. Whereas Henrekson and Rosenberg (2000) were discussing about the discouraging effect of Sweden's social security contributions towards entrepreneurship compared to the United States, the same effect can be seen in Finland as well. As well as collective bargains of labor unions and strict employment act laws, also noticeably high salary-related expenses causes entrepreneurship to be riskier in terms of employment and therefore diminishing willingness for expansion. On average, these expenses contribute 20 to 30 percent extra to the gross salary paid to employees, without taking vacation costs into account and therefore combined with employment act law, makes hiring expensive and risky (Verohallinto, 2015). In a nutshell, favorable taxation for individual equity owners, low rate of capital gain tax and predictable taxation for stock options would lessen the risk of entrepreneurship (Henrekson & Rosenberg, 2000).

2.5.3. Entrepreneurial support services

Currently there are numerous of support services available for both, companies that are in starting phase and those that in the growth phase. In GEM consortium's research, the amount of public funds channeled to entrepreneurial support services was the second highest in Finland amongst the compared countries, only after Denmark. Yet, low entrepreneurial activity in Finland refers that entrepreneurial support services might be useless, unless the incentives for entrepreneurship are

supportive enough. (Arenius & Autio, 1999; Opetusministeriö, 2009) One of the noted issues in entrepreneurial support services is their tendency to compete with each other and the premises are based on their own needs, rather than customers'. In addition, often these educational services are being executed as seminar type of events, even though the companies are craving for support services that would spring from their own needs and to be able to help to solve practical problems that are occurring in entrepreneurship. One way to solve this issue and make the support services more efficient would be adopting such services that are based on profit sharing –principle. (Arenius & Autio, 1999) Also Koironen and Peltonen (1995) see a wide offering of support services rather as a problem than an advantage. As the biggest pitfalls they mention the tendency to teach rational ways of problem solving in entrepreneurial educations, rather than giving space for opportunistic thinking. Due to this kind of way of acting, the most neglected areas are creativity-, productization- and commercialization skills. The authors continue noting problems in too standardized entrepreneurial education. This should rather be executed in a way that the programs would be tailored to serve the participants' individual needs and already the fact that the education is often held as seminars, discloses the existing problem.

Therefore it can be assumed that: H_{12} = Entrepreneurial support services have effect on entrepreneurial intentions (Euroopan talous- ja sosiaalikomitea, 2006).

2.6. Cultural attitudes towards entrepreneurship

In general, the attitude towards entrepreneurship is positive in Finland and ranks amongst the top countries in GEM Consortium's report (Arenius & Autio, 1999). Nevertheless, this does not contribute to motivation of becoming an entrepreneur. The report stated that the most positive view of entrepreneurship was found amongst young people. One reason behind this might be the effect of comfort zone, which older people tend to feel much stronger and important in their life. Also regions had significant differences in terms of attitude towards entrepreneurship. The most positive attitudes could be found from western and southern Finland, whereas relatively the most negative expectations towards entrepreneurship were in eastern parts of Finland. There is no clear answer why the attitudes differ in various parts of Finland, but one explanation behind this might be the asymmetries in terms of possibilities for

entrepreneurship in different parts of Finland. (Arenius & Autio, 1999) There are big cities in both, southern and western Finland, which creates more possibilities for bigger variety of entrepreneurship. Access to capital, support services needed for entrepreneurship, organizations that can help in developing business ideas and higher education institutes to cooperate with, have a huge impact on possibilities. Whereas some areas, for example in eastern parts of Finland, might not have direct access to these assets and therefore the fields of entrepreneurship are more limited.

Even though the prevailing assumption amongst Finns seems to be that success and financial returns from it would be more shameful than cherished, GEM Consortium's report states the opposite. Highly positive results were acquired, when the attitudes towards succeeding and failing in entrepreneurship were examined: Finland placed into top of the list with these attitudes amongst the researched countries. This is a clear signal that the reasons for low motivation of entrepreneurship must come from somewhere else than the negative effect from one's own social networks. In respecting self-impose and independence, Finland placed 7th among ten countries in comparison. (Arenius & Autio, 1999) This result seems relatively odd when considering that according to Hofstede's cultural differences, Finland is relatively individualistic country and therefore should promote individual achievements (Geert Hofstede, 2016d). One of the reasons behind public respect towards entrepreneurship possibly comes from hard-working and uncertainty tolerance image of entrepreneurs – qualities that are highly respected in Finland (Pitkänen & Vesala, 1988).

In a research done in Finnish universities, Laukkanen (2003) noticed that in academic world starting own business and failing in it did not create any kind of stigmas that would prevent coming back to academe, either generally or to the same decision making unit. This seems to be a positive sign that the cultural atmosphere in Finland accepts failures in starting a business and it also applies in academic world.

As a suggestion, GEM Consortium (Arenius & Autio, 1999) proposes that raising entrepreneurial activity in Finland requires, that also other age groups than 24 to 44 years old, should become interested in entrepreneurship. This would mean that the cultural and informative education measures that are used to change the attitudes more positive towards entrepreneurship, should be applied on all levels of education and age categories.

An efficient way to promote entrepreneurship activity would be via women's entrepreneurship, which state is currently noticeably weak, when compared to the level of men's entrepreneurship. It has been measured that it is three times more probable for men to become entrepreneurs than women. Only slightly over 30 percent of companies in Finland are owned by women. Most part of these businesses are operating on service industry. This gives signs that promoting women's entrepreneurship might be the solution to increase the overall level of entrepreneurship. The change regarding to this imbalance is already in a good progress: there are already services dedicated only for female entrepreneurs, such as Finnvera's female entrepreneur's loan or *Naisyrittäjien edistämiskeskus*, a center for promoting women-oriented entrepreneurship, located in Helsinki. In addition to the support services provided, it would be also essential to encourage women to expand their businesses, as currently women-owned businesses tend to be small scale and they are reluctant to expand their businesses due to increasing risks. (Arenius & Autio, 1999; Virtanen & Keskinen, 2000)

2.7. Life situation

This chapter moots the effect of various life situations, such as preferable age and employment possibilities or attractive business opportunities, to entrepreneurial intentions.

2.7.1. Age

Even though age is not a static factor for entrepreneurial intentions, some age groups that are bounded to certain life situations, tend to be generally more favorable for entrepreneurship. Whereas leaving employment and becoming an entrepreneur requires developing a new professional identity, the creation of a new identity is seen harder during and after mid-age, when the surrounding expectations already match to the current position (Lehtipuro et al., cited in Virtanen & Keskinen, 2000). From the point of view of entrepreneurship, the most favorable moment for establishing a new venture is so called 'free choice period', that occurs when the person is between 26 to 36-years-old. In this age period, the person has acquired enough experience and professional skills, which are developing enough self-efficacy, to start a business. In

addition, after turning 30-years-old, the surrounding expectations of career and rapid changes in financial needs might act as an incentive for entrepreneurial intentions. Naturally, not all the entrepreneurs start their business during these most favorable age spans, but there are three factors affecting to the decision-making progress of becoming an entrepreneur: incentives for entrepreneurship, as well as pulling and pushing factors. (Liles, 1974) Another study claims the most favorable age to be between the ages of 25 to 40. The research agrees with Liles about the positive factors in this age to start a business, but also adds that the economic and social commitments done in life are not that binding as later on in life (Hebert & Link, 1989). The latest research by GEM consortium points out the highest participation for entrepreneurship to be amongst 25 to 34 and 35 to 44-years-old people. As these age spans are occurring when people are in their early and mid-careers, it most likely refers to the ambition of young people that have already been able to acquire needed networks and experience for running a business. Simultaneously, in the beginning of their careers, the younger ones might have not reached high position or salary enough that would raise the barrier of leaving their current position in exchange for entrepreneurship. (Kelley et al., 2016) In order to have an impact on entrepreneurial activity in Finland, Arenius & Autio (1999) recommend that also other age groups should be activated to entrepreneurial activities than the ones that are between ages 24 to 44. The authors continue stating that the easiest way to acquire higher entrepreneurial activity would be promoting women entrepreneurship, because even though in Finland women have equal opportunities to entrepreneurship compared with men, only 34,5 percent of Finnish entrepreneurs were women in 2009 (Stat.fi, 2011).

2.7.2. Push and pull factors

In addition to young age, the literature is talking about pushing and pulling factors towards entrepreneurship. The “push factor” –theory claims that the initiative for entrepreneurship is acquired through negative experiences with existing employment, by losing a current position or blockades in career advancement. (Gilad & Levine, 1986; Brockhaus, 1982; Shapero, 1975) In their research, Gilad & Levine (1986) also use factors to measure “push” –effect, such as personal income, availability of job opportunities and the level of personal savings. The “pull” –factors instead are caused by favorable business opportunity appearing in person’s life. The hypothesis suggests

that this type of new business formation takes place when there is a high demand for the offering, the entrepreneur has acquired certain level of credibility and has got sufficient amount of personal savings. Therefore, the pulling effect is more likely to occur in a situation in where the person with entrepreneurial intentions is not posed by threat of unemployment and has acquired necessary amounts of personal savings for starting a business. (Ritsilä & Tervo, 2002) In a small research conducted by Hauta-Aho (1990), he noticed that the pulling factors (65%) had significantly more effect as an initiative for becoming an entrepreneur than the pushing factors (35%), when measured in Finnish context. Amit and Muller (1995) again noticed that Canadian entrepreneurs initiated by the pulling factors were more successful than the ones by the pushing factors.

2.7.3. Financial situation

As mentioned in the previous chapter, financial situation of an individual also has an effect on entrepreneurial intentions. Pruett et al. (2009) noted the effect of financial situation and the concerns that are related to it, affecting entrepreneurial intentions significantly negatively. The same effect is also noted not only within individual decision-making process, but also in academic entrepreneurship, as the creation of a spin-off typically requires relatively high human and capital resources and therefore keeping the research facility committed to the venture can appear as hard (Nicolaou & Birley, 2003). Financial situation often goes hand in hand with age. Likewise mentioned, the need for stable economic situation is smaller before establishing a family and making financial commitments, like buying a house or taking a car loan. (Liles, 1974). The financial situation is often a consequence of taxation politics as well. When considering the financial uncertainty that is brought along entrepreneurship, it diminishes the amount incentives for entrepreneurship when compared to other career options. This occurs especially with people that have higher level of education, making entrepreneurship to look even less attractive option. (Arenius & Autio, 1999) Likewise mentioned before, lack of personal savings have negative effect on “pull” –factors, as feasible business opportunities might appear more unappealing than they are due to lack of personal savings (Ritsilä & Tervo, 2002).

Therefore it can be assumed that: H_{13} = Personal financial situation has strong effect on entrepreneurial intentions (Pruett et al., 2009).

3. THEORETICAL FRAMEWORK

The chapter introduces the theoretical framework of the thesis (Figure 2). Researches that have been studying factors that possibly influence to entrepreneurship. There has been a lot of research about the effect of education to the tendency of becoming an entrepreneur. The results have been both positive and negative. Yet, its effect to entrepreneurial activity is undeniable.

Also person's social networks play important role in becoming and succeeding as an entrepreneur. The influence gotten from the closest ones affect what type of view the person has about entrepreneurship, loaded with pre-assumptions. Also professional networks have their effect on decision-making of whether to start a business or not and also act as a success factor.

Psychological attributes have been studied widely, but no clear answer has been found, which types of attributes are the ones that only those who become entrepreneurs possess. Cultural attributes in turn are the prevalent attitudes that Finland has towards entrepreneurship. Political environment has a huge effect on whether entrepreneurship is seen as viable career option compared to working in existing company or being unemployed.

These factors determine the barriers and motivators for entrepreneurship. The main research question helps to chart what are the most influential factors that decrease entrepreneurial activity related to the level of entrepreneurship.

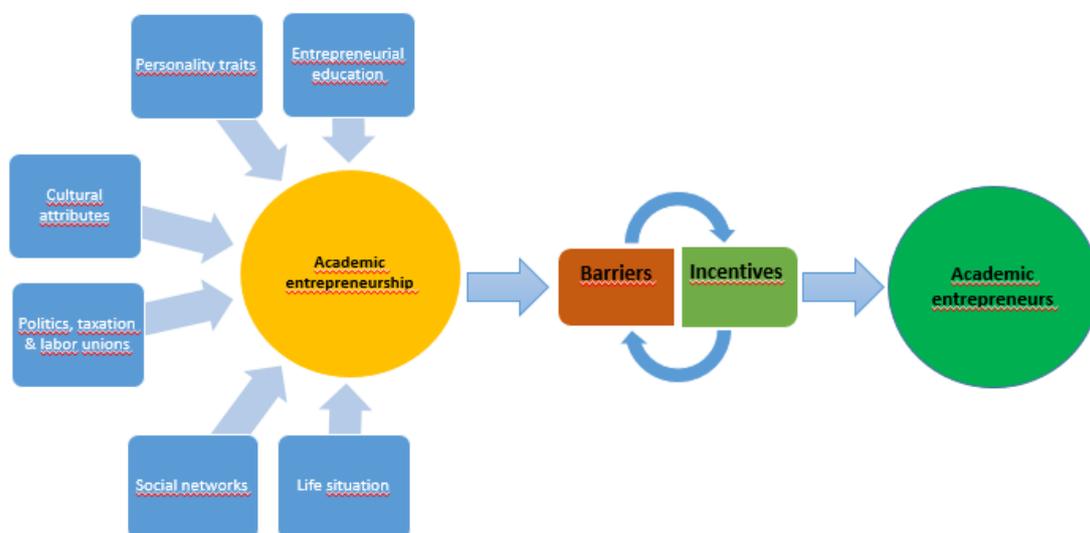


Figure 2. Theoretical framework of the thesis

4. RESEARCH METHODOLOGY AND DATA COLLECTION

This chapter introduces the studied case, the method for collecting primary data, in which way the data is being analyzed and introduces the reliability and validity of this research.

4.1. Research context

The purpose of this research is to find out the underlying motivations and barriers for academic entrepreneurship in Finland. The factors that were included in the questionnaire in order to acquire primary data are based on existing literature and studies. As most of the previously made studies have been made in other contexts, in where the legislation, culture, education and ways of behaving are different, no conclusions can be made directly from these studies in Finnish context. Academic entrepreneurship has been narrowly researched in Finnish context and the existing studies are referring to the existence of this issue, but so far in the studies made, the topic have not been in the primary research scope. Therefore the existing data is very hard to acquire and therefore creating primary data by using a survey is a necessity.

This study is conducted by using quantitative research methods. This approach was chosen due to the fact that most of previously made researches of factors that are affecting entrepreneurial intentions were done by using quantitative methods. Moreover, this approach can be justified, because the purpose is to find out the factors that are influencing the most with entrepreneurial intentions, followed by a proposition of a strategy based on those factors.

The questionnaire was structured in a way that the results could be used to create three different comparison groups. The first group consisting of Finns that were either studying, graduated or dropped out from a higher degree education institution, but had not established their own company either individually or as a co-founder. The second group consists of Finnish non-entrepreneurs, that had academic background, but who also had either studied entrepreneurship as their major or minor subject or had been part of their higher institution's entrepreneurship society or club. The last group consists of Finnish entrepreneurs with academic background. In addition, the differences between genders was observed.

By comparing entrepreneurs and non-entrepreneurs, it is possible to spot the factors that are distinguishing these two control groups and by this way to find out, which of the factors are seen as the biggest barriers and which factors can be already seen as national strengths amongst Finnish academics.

In order to find out the effect of entrepreneurial education to entrepreneurial intentions, both types of students are compared: the ones that have had entrepreneurial education as their major or minor studies or have actively participated in entrepreneurial activities organized at their higher degree institution and those with no entrepreneurial education or active exposure on entrepreneurial activities. The purpose is to find out whether entrepreneurial education or exposing to entrepreneurial activities could strengthen those factors that are affecting the entrepreneurial intentions that appear to act as barriers amongst the academics.

4.2. Data collection methods

The data for quantitative analysis is being collected by using a structured questionnaire, which has one open-ended question in order to give a possibility to respond a barrier or motivation that have not been taken into account in the set of questions. The questionnaire consists of 102 to 103 questions, depending on whether the respondent is an entrepreneur or not.

Most of the questions can be answered on 7 –item Likert scale. The original questions mostly used either 3 or 5 –item scale, but the answer options were expanded in order to acquire more accurate information on effects of the items. The questions were formed by using questions from previously made researches.

