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The logo of Erasmus University, featuring the word "Erasmus" in a stylized, cursive script.

Risky Business: Risk Tolerance of Entrepreneurs in Europe

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Abstract

In this thesis, research is done on a micro- and macro-level, where first it is investigated how risk tolerance differs between wage workers, solo, and employer entrepreneurs. Second, on a macro-level it is tested how the relationship between risk tolerance and entrepreneurship is influenced by two regions in the European Union, and a country's uncertainty avoidance and economic development.

The model implemented is based on the GEM survey, the IMF dataset, and Hofstede's dimensions dataset by means of logistic regressions. All the variables retrieved from these three sources are from the years 2014 and 2015, around 100,000 observations were audited.

On a micro-level the main findings show the presence of a higher risk tolerance of both, solo and employer, entrepreneurs in comparison to wage workers. Over and above, between the two groups of entrepreneurs, employer entrepreneurs are generally found to administer any kind of risk in a more advanced way. Further is it the existence of a significant influence of economic and cultural indicators on the relationship between entrepreneurs and risk tolerance which has been found. No distinction could be made between Eastern and Western Europe as an insignificant relationship was ascertained regarding the difference in risk tolerance of entrepreneurs in these two regions. Therefore, it can be confirmed that young business entrepreneurs do take more risks than any other individual in the labour force. Crucial economic and cultural factors such as GDP per capita and uncertainty avoidance affect this risk tolerance, respectively in a positive and negative fashion. Hence, the findings from the model indicate that countries which have a high income per capita and/or a low uncertainty avoidance have entrepreneurs with a higher risk tolerance.

Keywords: risk tolerance, young business entrepreneur, solo entrepreneur, employer entrepreneur, Eastern Europe, Western Europe, GDP per capita, uncertainty avoidance, logistic regression, odds ratio.

Table of Content

<i>Abstract</i>	2
1. Introduction	5
2. Literature Review	9
2.1 Risk Tolerance	9
2.2 Entrepreneurship and Risk Tolerance	10
2.3 Risk Tolerance and Determinants on a Micro-Level (Solo vs. Employer)	13
2.4 Aggregate Level Differences	15
2.5 Risk Tolerance and Determinants on a Macro-Level (GDP per Capita vs. UAI)	17
3. Data & Methodology	21
3.1 Sampling Methodology	21
3.2 Research Sample	22
3.3 Variables	23
3.3.1 Dependent Variables	23
3.3.2 Independent Variables	24
3.3.3 Control Variables	26
3.4 Methodology	28
3.4.1 Regression Hypothesis 1	28
3.4.2 Regressions Hypothesis 2a and 2b	29
3.4.3 Regressions Hypothesis 3a and 3b	29
3.4.4 Regression Hypothesis 4	29
3.4.5 Regression Hypothesis 5	30
3.5 Descriptive Statistics	30
4. Empirical Results	36
4.1 Hypothesis 1	36
4.2 Hypothesis 2a and 2b	37
4.3 Hypothesis 3a and 3b	38
4.4 Hypothesis 4	39
4.5 Hypothesis 5	40
4.6 Robustness Check of Risk Tolerance with