The questionnaire was built on Qualtrics online platform and launched on 27th of July 2016. In total the duration of the questionnaire was 13 days. During this period, altogether 175 respondents started the questionnaire and out of those, 113 finished the questionnaire until the end. Out of the total amount of respondents that answered the questionnaire until the end, 87 were non-entrepreneurs and 25 were entrepreneurs. Altogether 21 respondents had been either studying entrepreneurship as their major or minor subject or had actively taken part in the actions of an entrepreneurship society or club at their higher degree study institution. The survey was mainly distributed by using social media, but also through author's own social

network. Members in the author's personal network, as well as the social media postings, were strongly suggesting of spreading the questionnaire forward in order to create a snowball effect and by this, gather more responses.

The first part of questionnaire (questions 1-9) determined the respondents' study and demographic background and also validated whether the respondent matched to any of the studied compared groups. In addition to separating the three studied groups in this part and validating the respondent, the section's purpose was also to gather data about the respondent's age, which can be then used to reflect the results to existing theory about most favorable ages of becoming an entrepreneur. The first part also helped to examine, whether there were differences between the genders in terms of barriers and motivations that are affecting to entrepreneurial intentions.

Questions that were included in the second part of the questionnaire (questions 10-25) are concentrating on acquiring primary data of personality traits that have effect on entrepreneurial intentions regarding to theory. The variables inspected and the sources for the used questions in Qualtrics survey can be found from Table 1.

Question patterns 26 and 27 examined the effect of life situation to entrepreneurial intentions. Respondents' age belong to this part of the study as well, but it is included in the first section in order to structure the questionnaire more logically.

The fourth part of the questionnaire (questions 28-30) concentrated on examining respondents' views on the effect of their social networks to their entrepreneurial intentions. Due to the sensitivity of the questions included in question pattern 30, in particular question 28_1 – 28_5, that are examining the effect of authoritative parenting to entrepreneurial intentions, resulted in decision to make the poll anonymous for respondents.

The following section, which consists of question patterns 31 to 35, are assessing the effect of politics, taxation and recruiting policies towards entrepreneurial intentions. Moreover, questions 33_1 and 33_2 are assessing the level of knowledge on the availability and easiness of acquiring debt- and equity –based financing in Finland. This part of the questionnaire also charts the general knowledge on the availability of public sector's support services for entrepreneurship and also aims to spot out prevailing misconceptions that Finnish academics might have on factors mentioned in Table 1.

Table 1. Survey variables

Variables	Elements	Scale	References
Personality traits	Locus of control	7-point Likert scale	Lumpkin (1985) WRDF (2016)
	Achievement motive	7-point Likert scale	WRDF (2016) Bong (2001)
	Risk propensity	7-point Likert scale	McCline et al. (2000)
	Self-efficacy	7-point Likert scale	McGee et al. (2009)
	Agreeableness	7-point Likert scale	Haigler & Widiger (2001)
	Innovativeness	7-point Likert scale	Mueller & Thomas (2001)
	Social competence	7-point Likert scale	Baron & Markman (2003)
	Neuroticism	7-point Likert scale	Scheier et al. (1994) Rammstedt & John (2007)
	Openness to experience	7-point Likert scale	Haigler & Widiger (2001)
	Extraversion	7-point Likert scale	John & Srivastava (1999)
	Conscientiousness	7-point Likert scale	Gosling et al. (2003)
	Individualism & need for autonomy	7-point Likert scale	Coviello & Yli-Renko (2016)
Uncertainty avoidance	7-point Likert scale	Jung & Kellaris (2004)	
Social networks	Prior experience on start-up culture	7-point Likert scale	WRDF (2016)
	Family Support	7-point Likert scale	Pruett et al. (2009)
	Entrepreneurs in family/close circles	Dichotomous scale	WRDF (2016)
	Authoritative parenting	7-point Likert scale	Steinberg et al. (1992)
Entrepreneurial education	Level of entrepreneurial education	7-point Likert scale	Reynolds et al. (2008)
	Industry relationships	7-point Likert scale	Reynolds et al. (2008)
The effect of politics, taxation and labor unions	Equity financing	7-point Likert scale	Baughn & Neupert (2003)
	Taxation	7-point Likert scale	Coviello & Yli-Renko (2016)
	Recruiting	7-point Likert scale	Baughn & Neupert (2003)
	Entrepreneurial support services	7-point Likert scale	Pruett et al. (2009)
	Residual incentives	7-point Likert scale	Reynolds et al. (2008)
	Subjective norm	7-point Likert scale	Reynolds et al. (2008)
	Failure	7-point Likert scale	Reynolds et al. (2008)

Cultural attitude towards entrepreneurship	Women entrepreneurship	7-point Likert scale	Reynolds et al. (2008)
Life situation	Age	18 to 65+ selection	-
	Financial situation	Dichotomous scale	Archuleta et al. (2013)
	Pull factors	8-point Likert scale	Coviello & Yli-Renko (2016)
	Push factors	8-point Likert scale	Spector (1994)

4.3. Data analysis methods

The results acquired from the questionnaire were analyzed by using SAS Software Enterprise statistical analysis program, developed by SAS Institute Corporation.

The suitability of each variable was tested by running factor analysis for every variable in the original set of questions that was designed for the questionnaire. Factor analysis revealed that the questions mostly did not load into same sum variables as they originally were designed to belong to. This caused a situation, in where some of the new sum variables reflected their original purpose and some of the newly formed sum variables were renamed to fit the characteristics they reflect the most regarding to the variables included in them. This led to a situation in where some of the most essential elements that could not be dropped out, were taken into analysis as single-items. Altogether 14 sum variables were formed by factor analysis. In addition, 18 single-items were taken into analyses, of which 8 were originally planned to be used as stand-alone measurements, descriptive items. One of the original factors, uncertainty avoidance, had to be dropped out from the examination, as all of its items loaded to another factor, risk propensity and thus, leaving no possibility to analyze this aspect by choosing a single-item from the factor.

The data was first analyzed by using Wilcoxon two-sample test in order to measure if different types of respondents had statistically significant differences in their answers. This test was chosen as used Likert –scale represents either ordinal or interval scale and the classified variables used for testing – gender (Q5), the status of entrepreneurial studies (Q9) and entrepreneurship (Q2) – represent nominal scale. The null hypothesis in this test is that the samples are from similarly divided populations, unless the risk

level Z is below 0.05 and the hypothesis is being discarded. (Tarkiainen & Hujala, 2013)

Before the variables were analyzed by using regression analysis, in order to find out underlying dependencies, Spearman correlation tests were run in order to validate the variables' use in linear regression analysis. The Spearman correlation test was chosen, as all the sum variables used could be either classified as ordinal- or interval-scaled. Null hypothesis in Spearman correlation test is that the variables do not correlate with each other, unless the P -value is less than 0.05 (Tarkiainen & Hujala, 2013). Details of the correlation analysis can be found from Appendix 1.

Regression analysis was run with variables that were correlating in Spearman correlation analysis. The used linear regression analysis method applied was OLS, Ordinary Least Squares. The aim in this analysis was to examine the effect of explanatory variables to the explained variables by predicting the value of continuous, explained variable, when the values of used explanatory variables were known. (Alkula et al., 1994, 249-252) Regression analysis was done on three explained variables: innovativeness, neuroticism (15_1) and entrepreneurial intentions (Q3_1). The distributions of residuals were normal, as can be seen from Appendix 2. The hypothesis of linear regression analysis stays valid, unless $Pr > F = >0.05$. Moreover, the models were homoscedastic, whereas $Pr > ChiSq = >0.05$, with an exception of neuroticism (Q15_1), which appeared to be heteroscedastic. Chi-squares of the models can be found from Appendix 3.

4.4. Reliability and validity

The questions were operationalized by forming the question sections according to the question patterns used in previous studies and only the questions that were determining demographics and study background are self-formed. As the items were taken from studies that were proven to reliable and had been successfully used in previous studies, they should prove reliable also in this study. In addition, the usage of 7-item Likert scale was justified in this case, as almost all the questions adopted from previous theories were measured by using the same scale. The questions used were originally written in English, but due to the need for limiting the audience only to Finnish respondents, the questionnaire was forward-translated to Finnish language. Yet, due

to limited time frame, the questions have not been back-translated to English, leaving a possibility for the existence of item biases. After receiving the results of the survey, there has been doubts, whether the question 26_1, "Prior work experience", is valid in terms of measuring the positive effect of previous work experience due to its too generalized question setting.

Before distributing the questionnaire, it has been tested multiple times with three volunteers that have academic background and modified according to the feedback received from them. Regarding to proposed suggestions, some of the questions from the original sets have been dropped off, as they were seen as redundancy or too difficult to understand and also due to need to make the questionnaire shorter and therefore the responding more tolerable - without affecting its validity. The questions that were modified to more understandable form according to the feedback received from the test group can be found from question patterns 14, 16 and 18. The whole set of questions is included in Appendix 4.

The answers were mostly examined in three different groups: higher degree students and graduates that are not or have not been studying entrepreneurship as their major or minor and have not participated in entrepreneurial activities. The second group are the students or graduates that have been or are studying entrepreneurship, or are actively involved in entrepreneurial activities. The third group are higher degree students or graduates that have established a company. The latterly mentioned group filled up a modified questionnaire in order to find out their motivations and barriers for entrepreneurship before and after the establishment of their companies. On average, these respondents had established their companies 3.2 years ago, with maximum value being 10 years or more since the establishment. Therefore, it can be assumed that the effect of memory bias should not be too strong to affect their answers' reliability.

Most part of the respondents that took part in the survey were either business- or engineering students or graduates. Due to this fact, it has to be taken into account that the results of this study might be different, if a wider scale of study fields would have been represented amongst the respondents. Also, a relatively small sample of entrepreneurs, of which total of 34 started the questionnaire and out of them, 25 finished the questionnaire until the end, can have an effect on the reliability of the results. The limited amount of respondents' fields of studies can explain, why the

answers of two compared groups, entrepreneurs and non-entrepreneurs, did not statistically differ from each other in the questions that were assessing the effect of politics, taxation and recruitment policies.

Formed sum variables proved to be reliable according to their Cronbach Alpha values. The formed sum variable extraversion received a standardized value of ~ 0.86 , innovativeness a value of ~ 0.83 . Social competence also proved to be reliable sum variable by its standardized value of ~ 0.89 , as well as self-efficacy with ~ 0.81 . Self-confidence, originally included within self-efficacy –factor, received a standardized value of ~ 0.78 . Risk propensity valued ~ 0.74 , need for autonomy ~ 0.77 and individualism ~ 0.72 . In addition, sum variable achievement motive proved to be reliable with its alpha value of ~ 0.72 , but consists of only two items. The sum variable authoritative parenting has a standardized Cronbach Alpha of ~ 0.77 and general attitude, referring to the level of acceptance of surrounding culture towards entrepreneurship and the risk associated with it, received a value of ~ 0.8 . Entrepreneurial support services, received a value of ~ 0.82 , pull factors a value of approximately 0.78 and push factors received Cronbach's Alpha value of ~ 0.69 . All the Cronbach Alpha values are listed in Appendix 5. There is no exact level of acceptable value of Cronbach Alpha, but it depends on the situation and the amount of items included in sum variables, according to the literature. Yet, the common understanding is, that the accepted level of Cronbach Alpha should be approximately 0.70. (Schmitt, 1996) As the sum variables that were formed by using factor analysis excluded some of the factors that are affecting entrepreneurial intentions according to theory, they were included into the analysis as single-items. In case of social exposure, both items are included into the analysis, as both of the items are seen as such important factors for promoting entrepreneurial intentions and therefore neither one of them could not be excluded. The original division for variables can be found from Appendix 6. Due to the usage of single-items, its effect to total validity of the research must be taken into consideration. The list of formed sum variables, used single-items and descriptive items are listed in Appendix 7. Some of the sum variables were discarded due to insufficient MSA values and this has affected the decision to form some of the sum variables with only two items or running analyses by using certain single-items.

Due to the correlation analysis, only one model in regression analysis had multiple explanatory variables. The model that had entrepreneurial intentions (Q3_1) as

explained variable, had no multicollinearity between the explaining variables, as they all reached a tolerance value above 0.1 (Appendix 8). Also, it has to be taken into consideration that the correlation coefficients were relatively low in many cases (Appendix 1).

Also, Qualtrics converted values to the answers in reverse order, meaning that in exported raw data, value of 7 equals to “not at all”, depending on the question and the value of 1 again means “totally agree” or a similar, positive selection, depending on the question. Yet, this has been taken into account, meaning that the data and the answers that are processed in analyses and being shown in tables, figures and abbreviations, are as they were originally meant to be, meaning the value of 7 means a positive selection and vice versa.

5. FINDINGS

This chapter introduces the most important findings regarding to motivations and barriers towards entrepreneurial intentions that were acquired by analyzing the primary data acquired from the survey.

5.1. Sample description

Out of all the respondents, only one respondent did not qualify for the questionnaire and was charted out with the first question concerning the degree of studies. Altogether, out of 122 respondents that finished the questionnaire, 54 were male and 58 were female, meaning that the acquired sample almost equally covers the opinions of both genders. The most represented fields of studies amongst the respondents were business studies and engineering studies. The rest of the respondents represented various fields of studies and the other fields were represented in small quantities, varying between 1-3 percent. More details can be found from Table 2. Altogether 29 percent of the respondents had already been graduated, whereas the respondents that were currently studying divided relatively equally in terms of completed years of studies.

In the end of the questionnaire the respondents had a possibility to express themselves if they felt that there would be other factors affecting to their entrepreneurial intentions that were not mentioned in the questionnaire. Altogether 40 respondents expressed themselves in this part. Amongst these replies, the importance of positive role models in family or within close acquaintances could be spotted, as this was mentioned five times. Also discouraging role models – either within or outside family - were mentioned few times in the responses. Family's attitude towards entrepreneurship also rose up from the answers, as well as prevailing acceptance of entrepreneurship, failure and acquisition of wealth by entrepreneurship. These factors are referring that the opinion of surrounding culture and family has effect on entrepreneurial intentions amongst the respondents.

In addition to the level of acceptance of surrounding culture and people, taxation, social security and entrepreneurial education were mentioned multiple times. The respondents saw that entrepreneurship in general would be expensive in Finland due to high taxation and the social support provided for entrepreneurs to be too small, causing the overall risk of becoming an entrepreneur to be unbearable. The respondents also saw flaws in entrepreneurial education, especially in primary education. This has been already noticed in existing theory and up to this day, changes have been already made. Yet, the respondents' experiences of primary education were derived at least 7 years back from this date and improvements have been made since.

Few respondents mentioned unemployment or its threat as a pushing force to become an entrepreneur. Even though in innovation –based nations, entrepreneurship most often happens through pulling factors, it seems like this factor should be taken into account. Pushing factors were included in the questionnaire only from the point of view of job satisfaction. Unemployment or its threat are considerable factors for academic entrepreneurship, but as this pushing force is caused by inevitable situation, its link to entrepreneurship will not be examined further in this study. Yet, it is recommended that the public sector should promote this option in case of unemployment and revise its support activities offered for the citizens. Moreover, the survey results pointed out that entrepreneurs were mostly satisfied with their current employment, even though some significance could be also seen in the questions measuring push –factors.

In addition to previously mentioned factors, the respondents mentioned current economic situation and its uncertainty to act as a barrier for entrepreneurship. Also, in

terms of personality qualities, some of the respondents seemed to be concerned of their own mental capabilities and lack of self-efficacy. In addition, such factors as family's wealth, good salaries in work life, rigidities caused by the existence of labor unions, lack of spare time and start-up grants were mentioned. The latterly mentioned did not specify, whether the existing amount of start-up grant acts as motivating or demotivating factor for entrepreneurship, but yet it points out the importance of the grant's existence. The section with a possibility for free word was designed to find out, whether there are factors that had not been taken into account in the questionnaire, but as the factors that gained the most attention were already included in the questionnaire and therefore in the research, it was not justified to form new factors for analysis based on the feedback.

Table 2. Distribution of fields of studies

Field of study	% of respondents
Master's degree, business studies	36
Bachelor's degree, business studies	25
Master's degree, engineering	11
Bachelor's degree, business administration (UAS)	6
Bachelor's degree, engineering	5
Other fields of studies	17

The question that measured respondents' current motivation for entrepreneurship was unsurprisingly the strongest amongst those who were entrepreneurs. As can be seen from Table 3, the variation between those, who either studied entrepreneurship or had taken part in entrepreneurial activities at their study institution, was relatively big. This can result because of the respondents are being already more interested in entrepreneurship due to their choice of major/minor subject, or their willingness to take part in entrepreneurial activities. No statistical significance was found between the respondent groups' social exposure and self-efficacy, which could have explained the difference as well.

Table 3. Respondents' current entrepreneurial motivation

Group	Response average on scale 0-100
All respondents	53,87
Entrepreneurs	78,20
Non-entrepreneurs & no entrepreneurship studies or activities	44,46
Non-entrepreneurs & entrepreneurial studies and/or activities	60,62

Comparison between the genders pointed out that men have stronger personality traits in terms of entrepreneurship in most cases. This was already assumable regarding to existing theory that has compared the differences in personality traits between the genders (Crant, 1996). Male respondents appeared to be seventeen percentage points more individualistic than female respondents. Males were also relatively less neurotic than females. In addition, they believed that they had more confidence in their abilities to successfully run their own business venture, meaning that the mean score of entrepreneurial self-efficacy was approximately nineteen percentage points bigger than the female respondents had. This particular personality trait might work as well as an explanatory for why the male respondents also had significantly more positive point of view regarding to question 26_1, of which question setting "*In my opinion, I have a good understanding how a business venture should be run*" might be understood in such way, that it reflect the effect of entrepreneurial self-efficacy.

Female respondents had more negative point of view about their families' acceptance of entrepreneurship as a career option. This was also noted in a study conducted by Virtanen and Keskinen (2000), in where they noticed that the support of close acquaintances denoted significantly to the decision-making progress of becoming an entrepreneur amongst women. Also the reason behind why the difference between male and female respondents was statistically significant, in terms of prior work experience, could follow the assumption made in a previous study, in where the researchers have noticed that the effect of prior work experience does not always appear as a motivator towards entrepreneurship. Positive experiences might encourage women towards entrepreneurship and the negative ones act as pushing factors towards it, but difficulties in advancing on career in stiff and hierarchical cultures can be more challenging for women and this might have a discouraging effect towards entrepreneurial intentions. (Scherer et al., 1990)

Yet, female respondents appeared to be fourteen percentage points more socially competent than males and also more open to experiences, with a difference of approximately sixteen percentage points. In terms of risk propensity, female respondents appear to avoid risks more than male respondents, which has been already noticed previously in Finnish context (Arenius & Autio, 1999). Remarkable in the results was the significant difference in the opinions between genders when examining question 38_1, that charted the opinion of the respondents on whether women are exposed to as many good opportunities as men to start a business. The difference between genders was approximately eighteen percentage points and therefore reflects that in order to boost academic entrepreneurship, entrepreneurial opportunities and related services should be promoted much more efficiently to women. All the results of variance analyses can be found from Appendix 9.

Regression analysis, that was done in order to find out if the hypotheses that were based on existing theory would be accurate also in Finnish environment and by this, reveal ways of improving the level of entrepreneurial intentions, appeared to be less successful than expected. When Spearman correlation tests were run, which is a condition for including the variables to regression analysis, most of the variables had to be discarded, as their P-values were above the defined risk level of 0.05 (Appendix 1). Therefore majority of the hypotheses could not be supported, as can be seen from Table 4.

In the regression analysis that had entrepreneurial intentions (Q3_1) used as explained variable, the results pointed out that the null hypothesis regarding to explaining variable Q23_1 (financial situation) had to be discarded due to its t-value ($P > |t|$) was above the accepted risk level of 0.05 and therefore this hypothesis could not be supported (Appendix 8). In case of family's attitude towards entrepreneurship (Q26_2), the regression coefficient pointed out the positive effect of families' permissive attitude on entrepreneurial intentions. In this sense, four points more positive answer on Likert – scale in terms of family's acceptance would mean that the respondent's entrepreneurial intentions would double in relation to his original answer – if assumed that all the other factors affecting to entrepreneurial intentions would remain the same. Therefore it can be concluded that the ninth hypothesis is supported. (Appendix 8)

Fifth hypothesis, which is concerning the effect of personality trait openness to experiences towards increased level of innovativeness can be supported, as the t-

value of this model was well below the risk level and the slope pointed out that the level of innovativeness grows positively in relation to the growth of openness to experience (Appendix 10). In case of fourth hypothesis, all the other variables were discarded due to invalid correlation, except extraversion. The variable's t-value was below the risk level and also in this case it was possible to see the positive relation between high extraversion and low neuroticism (Appendix 11). However, as the other variables could not be proven in this hypothesis, it can be only partially supported.

Table 4. Hypotheses

Hypothesis	Status
H ₁	Not supported
H ₂	Not supported
H ₃	Not supported
H ₄	Partially supported
H ₅	Supported
H ₆	Not supported
H ₇	Not supported
H ₈	Not supported
H ₉	Supported
H ₁₀	Not supported
H ₁₁	Not supported
H ₁₂	Not supported
H ₁₃	Not supported

5.2. The effect of entrepreneurial studies and activities

Wilcoxon two-sample test, in where Q9, entrepreneurial studies, was used as classifying variable, revealed that entrepreneurial studies have effect on individual's level of innovativeness. The respondents that had been studying entrepreneurship or been actively participating in entrepreneurial activities, saw themselves approximately 25 percentage points more innovative than those, who had not been exposed to entrepreneurial activities or studies at their higher education institution. They also appeared to be one fifth more socially capable than the compared group. The difference again might be explained due to possibly different mindset of those, who choose to study entrepreneurship. In addition, entrepreneurship students or graduates craved for autonomy significantly more than the peer group in this analysis. Moreover, entrepreneurial students scored approximately sixteen percentage points more in

terms of conscientiousness than the ones who had not been strongly exposed to entrepreneurship during their studies.

The single-item that was measuring the effect of prior work experience appeared to be strong amongst the entrepreneurial students as well. The question format of this particular question rises doubts, as it also proves to differ significantly in other comparisons between different groups of respondents and to appear with strong entrepreneurial self-efficacy, except in this concept, in where entrepreneurial studies can explain its significance.

This comparison brought also unexpected results. Entrepreneurial students or graduates had significantly more negative view on company taxation in Finland, with approximately 24 percentage point difference to the peer group. In addition, non-entrepreneurship students had more positive view on recruiting policies, meaning that entrepreneurial studies do not appear to be beneficial towards entrepreneurial intentions in all aspects. This might be caused due to better knowledge that entrepreneurial students have on this matter and which is likely to reflect negatively in this case. Also the prevailing opinion amongst the respondents was predominantly negative towards these two factors. Moreover, non-entrepreneurship students had significantly more positive view of prevailing cultural attitude towards entrepreneurship than entrepreneurship students or graduates.

The most surprising results was that entrepreneurial self-efficacy did not significantly differ between the respondents that had been studying entrepreneurship or taken part in entrepreneurial activities and the respondents, who had not been involved in either one of these. Regarding to (Zhao et al., 2005), entrepreneurial education should strengthen this personality trait and therefore the similarity of both compared groups is unexpected. This might be due to possibility, that lack of entrepreneurial self-efficacy could be rather a national characteristic amongst Finnish academics and therefore missing also from entrepreneurship students or graduates.

5.3. Comparison to entrepreneurs

The primary data was first analyzed by using the Wilcoxon-Mann-Whitney two-sample test, in where question 2, whether the respondent is an entrepreneur or not, was used as classifying variable. Null hypothesis in this test is that the correlation between

compared samples is zero, unless P-value receives a significance level less than 0.05 and therefore the hypothesis is rejected (Alkula et al., 1994, 99). The results pointed out that entrepreneurs are not in fact more extraverted than the others respondents, as the significance level of ~ 0.6 is far away from the level, in where the hypothesis would be rejected. This supports the conclusions made in previous researches, that extraversion is not a necessity for becoming an entrepreneur, but rather predicts success in running a company, partly due to socially competent individuals' ability to build up social networks more efficiently (Kauranen, 1993; Brandstätter, 1997). Unsurprisingly, the same result was received with social competence, the factor in which extraversion was originally included in the questionnaire set. In comparison with innovativeness, the result was different, as the null hypothesis was rejected. The score pointed out that entrepreneurs were more innovative than the other respondents from their own point of view and the difference between the respondents was approximately sixteen percentage points. The significance of the test was still slightly uncertain with a value of only slightly under 0.05. The result confirms the assumptions based on previous researches, in where innovativeness is seen as a predictive personality trait for entrepreneurial intentions, but does not necessarily qualify person as future entrepreneur, but rather is seen as a factor that increases the ability to acquire knowledge in work life as well (Opetusministeriö 2009). Mostly innovativeness is seen useful in various tasks of business, such as in marketing, management and manufacturing processes (Casson, cited in Littunen, 2000). Also a reason why entrepreneurs tend to be more innovative can be due to their ability to spot and come up with new business ideas or models due to this personality trait (Oosterbeek et al., 2010).

Entrepreneurial self-efficacy, the personality trait that is the most agreed factor amongst previous studies for predicting entrepreneurial intentions, had significant differences between entrepreneurs and non-entrepreneurs. The entrepreneurs saw themselves to possess high self-efficacy, approximately twenty percentage points more than the rest of the respondents. Also the significance level of p-value was as low as 0.01, meaning that rejecting the null hypothesis is clear in this case. The qualities of individuals that are possessing high entrepreneurial self-efficacy, tend to be self-confident in taking a risk, have strong belief in their level of innovativeness, as well as to strongly believe in their success in various areas of business, such as

marketing, management and controlling financial aspects (Chen et al., 1998). Entrepreneurial self-efficacy is not a static state, but it can change due to exposure and in different phases of life. When examining the differences between entrepreneurs and non-entrepreneurs, the effect of entrepreneurs within family or close acquaintances towards respondents' entrepreneurial self-efficacy seemed to be strong. Over half of the entrepreneur respondents had either both or the other one of their parent as entrepreneur and the amount of entrepreneurs within their relatives or friends was also much bigger than with respondents that were not entrepreneurs. Also, the ratio of entrepreneur respondents, who also have or had been either studying entrepreneurship or participated in entrepreneurial activities of their higher education institution was significantly higher than the rest of the respondents. This points out that social exposure has a strong, positive effect on strengthening this personality trait and those possessing this trait also tend to seek entrepreneurial education. Also the two-sample test supported this assumption, except that the null hypothesis was rejected only in case of social exposure caused by parents' entrepreneurship, but not with the exposure from other close acquaintances, such as relatives or close friends. As the theory suggests, there are four various ways for strengthening this quality. The first and most important is social exposure, the existence of positive roles models for entrepreneurship. Other methods, modeling challenging situations, is usually included in entrepreneurial studies, as these situations are very likely to occur in entrepreneurship. Also mastering experiences, the third method, is included in entrepreneurial studies, as it is the basic purpose of studies. Again, the last method, enhancing one's physical status, is not dependent on the type of studies, but is rather based on individual decision. (Wood & Bandura, 1989) Self-confidence, the sum variable that was originally included in the factor measuring self-efficacy, reached significance level of ~ 0.1 and therefore cannot be measured on its own due to the validity of null hypothesis.

As the theories that were used as a base for this study, entrepreneurs do not seem to have more propensity for taking risks than other respondents (Huuskonen, 1992; Brockhaus, 1982), as pointed out by the null hypothesis, which appeared to be valid. As Low and MacMillan (1988) claim, the willingness to undertake a business venture has come to exist from other factors than the tendency to take more risks. One strong explanatory for this might be the tendency of entrepreneurs for overestimating their

own success (Keh et al., 2002), as in the study conducted by Cooper et al. (1988), more than four out of five respondents believed that their venture will have at least 70 percent chance of succeeding in future, even though the statistics prove that in fact up to 71 percent of these companies do not exist within five years. Therefore entrepreneurs are rather seen as type of personalities, who are able to develop such strategies that can help to spot and minimize the risks that are associated with market opportunities (Keh et al., 2002).

Both sum variables, need for autonomy and individualism, proved to be differentiating variables between entrepreneurs and non-entrepreneurs with significance levels of ~ 0.008 and ~ 0.004 , leaving no option for interpreting the null hypothesis. In the questionnaire these formed sum variables were grouped together, as individualism is usually used on a national scale, rather than as a measure for personal qualities. The difference between respondent groups appeared to be between 21 to 22 percentage points. As Mitchell et al. (2000), as well as Mueller and Thomas (2001) claim in their studies, individualism is a personality trait often linked with entrepreneurial intentions. On a national level, individualistic societies tend to be more achievement-oriented and competitive (Pruett et al., 2009). Again, these two personality traits are so close to each other that they share multiple common qualities. In addition, need for autonomy is often seen as a motivator for choosing entrepreneurship over paid employment as a career option. As paid working does not most often offer total freedom for personal decisions, it leaves the individuals with this personality trait unsatisfied with their current situation. (Oosterbeek et al., 2010) As entrepreneurs often say, the main reasons for starting their own business is not in fact the economic value possibly received from it, but rather the need to work autonomously and create something new, in which they are themselves able to contribute into (Pruett et al., 2009). According to theory, need for autonomy can be strengthened in childhood by authoritative parenting (Schmitt-Rodermund, 2004). A small finding from examining the data was, that despite of authoritative parenting receiving a significance level of ~ 0.66 , in case where entrepreneurship is being used as classified variable, the raw data points out that in most of the questions in this measuring this factor, entrepreneurs have answered either 6 or 7 on a 7- point Likert scale, unlike other respondents. In case of this question, also the effect of memory bias is at its strongest and one explanatory reason for why the null hypothesis could not be invalidated, could be due to the average, as well as

standard deviation of entrepreneurs' age being higher as amongst the rest of respondents, meaning stronger effect of memory bias.

Noticeable is that both, prior experience and family's attitude towards entrepreneurship, had significant variety between entrepreneurs and non-entrepreneurs. According to Huuskonen (1992), career choices are not only based on individual's own decisions, but they also tend to be reflections of people's expectations around them and the strongest effect comes obviously from family. Yet, the effect of family's acceptance is still moderate compared to individual's own decisions (Krueger et al., 2000). Prior industry experience again is a controversial topic. Willard et al. (1992), as well as some other studies claim that prior experience predicts success in running a company and Klofsten and Jones-Evans (2000) even state that the experience can boost entrepreneurial intentions. The effect of prior experience is unquestionable, but the level of its effect again is, as Koskinen (1989) claims that experience boosts entrepreneurial success and intentions only moderately. Therefore these perceptions are interesting and the differences between entrepreneurs and non-entrepreneurs might be due to the fact that the firstly mentioned group has already experienced that they are capable of running a business on their own, as well as noted in reality their families' positive attitude for entrepreneurship. Whereas respondents who are not entrepreneurs, can only base their answers on assumptions to both of these factors. This possibility was not taken into account when designing the questionnaire, leaving room for future research on these factors.

What was remarkable in the results, is that personality traits neuroticism, locus of control and openness to experience did not statistically differ between entrepreneurs and non-entrepreneurs. When examining the results, the data clearly proved positive signs of these personality traits in Finnish context. According to the replies, Finnish academics score extremely low in terms of neuroticism. Low neuroticism is seen as an indicator for entrepreneurial intentions, especially in combination with other personality traits and gives a sign that this trait is one of the motivating factors for entrepreneurship in Finland. The same occurrence could be noticed within the questions concerning internal locus of control. In the original set of questions measuring this personality trait, in some of the questions ~81 to ~98 percent of respondents had chosen selection "7", indicating extremely high internal locus of control. In addition to entrepreneurial self-efficacy, this personality trait is also widely accepted in previous studies to be a strong

predictor for entrepreneurial intentions (Littunen, 2000; Virtanen & Keskinen, 2000). Yet, it has been seen that even though this personality trait is strongly indicating entrepreneurial intentions, it might result in entrepreneurship with a combination of desire for entrepreneurship, life situation and other personality traits and not as stand-alone phenomenon (Huuskonen, 1992). The respondents also scored high in openness to experience. This personality trait does not only refer to entrepreneurial qualities, but also as capableness of managers. With a combination of low neuroticism amongst few other traits, this attribute is strongly seen as part of entrepreneurial personality. (Zhao & Seibert, 2006; Schmitt-Rodermund, 2004) In terms of achievement motive, almost all the respondents appeared to be highly motivated. There were no statistically significant differences between the examined respondent groups.

The questionnaire also included multiple describing factors that were charting respondents' opinions about company taxes, the easiness of acquiring debt and equity financing, prevailing cultural attitudes towards entrepreneurship, the availability of support services, residual incentives available for entrepreneurs and possibilities to affect recruitment and employment contract termination policies. The reason for including these factors into the questionnaire was to find out, whether entrepreneurs see these factors differently than those, who have not been involved in running a business. Surprisingly, null hypotheses were not rejected with any of the previously mentioned factors, meaning all the respondents had similar type point of view of prevalent legislation, availability of support services, cultural atmosphere and the possibilities for acquiring financing. This probably happens due to the fact that all the respondents are highly educated, as well as from the fact that many of the respondents are either studying or have been graduated from various fields of business studies, in where the content of these factors have been part of their education. As these factors mostly cannot be affected on individual level, examining the answers gives a picture of which type of assumptions academics have of these factors. In taxation, the results point out that over 70 percent of respondents consider on some level that company taxes are high in Finland and almost 28 percent of the respondents selected option "7" on the scale, when measuring the single-item that was taken into analysis. This points out that not only entrepreneurs, but as well non-entrepreneurs see taxation as an issue and this might act as a barrier for starting a business. Also, in terms of recruiting

policies, the respondents were strongly pessimistic about employers withholding control of recruitment and redundancy policies. The single-item that was taken into analysis regarding to residual incentives available for entrepreneurs also resulted with highly pessimistic answers. This issue has been already noticed in Global Entrepreneurship Monitor's research (Arenius & Autio, 1999) and is seen as plausible explanation for lack of entrepreneurial intentions in Finland. Due to lack of residual incentives, the risk associated with entrepreneurship tends to grow untenable compared to other options, as paid employment or even unemployment. Especially the risk ratio grows exponentially with higher education, as the level of salaries are becoming even more attractive compared to entrepreneurship and its risks. Therefore the challenge would be to change entrepreneurial policies from aid –based towards more incentive –based policies.

Surprisingly, the null hypothesis remained valid as well in case of acquiring equity financing. The expectation would be that entrepreneurs would have a deeper knowledge on this matter due to their possible exposure for acquiring financing. Yet, the questions that were measuring access to funding were mostly answered with option "4", meaning that the respondents are not very aware of the availability or accessibility of funding options. This might also act as a barrier for starting a business and should these options should be promoted more actively. The same lack of knowledge could be spotted with the availability of entrepreneurial support services, as most of the respondents selected options "3", "4" or "5", referring to neutral opinion concerning this factor. The questions that were measuring prevailing cultural attitude towards entrepreneurship and the risk associated with it, resulted with interesting opinions. Most of the respondents saw that entrepreneurs have high status in society and they are generally respected, as well as becoming rich by establishing own venture was seen as acceptable. This goes in line with earlier researches that were pointing out that the general attitude towards entrepreneurship is positive (Arenius & Autio, 1999), even though since GEM Consortium's report was done, the public opinion has gone down slightly, except in terms of positive publicity given in Finnish medias (Elinkeinoelämän keskusliitto, 2015). Instead the opinions regarding to the acceptance of risk-taking in entrepreneurship and supportive attitude towards innovativeness and creativity in Finland had mostly negative points of views. This is surprising, as in in Laukkanen's (2003) research, he noticed that in academic context, failure is widely

accepted and seen as a part of entrepreneurship, hence not creating any type of stigma over the person who did not succeed in running a business venture. Also, a competitiveness report from 2015 shows that Finland was ranked to be the most innovative nation during that year (World Economic Forum, 2015). The underlying reason for pessimistic point of view about the support for innovativeness and creativity could be due to imbalance of innovative actions. Finnish companies concentrate more on cost savings and lengthening the life cycle of their existing offerings, instead of renewing them. Therefore most of the innovative actions occur in large enterprises and ICT –sector and therefore may not appear to majority of the population, as they are either working or practicing business on SME –sector. (Alasoini et al., 2014; Yrittäjät, 2015)

5.4. Key motivators for academic entrepreneurship

According to the results, Finnish academics have multiple strong personality traits that are supporting entrepreneurial intentions, but they mostly had relatively negative point of regarding to political environment.

The majority of respondents saw themselves as highly extraverted, which does not directly link to entrepreneurial intentions, but is seen as big advantage in terms running a venture successfully. This personality trait is highly demanded in order to network successfully. Also the respondents saw themselves to be socially competent, meaning that in different social situations, they are able to adapt their behavior to fit the current settings. These both personality traits combined signal that in general Finnish academics should not have barriers in managing social situations and therefore ought to be highly capable of networking.

Mostly Finnish academics were also open to experiences, even though there were differences between the genders regarding to this personal trait. Openness to experience is linked to ability to innovate, which again appears strong amongst entrepreneurs and should be reinforced within academics with low entrepreneurial intentions. Also, generally the respondents had low neuroticism, which is a promising sign of possible entrepreneurial intentions, when combined with high extraversion and conscientiousness, personality traits that are also appearing strongly amongst the respondents (Grant & Langan-Fox, 2006). Finnish academics also appeared to have internal locus of control and therefore to believe that they are themselves mainly

responsible for their own success and events that occur in their lives. They also had high achievement motive, a quality that is also often traditionally considered as national trait in Finnish culture.

Lastly, authoritative parenting appeared to be widely used child-rearing method amongst the parents of the respondents. The research does not take a side on whether this would occur on a national scale in general, which would leave an interesting topic for further research in pedagogical field.

5.5. Key barriers for academic entrepreneurship

The key barriers that occurred amongst all the respondents were mostly related to political environment, acquiring funding and prevailing general attitude towards entrepreneurship. Most of the respondents saw company taxation too high in Finland and negative attitude regarding to this factor appeared even stronger amongst students and graduates, who had been studying entrepreneurship. The same phenomena could be noticed with recruitment policies, in where the respondents saw, that employers had too little power for decision-making regarding to hiring and redundancy policies. According to the questionnaire's statistics, the respondents believed that acquiring company loan without setting guarantees for the loan was relatively easy, but instead had a negative image of possibilities to acquire capita with an innovative, but risky business plan. In general level the respondents also saw that Finnish culture concerns risk-taking that is associated with entrepreneurship in a negative way. Negative point of view appeared also regarding to the question, whether the culture encourages for being creative and innovative. This points out that there is a wide misconception amongst the academics, as risk-taking that is related to entrepreneurship is widely accepted in Finnish culture.

All the respondents appeared to avoid risk to a large extent. This might be linked to uncertainty avoidance, in which Finland ranks above the average (Geert Hofstede, 2016a). In addition, Finnish academic were highly agreeable, which in this context, is not counted as beneficial. Regarding to theory, low agreeableness is relatively strong predictor of entrepreneurial intentions and therefore this personality trait should attempted to be altered amongst the academics.

When compared to entrepreneurs, such personal traits as innovativeness, entrepreneurial self-efficacy and need for autonomy are acting as barriers for those, who have not yet considered entrepreneurship. Also the comparison revealed that non-entrepreneurs most likely have misconceptions of their families' attitude towards entrepreneurship as a career choice, they should be socially exposed more to entrepreneurship – either through their close acquaintances or entrepreneur role models found elsewhere. Also personal financial was correlating strongly with entrepreneurial willingness, even though the hypothesis could not be proven true with regression analysis, and therefore should be seen as considerable barrier for becoming an entrepreneur. Moreover, the question that was measuring prior work experience's effect on entrepreneurial intentions appeared to have stronger effect amongst entrepreneurs, but this might be partly due to possible item bias.

6. DISCUSSION AND CONCLUSIONS

This chapter answers the research questions of this study and therefore represents those factors that have the biggest impact on entrepreneurial intentions, as well as considers how the blocking factors for academic entrepreneurship could be altered. Thereafter theoretical contributions of means, that are based on theory and well-proven practices, of how academic entrepreneurship could be encouraged even more are being introduced. Moreover, the end of this chapter introduces the theoretical and managerial implications of this study.

6.1. Factors with the strongest effect on entrepreneurial intentions within Finnish academic concept

The data from all the responses pointed out that most of the barriers for academic entrepreneurship are caused by factors that are related to political environment. Majority of the respondents had strongly negative point of view about company taxation and the availability of residual incentives for entrepreneurs. In addition, acquiring equity capital with a risky, but innovative business idea was seen relatively hard to acquire, even though its availability is better in reality. Moreover, Finnish academics have slightly erroneous picture of prevailing cultural attitudes towards risk-taking that is

associated with entrepreneurship, as well as towards the encouragement of prevailing culture for being creative or innovative. In terms of personality traits, high risk aversion and agreeableness appeared to be statistically significant amongst all the respondents. Yet, these traits might not function as strong barriers for entrepreneurial intentions, as entrepreneurs are not seen more prone to take risks, but willing to accept the risks that come along with entrepreneurship. High risk avoidance is largely explainable by other negative factors that are related to political environment, which is explained more detailed later on in this chapter.

6.1.1. The difference between entrepreneurs and non-entrepreneurs

Factors that were significantly strong amongst entrepreneurs, but are acting as preventing entrepreneurial intentions for most of the other respondents, included some of the strongest personality traits that are predicting entrepreneurship. Entrepreneurs had significantly stronger entrepreneurial self-efficacy, meaning that they were confident of being capable of running their own venture successfully. In addition, they also had stronger need for autonomy, which can be partly explained due to the tendency of those holding this trait to end up with this career choice. This same phenomenon may also occur with innovativeness, as personalities with strong innovativeness skills are more likely to become entrepreneurs due to their possibly better ability to spot viable business opportunities. In addition, this trait aids them to run business more successfully by finding creative ways of coming up with creative solutions in different areas of entrepreneurship, such as marketing.

In addition, a factor that was preventing entrepreneurship appeared to be the satisfaction for personal financial situation. The item correlated with entrepreneurial intentions, but could not be tested in regression analysis. Yet, the higher level of satisfaction amongst the entrepreneurs regarding to their personal finance situation can be explained with different life situation than the other respondents might have currently. Also, the level of social exposure amongst the entrepreneurs differed significantly. In other words, the entrepreneurs were from families in where either both or the other one of the parents were entrepreneurs. This result was expected, as Scherer et al. (1989) pointed out, that social exposure to entrepreneurship through parents is one of the strongest factors for entrepreneurial intentions in the future. The effect of prior work experience and the belief of family acceptance towards

entrepreneurship as a career option was significantly stronger amongst the entrepreneurs. This is most likely caused due to entrepreneurs' chance to experience the positive effect of work experience in reality, as well as to find out their families' acceptance towards entrepreneurship, instead of basing their opinions on assumptions. In terms of family acceptance, more positive point of view is also explainable by the bigger share of entrepreneur parents.

6.1.2. Motivating factors amongst Finnish academics

The factors that were acting as motivators for entrepreneurial intentions amongst all the respondents mostly consisted of personality traits. Majority of the respondents saw themselves as extraverted and also socially competent. However, social competence had differences between examined respondent groups and appeared stronger amongst female respondents, when compared to male respondents. Also students and graduates, who had studied entrepreneurship or taken part in entrepreneurial activities, were more socially competent than the peer group. The respondents also appeared to be very conscientious and statistical significance regarding to this factor could be found between entrepreneurship students or graduates and the ones who had studied other major or minor subjects. Most of the respondents were also very achievement motivated and the studied groups of respondents did not differ significantly from each other in terms of this personality trait. Most of the respondents appeared to be open to experiences, whereas amongst women respondents this personality trait appeared significantly stronger than within male respondents. Finnish academics also appeared to have low neuroticism, which is seen as an advantage for promoting entrepreneurial intentions. Female respondents still indicated of being more neurotic compared to male respondents. According to the responses, almost all the respondents were raised at least partly by using child rearing methods that had features of authoritative parenting. There were no significant differences between the respondent groups in terms of authoritative parenting. Lastly, the attitude of prevailing culture was seen positive towards acquiring personal wealth through entrepreneurship and entrepreneurs were seen to have socially high status and thus, being respected.

What appeared from the responses is that the level of entrepreneurial education and the efficiency of knowledge transfer from public sector for the use of private industries did not seem to be clear for the respondents, as these questions were gaining mostly

average answers. Moreover, the same phenomenon could be seen with the question pattern that was charting the opinions about the availability of entrepreneurial support services. This points out that these support services must be promoted much more efficiently than they are promoted currently.

6.2. Recommended actions for overcoming the factors that are negatively affecting entrepreneurial intentions

As was previously mentioned, one of the strongest negative effect on entrepreneurial intentions was caused by prevailing political environment, meaning the effect of recruitment policies, lack of residual incentives and company taxation. These factors have indirect negative effect on individual's risk propensity. When an individual is making decisions regarding to his positioning on labor markets, he makes comparisons between different available options in order to find out, which possibilities can create the most benefits or well-being to him. There are multiple factors affecting to the total level of well-being, of which from the point of view of incentive effects, the most important aspects to consider are the amount of spare time and acquired compensation from the job. Therefore the bigger the amount of compensation and spare time is, the bigger is the amount of well-being. The equation is even more complicated, as comparison between entrepreneurship and paid employment is hard due to existing possibility of facing unexpected expenses that can be seen more as a rule than exception. Moreover, the person has to take entrepreneurial risk into consideration as well, as everything might not go as expected. (Holm, 2000)

This entrepreneurial risk can be measured by comparing the probabilities of succeeding and making a bankruptcy when running a venture. On the average, approximately half of the established businesses are still operating after five years. Yet, bankruptcy is not always the reason behind in closing down business, but the reason can be also based on voluntarily decision and therefore it can be estimated that approximately 35 percent of companies are making a bankruptcy within five years' time span. (Holm, 2000) As a result, the invested equity is lost, often even more, such as investments done to the company and debt-based capital that is often borrowed from close acquaintances, such as family members or relatives or borrowed by setting collaterals for the loan. Moreover, often entrepreneurs that have made a bankruptcy

once can get a stigma of it in terms of acquiring debt-based capital, making the failure in business even more bearable. Yet, it should be taken into consideration that according to researches, entrepreneurs are usually more successful on their second attempt to run a business, remain in operation longer, grow faster and employ more employees. (Euroopan Komissio, 2013) In addition to other factors affecting risk propensity, this already has a significant effect on decision-making progress, in where the relations to close acquaintances and the possibility of losing set collaterals have to be considered and therefore resulting in a situation in where return on invested capital has to be significantly higher than the return from lost spare time in waged employment. A suggestion for this from the European Commission would be to shorten the time for granting discharge for honest entrepreneurs to maximum of three years (Euroopan Komissio, 2013).

The factor that measures the amount of additional revenues that an entrepreneur has to acquire in comparison to waged employment, is named in Finnish literature “the threshold wage” (Holm, 2000). The additional revenues to be on the same level with paid employee position – if the job position is assumed to be totally riskless – are formed due to many factors. In order to be able to calculate revenues, that would provide entrepreneur the same amount of income in a longer time span, the probability of approximately 35 percent of making a bankruptcy within 5 first years has to be taken into consideration, as well as different type of taxation for entrepreneurs than for waged work. If the business run is small-scale, as it often tends to do, the taxation on capital income is much higher in relation to earned income taxation, unless certain level of revenues are being reached. Moreover, unemployment benefits are not as close to the ones received in terms of unemployment from waged employment position and also the capital invested in starting the business have to be taken into consideration. Therefore the additional revenues needed to get to same level with waged employment can be even 50 percent more. (Holm, 2000)

In order to lower the barrier for entrepreneurship, these factors should be affected by different means. There are already some positive examples of supportive actions taken in order to lower the risk associated with becoming an entrepreneur. Previously mentioned start-up grant is one of these examples. This grant provides basic financial requirements for living while practicing business. The conditions for this grant are that the applicant must become a full-time entrepreneur and prove to have the necessary

preconditions for running the business. The grant, which is slightly over 30 euros per day, has to be applied before establishing the venture. (TE-palvelut, 2016) In the beginning of 2008, an experiment of providing innovation vouchers started and the main target group for these vouchers are small- and medium-sized enterprises. The vouchers are targeted for companies to buy expertise and services mostly from private sector, even though they can be used for example in buying services from universities as well. The obtained services can be used for getting assistance for commercialization processes, for focusing company strategy or strengthening research and development, as well as for internationalization. (Tredea, 2015) In September or October 2016, the innovation vouchers will be applied in real use, with a nominal value of 5000 euros (Tekes, 2016). These kind of supportive actions have positive effects on entrepreneurial intentions, as they lower the risk related to entrepreneurship, in this case by decreasing the amount of capital needed to invest in companies. In addition, the amendment to law, which comes into effect at the earliest in the beginning of 2017, reduces the risk of bankruptcy, as settlements for value added taxes are changing from accrual-basis to cash-basis (Kauppalehti, 2016). Thus guarantees that small business ventures are not forced to pay VATs before actually receiving payments. In addition to these measures, also the risk of recruitment will be lowered by supporting sole proprietorship entrepreneurs for hiring the first employee in monetary terms (Yrittäjät, 2016). This type of efforts increase the possibilities adjusting labor costs, when changes in demand appear in longer term and therefore decreases the risks for bankruptcy.

Even though supportive actions are already taken in order to reduce the risk level of entrepreneurship, more measures should be aimed to the very early beginning of entrepreneurship, as well as to the decision-making phase of career choices. Currently, one big obstacle in decision-making is the inequality of unemployment benefits for entrepreneurs and waged employment. According to a statement made about this issue, the best ways to increase residual incentives for entrepreneurship would be enhancing the unemployment benefits, improving debtors' position in case of bankruptcy and updating the legislation concerning distraint by setting a limitation period for debts (Holm, 2000). In case of unemployment benefits, one way to improve the situation could be that the amount of compensation would increase in relation to time that the company has existed before bankruptcy. This would equalize the amount

of benefits closer to waged employment, as currently unemployed employee gets higher benefits in the beginning of his unemployment in form of earnings-related unemployment allowance.

In terms of taxation, the legislation should be changed towards the direction in where for example paid profits for entrepreneurs would be taxed regarding to income tax rather than capital tax in case the paid profits would settle under 70,000 euros per year. This is partly already use in sole proprietorship, but could be applied to limited companies as well. As the percentage of capital tax in Finland is 30 percent up to 30,000 euros and 34 percent for the amount that exceeds this limit, a rough approximate of the average would be total of 32 percent of capital tax in this assumption. Again, progressive taxation for income is much lighter for smaller amounts of income. Whereas an example calculation on tax administration's income tax calculator points out, in where the situation of waged worker is assumed to be as simple as possible, points out that with annual earnings of 70,000 euros, the progressive taxation would be 32.5 percent. Therefore there is inequality between a waged employee and entrepreneur, until the profits exceed this limit. Adapting income taxation for smaller income would lower the required amount of profits for entrepreneurs to reach the threshold wage. A possible second suggestion related to taxation would be removing taxation from profits that are re-invested in the company, such as is done for example in Estonia. This would lower the risk for bankruptcy and increase capital available for improving and expanding the business. Yet, the author of this research does not see this very likely to happen in the near future.

According to Finnish Venture Capital Association (FCVA, 2015), the amount of invested equity-based capital in Finland is the second highest in relation to GDP after Sweden, when reviewed on few years' time span. This proves the assumption of difficulties in acquiring equity-based capital for innovative, but risky business ideas to be erroneous amongst Finnish academics. Noticeable is, that this assumption appeared to be prevailing even amongst the entrepreneurs that participated in the survey. Therefore the opportunities for this type of capital should be strongly promoted. Noticeable is, that in many countries there are actually venture capital companies set in close proximity of higher degree education institutions, whereas in Finland this course of action is not widely spread. Establishing offices that are either run by private venture capitalist companies or funded with public money would increase the

knowledge of equity-based funds' availability amongst the academics and as well most likely be beneficial to these companies as well. This aspect should be taken in to consideration in education as well, especially in entrepreneurship programs, in order to increase the knowledge on which type of criteria are used for evaluating a business idea in the progress for acquiring equity-based capital and what are the basic requirements for a company, before trying to seek this type of funding.

From the personality traits, high agreeableness and risk propensity were the only personality traits that appeared to be common amongst all the respondents. High agreeableness is relatively hard to be changed afterwards, but would need actions to be taken already in earlier stages of education, when the pupils would be put to competitive situations from time to time, in addition to cooperating with each other. Yet, it is a bit controversial, whether the benefits acquired from this would bring more benefits than disadvantages and as Zhao et al. (2010) claim in their study, this personality trait is not necessarily needed for high entrepreneurial intentions, but rather is seen as common quality amongst entrepreneurs.

Moreover, on general level Finnish academics had relatively strong negative point of view of the prevailing culture's acceptance towards risks associated with entrepreneurship, as well as its encouragement for being innovative and creative. These aspects should be studied even further, even though earlier researches have pointed out that the prevailing attitude is in fact positive. In case of innovativeness, introducing innovation vouchers can appear to be a good boost forward more positive attitudes, as this increases innovations done in small- and medium-sized enterprises as well and thus, it does not appear only in large enterprises so strongly. In addition, there would be a high need for more courses, which are built around designing a business idea, developing it and considering all the necessary aspects of running it in real life. This would boost not only the innovativeness, but also have the educational effect on changing the prevailing assumptions more positive. In terms of risk-taking attitudes, the earlier studies should be promoted more efficiently. Moreover, by executing the actions proposed above for improving risk avoidance would have already effect on this risk associated with entrepreneurship and therefore mean that becoming an entrepreneur would not be seen as such risky career choice in the first place. The educational strategy below also provides a solution for changing negative attitudes and the erroneous views of it.

6.2.1. Factors that are affecting negatively towards entrepreneurial intentions amongst non-entrepreneur academics

The personality traits that had statistically significant difference between the entrepreneurs and non-entrepreneurs in the survey results, were some of the strongest traits regarding to the theory, which have an effect on willingness to become an entrepreneur. Perhaps the most important difference was in the level of entrepreneurial self-efficacy, which is seen as the strongest predictor of entrepreneurial intentions (Pruett et al, 2009). The study by Chen et al. (1998) states that this trait consists of self-confidence in taking a risk, being innovative, performing well in terms of marketing, management and financial control. Previous studies claim that entrepreneurial self-efficacy could be altered in four different ways: mastering experiences, modeling challenging situations, by social persuasion and by enhancing physical status (Wood & Bandura, 1989; Pruett et al., 2009). Out of these, the lastly mentioned method is hard to have effect on, as enhancing physical status has to be initiated by individual's own decision. Even though the significance between the compared groups was not statistically significant in terms of entrepreneurial studies unlike the theories proposed, the methods for encouraging this trait should be included in study structures. From the author's own experience, different practices used for mastering the experiences have proven to be successful. If entrepreneurship majors and minors are not taken into account, Finnish higher educational system does not contain enough practice for various tasks of running a starting business venture. Often the attitude seems to be, that the skills taught are designed to be used in employee positions in existing companies, rather than for running own business. Therefore the education for entry level tasks should be taken part as compulsory studies and skills such as recognizing own customer segment, collecting and funneling leads and ways to convert them into paying customers should be promoted. Yet, a paying customer is the main condition for running a company successfully. Another mean proposed, modeling challenging situations, can be also included even stronger to educational programs. This can also be done by using entrepreneurs as encouraging examples. Therefore it would be interesting to see at least one entrepreneur as a visiting lecturer on every course from that specific field that the course is about. One interesting real life example was an entrepreneur in Estonia during a start-up company excursion, who had developed an application for rapidly sending medical reports from battle fields to hospitals in case of wounding, whereas the previous way was to write this report into a note book that was

held in the soldier's pocket and the information reached the hospital simultaneously when the patient arrived there. This particular entrepreneur was a professional soldier himself with no prior experience of running a business and therefore worked as excellent role model for those, who already were more skilled in terms of entrepreneurship and already motivated by it. As the positive social exposure caused by individuals' parents cannot be affected, taking positive role models as part of the education applies to this weakness as well. Moreover, family attitude is a factor that cannot be directly affected by any means, except trying to change prevailing attitudes and the proposition for this is included in the education strategy.

In terms of innovativeness, the personal trait that could also be seen as a weakness, the recommendations given above have an effect on this trait as well and therefore not repeated in this part. Need for autonomy again is harder to change afterwards, as well as individualism. In childhood, child-rearing style is proved to have a strong effect on need for autonomy (Schmitt-Rodermund, 2004) and as the ways of parenting cannot be really changed, as they are based on individuals' own decisions, actions should be started to promote the changes in this personality trait already in the beginning of primary education.

Most of the entrepreneurs that took part in the survey, had significantly more positive view on the effect of prior work experience to entrepreneurial intentions. Even though the question setting appeared to have a chance of being controversial on some level, its positive effect should not be ignored. As all the academic students cannot be employed for internships or summer job positions in start-up companies, it would be suggested to either practice these on theoretical level or adapting courses that are based on running a real business venture. This could be executed as forming a cooperative company that is operating on multiple fields, so that all the course participants could operate under the same company, making the expenses smaller for the study institution. Even easier option would be to execute the course by partnering with third party companies offering billing services, such as Ukko.fi or Eezy.fi, which would allow to run small-scale business without registering a company. This type of business can be practiced up to 10,000 euros of turnover, which is the set upper limit in 2016, before the VAT obligations come into effect and company ID is required (Verohallinto, 2016a).

6.3. Actions to be implemented for encouraging academic entrepreneurship

Recently the central labor market organization for academics, Akava, published the results of their survey regarding to their members' career choices. The survey pointed out that only eight percent of the interviewed young academics would prefer to become full-time entrepreneurs and thirteen percent would like to combine both, waged employment and part-time entrepreneurship. (Akava, 2016) In a survey conducted few years earlier by the same organization, 40 percent of the respondents had considered entrepreneurship as a career option after their graduation (Uralehti, 2012). The challenge therefore is to find ways of how to convert the academics who have considered entrepreneurship to preferring it as their primary career option. The same survey revealed that the fields of education had significant differences in their replies and the most eager students for becoming entrepreneurs were studying either business or engineering –related studies, whereas natural science students had significantly less interest in entrepreneurship. However, often the development of a scalable business needs a combination of various skills and therefore colliding different fields of education would be required, so that the skills for developing and commercializing could be combined. Suggested educational strategy gives further proposals on how to execute this.

6.3.1. Educational strategy

It has been studied that young people who have received entrepreneurial education are also more likely to set up their own business ventures. A research has pointed out that between 15-20 percent of participants of who are attending to upper secondary level entrepreneurial programs, establish their own companies. (Euroopan Komissio, 2013) Therefore the progress of entrepreneurial education must be started earlier than during higher degree education. The European Commission's proposition adds that entrepreneurial education is seen useful as well due to its decreasing effect towards establishment costs of businesses. From the point of view of spin-off companies, the Commission recommends supporting successful university-based companies' establishing mechanisms. Moreover, the successful models should be tried to be imitate in those cases that they appear to be applicable.

An interview with Professor Sarah Cooper from the University of Edinburgh Business School, which took place at Lappeenranta University of Technology on 8th of October 2015, revealed that the university has the biggest amount of start-ups and spin-offs in Scotland. Especially this interview was concentrating on how the university was able to encourage its students and researchers to become more entrepreneurial. Their efforts were especially concentrating on improving entrepreneurial self-efficacy and in order to reach this, the university used to publish a magazine series called “Local Heroes”, introducing local entrepreneurs with detailed biographies of their lives. The detailed narration creates a base for strong identification with these entrepreneurs. This type of publication is also suggested to be implemented to higher education institutions in Finland as well. It provides a cost effective way of introducing positive role models to academic students and researchers. Due to the nature of Finland’s low population, this type of magazine would not have to be localized for different regions, but the same publication could be easily spread to all higher education institutions, making it more cost effective. Moreover, Sarah added that not only the ones who read the magazines got exposed to positive role models, but the content spread around the university in form of word-to-mouth marketing as well, thus reaching even bigger population. Simultaneously, this type of publication would act as a way to rectify erroneous picture of cultural attitudes and improve the attitude towards more positive amongst those family members and other close acquaintances, who experience entrepreneurship as unsatisfactory career choice. This should be executed in a way, that the content of the publication would strongly express the economic and social importance of entrepreneurs in this society to overcome mistrust associated with entrepreneurship (Euroopan Komissio, 2013).

Nowadays, the approach is different, according to Sarah. After discontinuing publishing “Local heroes”, the university uses “bridging rooms” for the same purpose, in where entrepreneurs, students and researchers are able to meet each other and get the same positive influence. In addition to inviting industrial experts and entrepreneurs to share their experience and have a positive influence in this way, it would be interesting to see to the implementation of French *maillage* –program to Finnish context. Traditionally, this program is executed in a way that it pairs older and more experienced entrepreneurs or professionals with younger students, in order to create a business venture together – or in some cases – for the younger ones to take over the company,

when the senior partner wants to be retired (Europa.eu, 2007). Yet, retired senior entrepreneurs could also be used as mentors for newly established companies, providing valuable insight for the first steps of running a company successfully. Also, it should be noticed that valuable resources can be found also from closer proximity. Allowance in employment contracts for researchers to participate in start-up projects as co-founders with an option to return to the original position would bring the needed knowledge for these starting companies as well.

These type of rooms would be useful not only in terms of exposing to positive role models or mentoring, but as well in order to collide students of various study fields together. Moreover, combined with tighter industrial collaboration, this type of concept can be also used to create the needed ecosystem for potential entrepreneurs. As the European Commission states, lack of this type of ecosystem is likely to increase the amount of bankruptcies in form of failing in business and therefore the model should be also applied to national strategy (Euroopan Komissio, 2013).

As already proposed earlier, it would be beneficial to have equity-based funding available in close proximity of higher education institutions. The same approach is in use at the University of Edinburgh Business School as well. Likewise mentioned earlier, the existence of venture capital companies should be drastically increased close to universities or alternatively, the university should have tight collaboration with these companies. Sarah continues the existence of financial support for the start-ups, which might be executable in Finnish context as well and in prevailing situation of cost cuttings towards education institutions, it would be interesting to see, if *De minimis* - rule could be applied for acquiring this type of funding for the companies started at higher education institutions.

In educational programs, the approach to case studies that used on courses should be rather applied to real life even more increasingly by cooperating with companies that could provide cases for the courses about their own difficulties, rather than using old examples that have been already solved in real life. Entrepreneurship cannot and should not be applied strongly to all existing study fields, but recommendable would be to have at least one introductory course about the topic in all study fields. In addition to proposed actions in the last chapter, in addition to “the bridging room”, business incubators are recommended to be set in order for students to have a possibility to validate their business ideas under professional mentoring. In addition, they can be

used efficiently as a part of educational training. Many universities already have these incubators, but in smaller universities of applied sciences, this is too often the responsibility of student-run organizations. As personal financial situation was seen as a barrier for entrepreneurial intentions, one option to improve the effect caused by this factor would be offering incentives for trying out entrepreneurship at business incubators or universities in general. As the globalization increases, the need for large enterprises to centralize their operations at their core operating areas increases, this leads to them outsourcing certain functions and therefore the outsourcing progress supports the creation of small- and medium-sized enterprises (Holm, 2000). Therefore tighter collaboration with industries could provide opportunities to transfer business ideas from larger companies to universities, which would in other words mean that higher education institutions could promote the functions that large companies are willing to outsource as business opportunities. This would not only remove the problem of coming up with business ideas from a scratch, but it would also guarantee, that there is existing demand for these services. Moreover, as another way to provide incentives for academics to start their own business would be providing either free or substituted platforms for building online businesses. The establishment costs for online businesses are cheaper than the average costs for business establishment and therefore the threshold for becoming an entrepreneur much smaller (Euroopan Komissio, 2013). Therefore these tools would provide an easy start for those, who are not experienced in creating online platforms and also partly remove the negative effect of personal financial situation, as the capital invested would not play such a big role.

In order to assess the changes in terms of entrepreneurial measures at higher education institutions towards more entrepreneurial, HEInnovate tool could be applied in use. This self-evaluation tool that is designed for higher education institutions initiated in 2011 and is already applied in many universities, including the one located at Lappeenranta. The tool helps to assess the changes made in leadership and governance, organizational capacity – including funding, the level of entrepreneurial teaching, support services available for entrepreneurs, industry cooperation and the level of internationalization. (Heinnovate, 2016; Europa.eu, 2016)

6.3.2. National strategy

On a national level certain changes have to be done as well. As was mentioned previously, this study pointed out that the available support services are not well informed, as most of the responses were neutral regarding to this topic. Likewise Arenius and Autio (1999) mentioned, the problems regarding to provided support services tends to be, that they are currently too unstructured and compete with each other, either on purpose of due to intersecting services that they are providing. In order to success, starting companies need concrete and tailored expertise, so that they could be helped to develop competitive advantages and exploit the possibilities of internationalization – especially the benefits offered by European Union’s internal markets (Euroopan Komissio, 2013). By building complete supporting ecosystem that assists to network entrepreneurs together and bring the support services easily reachable, the structure of these services should be reconstructed. In addition, it should be ensured that the services provided are not the ones that are the easiest ones to arrange, such as seminars, but that there would be such services offered that could fulfill the need of more tailored assistance, which has been a requirement in Finnish SME -field.

In addition to these, the availability of equity capital should be increased even from its current relatively strong availability. Until the end of 2015, the tax administration of Finland had a two years long experiment in providing tax reliefs for natural persons - in this context business angels - who were making equity-based investments to small- and medium –sized companies between 10,000 to 150,000 euros. The conditions were that the company invested has to be small, meaning that it employed less than 50 employees and either its balance sheet or turnover had to be less than 10 million euros. Moreover, the company had to be less than six years old and in return for capital invested, the investor had to acquire less than 50 percent of the company’s shares and not get the majority voting rights in the company. The amount of tax deductions for investments made were 50 percent of the amount of invested capital. (Verohallinto, 2013) The biggest benefit of private investors is the expertise they can bring along to the companies they have invested in. Unlike venture capital companies, the individuals can usually concentrate their expertise more to the companies that they have invested in and often the motives behind the investments are not only based on financial returns, but as well to their personal interests towards the business and to desire to help the

entrepreneurs. As the European Commission states, seed-stage investors are playing a crucial part in successful ecosystem for entrepreneurs that increases the chances for companies to success, as in addition to the crucially needed capital they can provide, they also bring benefits from their own social networks that benefits the companies they have invested in (Euroopan Komissio, 2013). Therefore this experimentation that ended last year, should be continued and made permanent. The feedback from angel investors of this experiment revealed that the bureaucracy involved in order to receive the tax deductions was too complicated, leading to a situation in where many of them ended up not using this opportunity. The problems were seen in the requirements, which defined that the company could not be older than six years and the investors had to introduce a breakaway plan already at the point of investing. (Kauppalehti, 2015) The latter requirement seems odd in this case, as predicting the right timing for breakaway is hard, because all the company cases are unique. In addition, the tax deductions were only concerning income taxes (Kauppalehti, 2015). By also applying it to concern income taxation, it would be possible to get more investors – even those individuals that are not specialized in investing, but have savings they would like to invest. Moreover, the minimum level of investment in order to receive the deductions should be set lower to around three to five thousand euros.

An effective way of becoming an entrepreneur is to buy existing company as well. By this, the existing inventory, means of production and customer base already exists. Yet, currently the progress is complicated in both, selling the business to a third party or transferring it as inheritance. The biggest problems are occurring due to administrative and tax burden, lack of knowledge of the needed procedures and the time needed for completing the progress (Euroopan Komissio, 2013). Therefore in order to make this progress easier, the procedures should be simplified so that the transfer can be made in tolerable time, as well as the procedures made clear. In case of tax burden, there are three options to improve the situation: reductions in inheritance taxes or asset transfer taxes, or making it possible to divide the tax burden for a longer period of time and by this, making its yearly effect smaller.

Lastly, as stated by Arenius and Autio (1999), in most of the compared countries, including Finland, increasing women entrepreneurship would be the easiest way to increase the overall entrepreneurial activity. As the results of this study stated, female

academics do not see that they would be exposed to as many viable business opportunities as men. A way to improve this situation would be to modify the regulations that are concerning the industry fields in where women are mostly operating at. According to both, empirical researches and theoretical model calculation, becoming an entrepreneur is easiest on industries that do not necessarily require big capital investments, such as service industry (Holm, 2000) Female entrepreneurs in Finland have traditionally concentrated on this sector (Arenius & Autio, 1999) and therefore the biggest effect on women entrepreneurship would be by targeting the measures to service industry. Therefore, the division of value added tax should be reconsidered, as most of the services have the highest value added tax, 24 percent, excluding accommodation and physical training services (Verohallinto, 2016b). Such high taxation appears as a disadvantage in competition, as well as in form of increased grey economy. Moreover, possible tax deductions received from necessary acquisitions are often small compared to the size of business. Therefore, it is necessary to reduce the amount of value added tax to make this industry more competitive. (Stat.fi, 2005)

Another approach to this would be opening up increasingly the service industries that are currently provided by public services, such as health- and social services that are not heavily regulated. According to statistics, growing up the amount of female-owned businesses up to 40 percent, would be opening up these services for private industries. (Stat.fi, 2005) Therefore the effect would be significant, considering that currently the percentage is around thirty. Despite of high equality between the genders in Finnish society, females still tend to spend more time at home taking care of the household and also taking care of children. Even though the latterly mentioned concerns mostly graduates than current students, this setting could be improved by increasing the amount of individuals' household tax deductions. (Stat.fi, 2005) Moreover, by increasing the deductions, more demand would be created in service industry.

6.4. Theoretical implications

This study concentrated mostly on academic entrepreneurship that is occurring within higher degree institution students and graduates and as most of the existing theory is considering academic entrepreneurship from the point of view of commercialization of

research results or existing intellectual property rights of universities, the results of this study might not directly applicable to the traditional approach of this topic. As the hypotheses of this study pointed out, the existing hypotheses from existing literature cannot be successfully repeated in this context in all aspects. However, variance analysis pointed out that existing theories do apply in this study as well, for example in case of social exposure, which pointed out to be strongly linked with stronger personality traits, such as entrepreneurial self-efficacy.

In addition, this study pointed out that risk propensity does not differ between entrepreneurs and non-entrepreneurs. This goes along with the studies conducted by Huuskonen (1992) and Brockhaus (1982), who claimed that the only differentiating factor in this area would be entrepreneurs' readiness to accept the risk that is associated with entrepreneurship and ability to minimize the risk. Need for autonomy is said to be the subconscious reason for choosing entrepreneurship as career option. This theory could be repeated in this study as well, as entrepreneurs had this personality trait significantly stronger than the rest of the respondents. Therefore it is assumed that the theory by Oosterbeek et al. (2010) is applicable in Finnish academic context as well. This same applies with entrepreneurship students, which had this personality trait much stronger than their peer group, as claimed in previous theory (Alstete, 2002).

The prevailing assumptions of biggest barriers for academic entrepreneurship in Finland appeared to be related to lack of residual incentives for entrepreneurs (Arenius & Autio, 1999). The effect on risk aversion is strong, explaining why these blocking factors appear together in Finnish context. Therefore, the combination of low entrepreneurial self-efficacy, risk avoidance, lack of residual incentives and taxation can be stated to be the biggest obstacles in Finnish academic entrepreneurship. Moreover, the negative effect of financial situation to entrepreneurial intentions could be pointed out in the correlation analysis, as was suggested in the research conducted by Pruett et al. (2009). The regression analysis pointed out that also family attitude has moderate effect on entrepreneurial intentions, as suggested by Tan (2001). In this study the effect was positive, but interesting would be to see, whether negative attitude would discourage entrepreneurship or play only a minor role in decision-making progress, as Krueger et al. (2000) state.

Again, achievement motive and internal locus of control were strong amongst all the respondents. This is surprising, as expected would be that entrepreneurship students would score higher in this trait (Frese, 1995). Therefore, this theory cannot be supported in this study. The same occurred with agreeableness. The majority of respondents had high agreeableness, whereas was expected that this would be a distinguishing trait between entrepreneurs and the rest of the respondents (Zhao & Seibert, 2006)

6.6. Limitations and future directions

As this study was conducted in Finnish contexts, the results are not applicable in international context, even though the supporting actions in order to increase entrepreneurial intentions can be used in other contexts as well. Even though the studied phenomenon of negative correlation between higher education and entrepreneurial intentions is unique and does not apply much elsewhere, improvements can be always made. Therefore similar study should be also implemented in other countries as well in order to find ways to strengthen academic entrepreneurship even more.

Also, this thesis concentrates on finding out the factors that are affecting academic entrepreneurship and giving theoretical suggestions on how to strengthen the factors that acting as barriers, as well as which type of means should be implemented in order to reach this aim. However, this study does not consider how these strategies could be implied in practice. Studying on how to implement the proposed practices in real life leaves a fruitful area for further studies. In addition, further research could be done on how the threat of unemployment affects to entrepreneurial intentions. This issue was mentioned several times in the part of the questionnaire, in where the respondents could leave open feedback on barriers towards entrepreneurial intentions that were not mentioned in the questionnaire. This factor has not been considered in this study other than from the point of view of entrepreneurs to find out whether they were pulled or pushed into entrepreneurship, as this factor for becoming an entrepreneur is caused by constraining situation and does not fit to the scope of research.

Moreover, it would be interesting to process the acquired data even further in following researches by using cluster analysis, in order to find out whether it could be possible

to spot underlying, specific entrepreneurial types of academics and the efforts to overcome the obstacles for entrepreneurship could be targeted at them. Lastly, the questionnaire set did not assess the effect of entrepreneurial studies to women's entrepreneurial intentions. Regarding to the theory, the effect of entrepreneurial studies to personality traits should be stronger for females than males, but finding this out would have required charting out before and after situations with female respondents that had taken entrepreneurial courses. As this research did not aim to find out this specific area, the questionnaire charted only the current situation of personality traits of women, who had studied entrepreneurship. As women entrepreneurship is relatively low in Finnish context and intensifying this would be an effective way to increase overall entrepreneurship, the phenomena should be studied more deeply in future researches.

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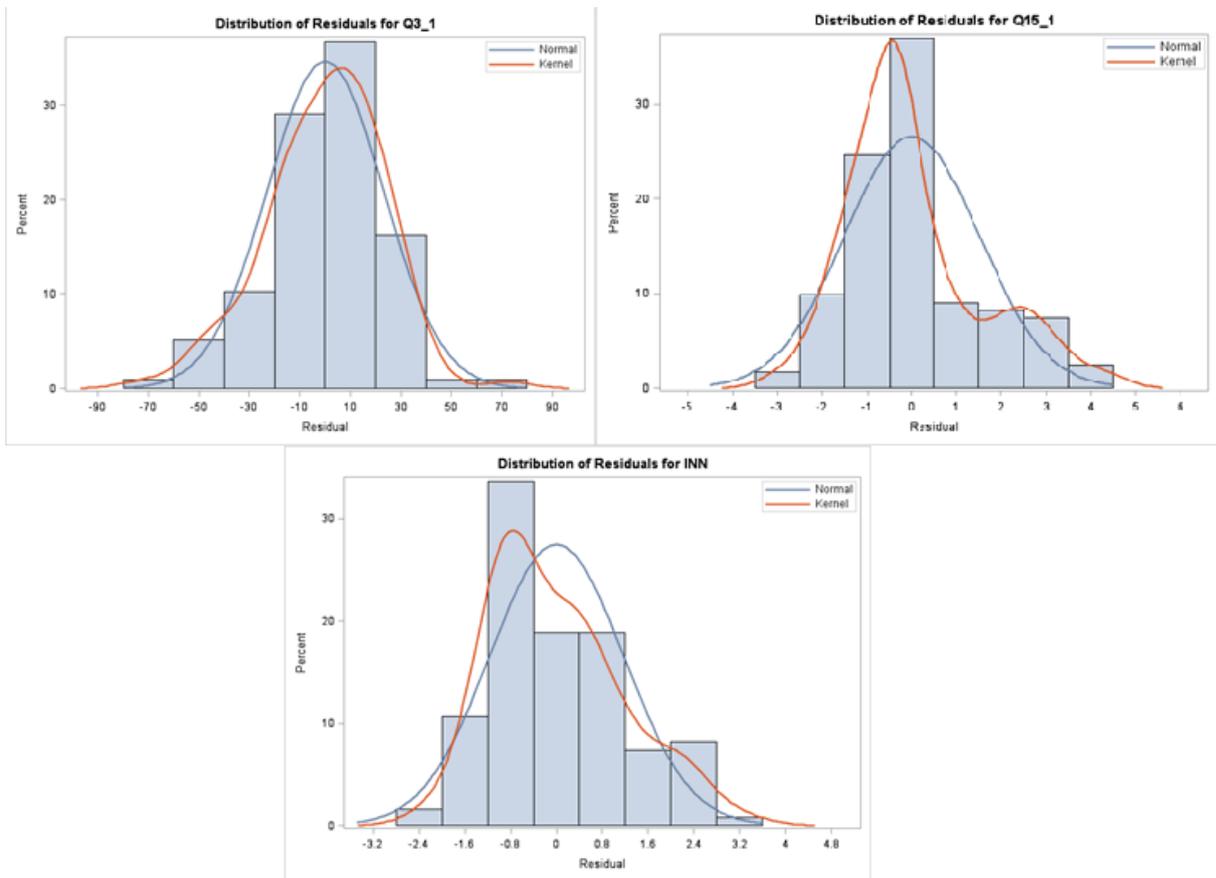
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APPENDICES

Appendix 1. Spearman correlation matrix

	Q3_1	SELF	Q15_1	INN	NEED
Q11_3	0.05274 0.5640				
Q23_1	0.19411 0.0344				
Q25_1	0.16349 0.0782	0.10457 0.2618			
Q25_2	0.13573 0.1445	0.15447 0.0963			
Q26_2	0.45622 <.0001				
Q35_1	-0.02879 0.7601				
SUPP	0.08311 0.3772				
ACH	0.06043 0.5085				
AUTH		0.00169 0.9856			-0.01110 0.9054
Q47_3				0.35377 <.0001	
EXT			0.20126 0.0262		
Q14_1			-0.11174 0.2205		
Q46_1			-0.13275 0.1449		

Appendix 2. Distributions of residuals



Appendix 3. Statistical significances, model scedasticities and coefficient of determinations

	Q3_1	INN	Q15_1
Pr > F	<.0001	<.0001	0.0009
Pr > ChiSq	0.8870	0.7686	<.0001
R ²	0.4586	0.1196	0.0886

Appendix 4. Content of the survey

No:	Question
1	Oletko tai oletko joskus ollut opiskelijana ammattikorkeakoulussa tai yliopistossa? Are you or have you been a student either in a university or university of applied sciences?
2	Oletko perustanut yrityksen joko yksin tai muiden kanssa korkeakouluopintojesi aikana tai valmistumisesi jälkeen? Have you established either alone or with other people during your higher degree studies or after graduating?
29_1	Kuinka monta vuotta on yrityksesi perustamisesta tätä kyselyä täytettäessä? Jos yrityksesi perustamisesta on yli 10 vuotta, vastaa vaihtoehto 10. How many years ago have you established your company to the date when you are responding to this survey? If you have established your company over 10 years ago, select option 10.
5	Sukupuoli Gender
6	Ikä Age
4	Mikä on tutkintoasteesi ja koulutusalasasi tämän hetkessä koulutuksessasi? Jos olet valmistunut, vastaa viimeisin opiskelemasi tutkinto. What is the diploma degree or the field of studies in your current education? If you have already graduated, select the latest degree you have studied.
7	Kuinka monta vuotta korkeakouluopintoja olet tähän mennessä suorittanut nykyistä koulutusta suorittaessasi? How many years of higher degree education you have accomplished to this day regarding to your current degree?
9	Opiskeletko pää- tai sivuaineenasi yrittäjyyttä tai oletko mukana yrittäjyysjärjestötoiminnassa (esim. korkeakoulusi Entrepreneurship Society)? Are you studying entrepreneurship as your major or minor subject or are you participating in the activities of an entrepreneur society/club (e.g. your higher degree education institution's Entrepreneurship Society?)
3_1	Liikuta kohdistinta vastaamaan tämänhetkistä yrittäjyysmotivaatiotasi. 0 = ei yhtään kannattava ajatus 100 = todella kannattava ajatus

	Move the cursor to correspond your current entrepreneurial intentions. 0 = not viable for me at all 100 = very viable for me
12_1	<p><i>Vastaa väittämiin vaihtoehdolla, joka on lähimpänä mielipidettäsi</i></p> <p>Työskentelen mieluummin työympäristössä, jossa ei ole valtavan suuria riskejä ja tiedän suurimmaksi osin, mitä minulta odotetaan</p> <p><i>Respond to the arguments in a way that is closest to your opinion</i></p> <p>I prefer to work in an environment where there are few risks required and I am certain of what is expected of me</p>
12_2	<p>Hankkiudun harvoin tilanteisiin, joissa voisin menettää jotain itselleni tärkeää</p> <p>I rarely put myself in positions in which I might lose something important to me</p>
12_3	<p>Pidän enemmän onnistumisen tunteesta kuin taloudellisen hyödyn tavoittelemisesta</p>
12_4	<p>Kun minusta tuntuu, että epäonnistumisen mahdollisuus on suuri, jätän mieluummin oman yritykseni perustamatta</p> <p>When I feel that the chance of failure is high I would not start my own business</p>
14_1	<p><i>Vastaa väittämiin vaihtoehdolla, joka on lähimpänä mielipidettäsi</i></p> <p>Pidän enemmän muiden kanssa yhteistyössä toimimisesta kuin kilpailemisesta heitä vastaan</p> <p><i>Respond to the arguments in a way that is closest to your opinion</i></p> <p>I would rather cooperate with others than compete with them</p>
14_2R	<p>Jotkut tuntemani ihmiset pitävät minua kylmänä ja laskelmoivana ihmisenä</p> <p>Some people think of me as cold and calculating</p>
14_3	<p>Uskon, että suurin osa ihmisistä ovat pohjimmiltaan hyväntahtoisia</p> <p>I believe that most people are basically well-intentioned</p>
14_4	<p>Olen mieluummin puhumatta itsestäni ja saavutuksistani</p> <p>I would rather not talk about myself and my achievements</p>
15_1	<p><i>Vastaa väittämiin vaihtoehdolla, joka on lähimpänä mielipidettäsi</i></p> <p>Näen itseni henkilönä, joka osaa ottaa rennosti ja hallitsee stressinsä hyvin</p>

	<p><i>Respond to the arguments in a way that is closest to your opinion</i></p> <p>I see myself as someone who is relaxed, handles stress well</p>
15_2R	<p>Näen itseni henkilönä, joka hermostuu helposti</p> <p>I see myself as someone who gets nervous easily</p>
15_3R	<p>Mielialani vaihtelee usein iloisesta surulliseen tai päinvastoin, tietämättäni syytä mistä se johtuu</p> <p>My mood often changes from happiness to sadness, or vice versa, without me knowing why</p>
48_1	<p><i>Vastaa väittämiin vaihtoehdolla, joka on lähimpänä mielipidettäsi</i></p> <p>Näen itseni ulospäinsuuntautuneena, puheliaana henkilönä</p> <p><i>Respond to the arguments in a way that is closest to your opinion</i></p> <p>I see myself as someone who is outgoing, talkative</p>
48_2	<p>Näen itseni täynnä energiaa olevana henkilönä</p> <p>I see myself as someone who is full of energy</p>
48_3	<p>Tunnen olevani itsevarma persoonallisuudeltani</p> <p>I see myself as someone who has an assertive personality</p>
11_1	<p><i>Vastaa väittämiin vaihtoehdolla, joka on lähimpänä mielipidettäsi</i></p> <p>Kun teen suunnitelmia, olen lähes varma siitä, että saan ne suoritetuksi</p> <p><i>Respond to the arguments in a way that is closest to your opinion</i></p> <p>When I make plans, I am almost certain that I can make them work</p>
11_2	<p>Ihmisten saaminen tekemään asiat haluamallani tavalla riippuu sosiaalisista kyvyistäni – onnella ei ole mitään tekemistä asian kanssa</p> <p>Getting people to do the right things depends upon ability; luck has nothing to do with it</p>
11_3	<p>Uskon itse olevani pääsääntöisesti vastuussa omasta menestyksestäni sekä tekemistäni virheistä</p> <p>I believe that I am primarily responsible for my own successes and failures</p>
49_1	<p><i>Vastaa väittämiin vaihtoehdolla, joka on lähimpänä mielipidettäsi</i></p> <p>Olen hyvä arvioimaan muita ihmisiä</p> <p><i>Respond to the arguments in a way that is closest to your opinion</i></p> <p>I'm a good judge of other people</p>

49_2	<p>Voin yleensä tunnistaa muiden luonteenpiirteet tarkasti heidän käytöstään tarkkailemalla</p> <p>I can usually recognize others' traits accurately by observing their behavior</p>
49_3	<p>Pystyn lukemaan muita ihmisiä hyvin – kertomaan, mitkä heidän tunteensa ovat kyseisessä tilanteessa</p> <p>I can usually read others well – tell how they are feeling in a given situation</p>
49_4	<p>Pystyn helposti sopeutumaan melkein mihin tahansa sosiaaliseen tilanteeseen</p> <p>I can easily adjust to being in just about any social situation</p>
49_5	<p>Ihmiset sanovat minulle, että olen herkkä ja ymmärtäväinen</p> <p>People tell me that I'm sensitive and understanding</p>
50_1	<p><i>Vastaa väittämiin vaihtoehdolla, joka on lähimpänä mielipidettäsi</i></p> <p>Minulla ei ole ongelmia esitellä itseäni tuntemattomille henkilöille</p> <p><i>Respond to the arguments in a way that is closest to your opinion</i></p> <p>I have no problems introducing myself to strangers</p>
50_2	<p>Olen erittäin herkkä vastaanottamaan kritiikkiä muilta ihmisiltä</p> <p>I am very sensitive to criticism from others</p>
50_3	<p>Olen usein huolissani siitä, mitä muut ihmiset minusta ajattelevat</p> <p>I am often concerned about what others think of me</p>
50_4	<p>Olen hyvä imartelussa ja osaan käyttää sitä hyödykseni</p> <p>I'm good at flattery and can use it to my own advantage when I wish</p>
50_5	<p>Pystyn uskottavasti esittämään pitäväni jostain ihmisestä, vaikka näin oikeasti olisikaan</p> <p>I can ready seem to like another person even if this is not so</p>
46_1	<p><i>Vastaa väittämiin vaihtoehdolla, joka on lähimpänä mielipidettäsi</i></p> <p>Ennen päätösten tekemistä mietin päätettävät asiat läpikotaisin läpi</p> <p><i>Respond to the arguments in a way that is closest to your opinion</i></p> <p>I think things through before coming to a decision</p>
46_2	<p>Pidän tavarani järjestyksessä ja siistinä</p>

	I keep my belongings neat and clean
46_3	Noudatan tiukasti eettisiä periaatteitani I adhere strictly to my ethical principles
47_1	<i>Vastaa väittämiin vaihtoehdolla, joka on lähimpänä mielipidettäsi</i> Minulla on todella aktiivinen mielikuvitus <i>Respond to the arguments in a way that is closest to your opinion</i> I have a very active imagination
47_2	Pidän abstrakteilla ideoilla ja teorioilla leikkimisestä mielessäni I often enjoy playing with theories or abstract ideas
47_3	Eri asioista kokemat tuntemukseni merkitsevät minulle paljon How I feel about things is important to me
13_1	<i>Vastaa väittämiin vaihtoehdolla, joka on lähimpänä mielipidettäsi</i> Yllätän ihmiset usein ainutlaatuisilla ideoillani <i>Respond to the arguments in a way that is closest to your opinion</i> I often surprise people with my novel ideas
13_2	Ihmiset kysyvät minulta usein neuvoja toteuttaakseen omaa luovaa toimintaansa People often ask me for help in creative activities
13_3	Pidän rutiininomaisten tehtävien sijasta enemmän työtehtävistä, jotka vaativat luovaa ajattelua I prefer work that requires original thinking over routine tasks
13_4R	En pidä itseäni kovinkaan innovatiivisena henkilönä I am not a very creative person
16_1	<i>Jos tarkoituksenesi olisi perustaa yritys, arvioi kuinka paljon luottaisit kykyihisi suoriutua seuraavista tehtävistä</i> Kuinka paljon luotat kykyysi kehittää uusi tuote tai palvelu? <i>If your purpose would be to establish a company, estimate how much you would rely on your skills to perform the following duties</i> How much confidence do you have in your ability to brainstorm (come up with) a new idea for a product or service?
16_2	Kuinka paljon luotat kykyysi suunnitella uusi tuote tai palvelu, joka tyydyttää asiakkaan tarpeen?

	How much confidence do you have in your ability to design a product or service that will satisfy customer's needs and wants?
16_3	Kuinka paljon luotat kykyysi arvioida kysynnän määrän uudelle tuotteelle tai palvelulle? How much confidence do you have in your ability to estimate customer demand for a new product or service?
16_4	Kuinka paljon luotat kykyysi arvioida tarvittava rahoituksen ja työpanoksen määrä uuden liiketoiminnan aloittamiselle? How much confidence do you have in your ability to estimate the amount of start-up funds and working capital necessary to start my business?
16_5	Kuinka paljon luotat kykyysi saada muut tunnistamaan ja uskomaan näkemykseesi ja suunnitelmaasi uudesta liiketoimintaideastasi? How much confidence do you have in your ability to get others to identify with and believe in my vision and plans for a new business?
16_6	Kuinka paljon luotat kykyysi verkostoitua – luoda uusia kontakteja ja jakaa tietoa heidän kanssaan? How much confidence do you have in your ability to network – i.e., make contact with and exchange information with others?
51_1	<i>Jos tarkoituksenesi olisi perustaa yritys, arvioi kuinka paljon luottaisit kykyihisi suoriutua seuraavista tehtävistä</i> Kuinka paljon luotat kykyysi delegoida tehtäviä ja vastualueita työntekijöillesi yrityksessäsi? <i>If your purpose would be to establish a company, estimate how much you would rely on your skills to perform the following duties</i> How much confidence do you have in your ability to delegate tasks and responsibilities to employees in your business?
51_2	Kuinka paljon luotat kykyysi käsitellä yrityksesi jokapäiväisiä ongelmia ja kriisitilanteita? How much confidence do you have in your ability to deal effectively with day-to-day problems and crises in your company?
51_3	Kuinka paljon luotat kykyysi inspiroida, rohkaista ja motivoida yrityksesi työntekijöitä? How much confidence do you have in your ability to inspire, encourage and motivate your employees?

51_4	<p>Kuinka paljon luotat kykyysi hallita yrityksesi rahoitustilannetta?</p> <p>How much confidence do you have in your ability to manage the financial assets of your business?</p>
17_1	<p><i>Kysymys mittaa yleisesti mielipidettäsi yritystoiminnan aloittamisen hyödyllisyydestä. Vastaa vaihtoehto, joka on lähimpänä mielipidettäsi väittämästä</i></p> <p>Yleisesti ottaen, liiketoiminnan aloittaminen on mielestäni hyödyllistä</p> <p><i>The question measures your general opinion about the usefulness of starting a business. Select the option that is closest to your opinion</i></p> <p>In general, starting a business is worthwhile</p>
17_2	<p>Yleisesti ottaen, liiketoiminnan aloittaminen on mielestäni positiivista</p> <p>In general, starting a business is positive</p>
18_1	<p><i>Kuinka tärkeitä seuraavat väittämät ovat sinulle?</i></p> <p>Omista työtavoitteista ja työskentelymetodeista päättäminen</p> <p><i>How important are the following arguments to you?</i></p> <p>Making your own decisions about work goals and methods</p>
18_2	<p>Henkilökohtainen vapaus</p> <p>Personal freedom</p>
18_3	<p>Oman ajan hallinta</p> <p>Regulating your own time</p>
18_4	<p>Täyden vastuun kantaminen tekemistäni päätöksistä ja niiden tuloksista tai seurauksista</p> <p>Having direct responsibility for decision and results</p>
18_5	<p>Mahdollisuus ilmaista työssäni omaa persoonallisuuttani ja luovuuttani</p> <p>Being able to express my own personality and creativity at my job</p>
19_1	<p><i>Vastaa väittämiin vaihtoehdolla, joka on lähimpänä mielipidettäsi</i></p> <p>Haluan mieluummin saada tarkat ohjeistukset työtehtäviini yleispätevän ohjeistuksen sijaan</p> <p><i>Respond to the arguments in a way that is closest to your opinion</i></p> <p>I prefer specific instructions to broad guidelines</p>
19_2	<p>Tunnen itseni stressaantuneeksi, jos en voi ennustaa tekemän asian seurauksia</p>

	I feel stressful when I cannot predict consequences
19_3	En pidä epäselvistä tilanteista I don't like ambiguous situations
20_1	<i>Vastaa väittämiin vaihtoehdolla, joka on lähimpänä mielipidettäsi</i> Tunnen suurta ylpeyttä kun suoritan minulle annetun tehtävän onnistuneesti loppuun asti <i>Respond to the arguments in a way that is closest to your opinion</i> I feel a great deal of pride when I complete a project successfully
20_2	Minulla on suuri halu saavuttaa onnistunut lopputulos tehtävissäni, vaikka se vaatisikin paljon ylimääräistä työtä I have a strong desire to achieve positive results even when it requires a great deal of additional effort
20_3	Pidän ongelmista ja tehtävistä, joita tehdessä voin oppia uusia asioita I like problems and tasks that I can learn from during performing them
22_1	<i>Vastaa väittämiin tavalla, jotka vastaavat näkemystäsi nykyisestä työtilanteestasi. Jos et ole töissä tällä hetkellä, valitse vastausvaihtoehto "Kysymys ei kosketa minua"</i> Mielestäni saan riittävän korvauksen tekemästani työstä <i>Respond to the arguments in a way that corresponds the most with your view of your current job. If you are not currently working, select the option "this question does not concern me"</i> I feel I am being paid a fair amount for the work I do
22_2R	Nykyinen työni tarjoaa liian vähän uralla etenemismahdollisuuksia There is really too little chance for promotion on my job
22_3R	Minusta tuntuu, että tekemääni työtä ei arvosteta tarpeeksi I do not feel that the work I do is appreciated
22_4	Pidän minulle osoitettujen työtehtävien suorittamisesta I like doing the things I do at work
22_5	Jokapäiväisiä tehtäviä hoitaessani tunnistan uusia ideoita (esim. uudet tuotteet, markkinamahdollisuudet tai työskentelytavat ympärilläni) While going about day-to-day activities, I see potential new ideas (e.g. on new products, new markets, and new ways of organizing firms) around me

23_1	<p><i>Vastaa väittämään tavalla, joka heijastaa tyytyväisyyttäsi nykyiseen taloudelliseen tilanteeseesi</i> Kuinka tyytyväinen olet kokonaisvaltaisesti nykyiseen taloudelliseen tilanteeseesi?</p> <p><i>Respond to the arguments in a way that corresponds the most with your view of your current financial situation</i> How satisfied are you with your overall current financial situation?</p>
25_1	<p><i>Kysymys yrittäjyydestä lähipiirissä</i> Molemmat vanhempani tai toinen vanhemmistani toimii tai on toiminut yrittäjänä</p> <p><i>A question about entrepreneurship within close acquaintances</i> Both of my parent or the other one of my parents is or has been an entrepreneur</p>
25_2	<p>Läheinen ystäväni tai sukulaiseni toimii tai on toiminut yrittäjänä</p> <p>My close friend or relative is or has been an entrepreneur</p>
26_1	<p><i>Vastaa väittämään vaihtoehdolla, joka on lähimpänä mielipidettäsi</i> Minulla on mielestäni hyvä ymmärrys siitä, kuinka yritystä tulisi johtaa</p> <p><i>Respond to the arguments in a way that is closest to your opinion</i> I have a good understanding on how to manage a business</p>
26_2	<p>Perheeni tukisi ajatustani ryhtyä yrittäjäksi</p> <p>My family would support my idea of becoming an entrepreneur</p>
28_1	<p><i>Nämä kysymykset tutkivat vanhempien kasvatustyylin vaikutusta yrittäjyyshalukkuuteen. Jos asuit molempien vanhempiesi kanssa, vastaa heidän molempien kasvatuksen näkökulmasta. Jos vanhempasi asuivat eri talouksissa, vastaa sen vanhemman mukaan, kumman luona vietit suurimman osan ajasta</i> Pystyin luottamaan siihen, että isäni tai äitini auttoi minua, jos minulla oli ongelma jota en osannut itse ratkaista</p> <p><i>These questions are examining the effect of certain child-rearing method to entrepreneurial intentions. If you lived with your both parents, respond from the perspective of their child-rearing. If your parents lived in different households, respond from the perspective of that parent you spent most of the time with</i> I was able to can count on my mother or father to help me out if I had some kind of problem</p>
28_2	<p>Kuinka usein teillä oli perheen yhteisiä aktiviteetteja?</p>

	How often did your family do something together?
28_3	Kuinka paljon vanhempasi tai toinen vanhemmistasi halusi tietää, missä menet iltaisin? How much did your parents or one of the parents wanted to know where you go at night?
28_4	Kuinka paljon vanhempasi tai toinen vanhemmistasi tiesi, mitä teet vapaa-ajallasi? How much your parents or one of the parents really knew what you do with your free time?
28_5	Kuinka usein vanhempasi tai toinen vanhemmistasi sanoivat sinulle, että he ovat oikeassa ja heidän mielipidettään ei pitäisi kyseenalaistaa? How often your parents or one of the parents did tell you that their ideas are correct and you should not question them?
31_1	<i>Vastaa väittämiin vaihtoehdolla, joka on lähimpänä mielipidettäsi. Sinun ei välttämättä tarvitse olla tietoinen kysyttävistä asiasisällöistä, vaan vastata voit joko tietämyksesi tai uskomustesi perusteella kysyttävään asiaan</i> Yritysverotus on mielestäni erittäin korkea Suomessa <i>Respond to the arguments in a way that is closest to your opinion. You don't necessarily have to be aware of the topic, but you can respond to the question either according to your knowledge or beliefs</i> Business taxes are very high in Finland in my opinion
31_2	Mielestäni yritysten täytyy Suomessa maksaa erittäin korkeita työnantajamaksuja (mm. eläkkeet, työterveydenhuolto) Business must pay the government very high employee benefit taxes in Finland (i.a. pension, occupational health services)
32_1	<i>Vastaa väittämiin vaihtoehdolla, joka on lähimpänä mielipidettäsi. Sinun ei välttämättä tarvitse olla tietoinen kysyttävistä asiasisällöistä, vaan vastata voit joko tietämyksesi tai uskomustesi perusteella kysyttävään asiaan</i> Kuinka helposti mielestäsi julkisella taholla on saatavilla tietoa yrittäjyyden aloittamisesta?
32_2	Kuinka helposti mielestäsi julkisella taholla on saatavilla tukea yrityksen perustamisen ensi vaiheisiin?
32_3	Kuinka helposti mielestäsi julkisella taholla on tarjolla lainopillista apua yrityksen perustamiseen liittyviin seikkoihin?
33_1	<i>Vastaa väittämiin vaihtoehdolla, joka on lähimpänä mielipidettäsi. Sinun ei välttämättä tarvitse olla tietoinen</i>

	<p><i>kysyttävistä asiasisällöistä, vaan vastata voit joko tietämyksesi tai uskomustesi perusteella kysyttävään asiaan</i></p> <p>Suomessa on mahdollista saada yrityslaina ainoastaan hyvän liiketoimintasuunnitelman avulla, ilman lainalle asetettavia vakuuksia</p> <p><i>Respond to the arguments in a way that is closest to your opinion. You don't necessarily have to be aware of the topic, but you can respond to the question either according to your knowledge or beliefs</i></p> <p>In Finland, it is possible to obtain a loan with only a good business plan and no collateral</p>
33_2	<p>Yrittäjien, joilla on innovatiivinen, mutta riskialtis liikeidea, on yleisesti helppo löytää rahoitusta idealleen Suomessa</p> <p>Entrepreneurs with innovative but risky projects can generally find venture capital in Finland</p>
34_1	<p><i>Vastaa väittämiin vaihtoehdolla, joka on lähimpänä mielipidettäsi. Sinun ei välttämättä tarvitse olla tietoinen kysyttävistä asiasisällöistä, vaan vastata voit joko tietämyksesi tai uskomustesi perusteella kysyttävään asiaan</i></p> <p>Rekrytointi- ja erottamiskäytännöt ovat enimmäkseen työnantajien määriteltävissä</p> <p><i>Respond to the arguments in a way that is closest to your opinion. You don't necessarily have to be aware of the topic, but you can respond to the question either according to your knowledge or beliefs</i></p> <p>Hiring and firing practices are determined by employers</p>
34_2	<p>Työlainsäädäntö sallii tarvittavan jouston työtunneissa, jotta yritys tarvittaessa pystyy vastaamaan kysynnässä tapahtuviin muutoksiin nopealla aikataululla</p> <p>Labor regulations facilitate the adjustment of working hours to meet unexpected changes in demand</p>
35_1	<p><i>Vastaa väittämiin vaihtoehdolla, joka on lähimpänä mielipidettäsi. Sinun ei välttämättä tarvitse olla tietoinen kysyttävistä asiasisällöistä, vaan vastata voit joko tietämyksesi tai uskomustesi perusteella kysyttävään asiaan</i></p> <p>Suomessa sosiaaliturva- ja hyvinvointijärjestelmät kannustavat oman yritystoiminnan aloittamiseen</p> <p><i>Respond to the arguments in a way that is closest to your opinion. You don't necessarily have to be aware of the topic, but you can respond to the question either according to your knowledge or beliefs</i></p> <p>In Finland, the social security and welfare systems provide appropriate encouragement for people to take the initiative and be self-sufficient</p>
35_2	<p>Suomessa ihmiset työskentelevät mieluummin vakaisissa yrityksissä kuin aloittavissa yrityksissä</p>

	In Finland, people prefer to work for well-established organizations rather than new firms
37_1	<p><i>Vastaa väittämiin vaihtoehdolla, joka on lähimpänä mielipidettäsi. Sinun ei välttämättä tarvitse olla tietoinen kysyttävistä asiasisällöistä, vaan vastata voit joko tietämyksesi tai uskomustesi perusteella kysyttävään asiaan</i></p> <p>Suomalaisen kulttuurin mukaan uuden liiketoiminnan aloittaminen on hyväksyttävä tapa tulla rikkaaksi</p> <p><i>Respond to the arguments in a way that is closest to your opinion. You don't necessarily have to be aware of the topic, but you can respond to the question either according to your knowledge or beliefs</i></p> <p>In Finland, the creation of new ventures is considered an appropriate way to become rich</p>
37_2	<p>Suomalainen kulttuuri suhtautuu positiivisesti yrittäjyyden riskinottoon</p> <p>In Finland, the national culture encourages entrepreneurial risk-taking</p>
37_3	<p>Suomalainen kulttuuri rohkaisee olemaan luova ja innovatiivinen</p> <p>In Finland, the national culture encourages creativity and innovativeness</p>
37_4	<p>Suomessa menestyneillä yrittäjillä nähdään olevan korkea status ja heitä arvostetaan</p> <p>In Finland, successful entrepreneurs have a high level of status and they are respected</p>
38_1	<p><i>Vastaa väittämiin vaihtoehdolla, joka on lähimpänä mielipidettäsi. Sinun ei välttämättä tarvitse olla tietoinen kysyttävistä asiasisällöistä, vaan vastata voit joko tietämyksesi tai uskomustesi perusteella kysyttävään asiaan</i></p> <p>Suomessa naisille tarjoutuu yhtä paljon otollisia tilaisuuksia ryhtyä yrittäjäksi kuin miehillekin</p> <p><i>Respond to the arguments in a way that is closest to your opinion. You don't necessarily have to be aware of the topic, but you can respond to the question either according to your knowledge or beliefs</i></p> <p>In Finland, women get exposed to as many good opportunities as men to start a new business</p>
39_1	<p><i>Vastaa väittämiin vaihtoehdolla, joka on lähimpänä mielipidettäsi. Sinun ei välttämättä tarvitse olla tietoinen kysyttävistä asiasisällöistä, vaan vastata voit joko tietämyksesi tai uskomustesi perusteella kysyttävään asiaan</i></p> <p>Suomessa ammattikorkeakoulut ja yliopistot tarjoavat riittävästi kursseja ja ohjelmia yrittäjyydestä</p>

	<p><i>Respond to the arguments in a way that is closest to your opinion. You don't necessarily have to be aware of the topic, but you can respond to the question either according to your knowledge or beliefs</i></p> <p>In Finland, universities of applied sciences and universities have enough courses and programs on entrepreneurship</p>
39_2	<p>Suomessa uusi teknologia, tiede ja muu tietämys kyetään tehokkaasti siirtämään yliopistoilta ja julkisilta tutkimuslaitoksilta yksityisen liiketoiminnan saataville</p> <p>In Finland, new technology, science and other knowledge is efficiently transferred from universities and public research centers to private industries</p>
43	<p>Vapaa sana: tuleeko sinulla mieleen muita asioita, jotka kohdallasi saattaisivat vaikuttaa yrittäjyyshalukkuuteen, mutta joita ei ole kyselyssä mainittu? Voit kirjoittaa alla olevaan ruutuun niin monta asiaa kuin mieleesi tulee</p> <p>Free speech: do some other factors come into your mind that might affect entrepreneurial intentions in your case, but have not been mentioned in this survey? You can write to the text box below as many things that come into your mind</p>

Appendix 5. Accepted sum variables' Cronbach Alphas

Sum variable	Raw, standardized	Sum variable	Raw, standardized
Extraversion EXT	0.858388 0.859373	Need for autonomy NEED	0.728956 0.765149
Innovativeness INN	0.830720 0.832418	Individualism IND	0.715502 0.720631
Social competence SOC	0.882614 0.888528	Achievement motive ACH	0.716742 0.717971
Self-efficacy SELF	0.816258 0.813545	Authoritative parenting AUTH	0.760136 0.767995
Self-confidence SELFC	0.783032 0.780119	Support services SUPP	0.824688 0.824210
Risk propensity RISK	0.736288 0.741241	General attitude GENATT	0.796975 0.795614
Pull factors PULL	0.687858 0.779816	Push factors PUSH	0.687858 0.691867

Appendix 6. List of factors, descriptive items and single-items based on theory

Variable	Factor	Item
Personality traits	Locus of control	11_1 11_2 11_3
	Achievement motive	20_1 20_2 20_3
	Risk propensity	12_1 12_2 12_3 12_4
	Self-efficacy	16_1 16_2 16_3 16_4 16_5 16_6 17_1 17_2 51_1 51_2 51_3 51_4
	Agreeableness	14_1 14_2R 14_3 14_4
	Openness to experience	47_1 47_2 47_3
	Conscientiousness	46_1 46_2 46_3
	Innovativeness	13_1 13_2 13_3 13_4R
	Social competence	48_1 48_2 48_3 49_1 49_2 49_3 49_4 49_5 50_1 50_2 50_3 50_4

		50_5
	Individualism & need for autonomy	18_1 18_2 18_3 18_4 18_5
	Neuroticism	15_1 15_2R 15_3R
	Uncertainty avoidance	19_1 19_2 19_3
Social networks	Social exposure	25_1 25_2
	Prior experience	26_1
	Family attitude	26_2
	Authoritative parenting	28_1 28_2 28_3 28_4 28_5
Politics, taxation and labor unions	Taxation	31_1 31_2
	Support services	32_1 32_2 32_3
	Equity financing	33_1 33_2
	Recruitment risk	34_1 34_2
	Residual incentives	35_1 35_2
Cultural attitude towards entrepreneurship	General attitude	37_1 37_2 37_3 37_4
	Women entrepreneurship	38_1
Life situation	Age	6
	Push & pull factors	22_1 22_2 22_3 22_4 22_5
	Financial situation	23_1
The level of entrepreneurial education in Finland	Entrepreneurial education	39_1
	Links to industries	39_2

Appendix 7. List of examined factors, descriptive items and single-items

Variable	New factor	Items	Type
Personality traits	Extraversion	16_6 48_1 48_2 48_3 49_4 50_1 51_3	Sum variable
	Innovativeness	13_1 13_2 13_3 13_4R 47_1 47_2	Sum variable
	Social competence	49_1 49_2 49_3	Sum variable
	Self-efficacy	16_1 16_2 16_5	Sum variable
	Self-confidence	16_3 16_4 51_4	Sum variable
	Risk propensity	12_1 12_2 19_1 19_2 19_3	Sum variable
	Need for autonomy	18_1 18_2 18_3 18_5	Sum variable
	Individualism	17_1 17_2 18_4	Sum variable
	Neuroticism	15_1	Single-item
	Locus of control	11_3	Single-item
	Conscientiousness	46_1	Single-item
	Agreeableness	14_1	Single-item
	Achievement motive	20_1 20_3	Sum variable
	Openness to experience	47_3	Single-item
	Social networks	Social exposure	25_1
25_2			Single-item
Prior experience		26_1	Single-item
Family attitude		26_2	Single-item

	Authoritative parenting	28_1 28_2 28_3 28_4	Sum variable
Politics, taxation and labor unions	Taxation	31_1	Descriptive item
	Support services	32_1 32_2 32_3	Sum variable
	Equity financing	33_2	Descriptive item
	Recruitment risk	34_1	Descriptive item
	Residual incentives	35_1	Descriptive item
Cultural attitude towards entrepreneurship	General attitude	37_1 37_2 37_3 37_4	Sum variable
	Women entrepreneurship	38_1	Descriptive item
Life situation	Age	6	Descriptive item
	Push factors	22_2 22_3	Sum variable
	Pull factors	22_1 22_4 22_5	Sum variable
	Financial situation	23_1	Single-item
The level of entrepreneurial education in Finland	Entrepreneurial education	39_1	Descriptive item
	Links to industries	39_2	Descriptive item

Appendix 8. Parameter estimates, Q3_1

Variable	DF	Parameter estimate	Standard error	t Value	Pr > t	Standard estimate	Tolerance	Variance inflation
Intercept	1	104.29192	15.53146	6.71	<.0001	0		0
EXT	1	-2.13004	2.40893	-0.88	0.3786	-0.07549	0.69420	1.44050
IND	1	8.49697	2.78654	3.05	0.0029	0.25968	0.69766	1.43337
SELFC	1	1.34696	2.01257	0.67	0.5048	0.05442	0.76541	1.30649
RISK	1	-3.55732	2.20302	-1.61	0.1093	-0.13911	0.68179	1.46673
NEED	1	8.86086	3.31735	2.67	0.0087	0.22731	0.69868	1.43128
INN	1	0.12018	2.08730	0.06	0.9542	0.00482	0.72302	1.38309
SELF	1	4.92783	2.41820	2.04	0.0440	0.19110	0.57537	1.73803
Q26_1	1	3.99767	1.40068	2.85	0.0052	0.21736	0.87241	1.14625
Q23_1	1	1.49887	1.29230	1.16	0.2487	0.09203	0.80365	1.24433

Appendix 9. Analysis of variance results

Classifying variable: Q2		
Variable	Two-sided Pr < Z (Risk level 0.05)	Approx. mean score difference, %-points (If = NO)
EXT	0.6497	3.62
INN	0.0458	15.85
SOC	0.6422	3.67
SELF	0.0117	19.95
SELFC	0.1314	11.95
RISK	0.2635	(8.88)
NEED	0.0082	20.83
IND	0.0043	22.39
AUTH	0.6571	3.41
GENATT	0.6483	(3.43)
SUPP	0.0698	13.65
PUSH	0.5514	4.63
PULL	0.6990	3.01
Q25_1	0.0258	14.78
Q25_2	0.2815	5.70
Q26_1	0.0074	19.54
Q26_2	0.0168	17.45
Q15_1	0.3018	7.70
Q11_3	0.9315	0.63
Q47_3	0.2616	8.63
Q31_1	0.8483	1.43
Q33_2	0.1918	9.61
Q34_1	0.6443	(3.31)
Q35_1	0.5686	(4.14)
Q38_1	0.1344	10.99
Q6	<.0001	(36.12)
Q23_1	0.1610	(10.46)
Q39_1	0.9694	(0.31)
Q39_2	0.7070	(2.73)
Q46_1	0.9865	(0.15)
Q14_1	0.1981	9.58
Classifying variable: Q9		
Variable	Two-sided Pr < Z (Risk level 0.05)	Approx. mean score difference, %-points (If = NO)
EXT	0.0968	13.84
INN	0.0032	24.51
SOC	0.0137	20.35
SELF	0.1307	12.57
SELFC	0.5083	5.52
RISK	0.3202	(8.29)
NEED	0.0040	23.79
IND	0.0711	14.86
AUTH	0.2082	10.27
GENATT	0.0441	(16.08)
SUPP	0.0733	(14.39)
PUSH	0.3886	7.03
PULL	0.4034	6.81

Q25_1	0.6517	(3.22)
Q25_2	0.2008	7.23
Q26_1	0.0311	16.81
Q26_2	0.0568	14.86
Q15_1	0.9264	0.75
Q11_3	0.7182	(2.68)
Q47_3	0.1226	12.45
Q31_1	0.0022	24.09
Q33_2	0.1514	(11.27)
Q34_1	0.0359	(16.61)
Q35_1	0.0634	(14.33)
Q38_1	0.6596	(3.47)
Q6	0.1322	13.90
Q23_1	0.5582	(4.60)
Q39_1	0.9376	(0.64)
Q39_2	0.6424	(3.68)
Q46_1	0.0041	15.97
Q14_1	0.3702	7.01
Classifying variable: Q5		
Variable	Two-sided Pr < Z (Risk level 0.05)	Approx. mean score difference, %-points (If = Female)
EXT	0.4869	(4.47)
INN	0.3763	5.68
SOC	0.0227	(14.46)
SELF	0.0031	18.88
SELFC	0.3186	6.39
RISK	0.0338	(13.59)
NEED	0.4524	(4.79)
IND	0.0062	17.33
AUTH	0.0694	(11.37)
GENATT	0.2776	(6.74)
SUPP	0.1257	9.51
PUSH	0.9808	(0.17)
PULL	0.9744	0.21
Q25_1	0.3025	5.62
Q25_2	1.0000	0.01
Q26_1	0.0131	14.85
Q26_2	0.0246	13.46
Q15_1	0.0046	17.04
Q11_3	0.7243	2.02
Q47_3	0.0104	(15.86)
Q31_1	0.3718	(5.44)
Q33_2	0.5253	3.87
Q34_1	0.6660	(2.57)
Q35_1	0.5745	3.36
Q38_1	0.0035	17.77
Q6	0.3679	(6.43)
Q23_1	0.7142	(2.74)
Q39_1	0.3619	5.56
Q39_2	0.8808	(0.94)

Appendix 10. Parameter estimates, INN

Variable	DF	Parameter estimate	Standard error	t Value	Pr > t	95% Confidence Limits	
Intercept	1	2.30588	0.20274	11.37	<.0001	1.90447	2.70729
Q47_3	1	0.28585	0.07081	4.04	<.0001	0.14564	0.42605

Appendix 11. Parameter estimates, Q15_1

Variable	DF	Parameter estimate	Standard error	t Value	Pr > t	95% Confidence Limits	
Intercept	1	1.49572	0.36159	4.14	<.0001	0.77979	2.21165
Q47_3	1	0.42353	0.12398	3.42	0.0009	0.17806	0.66899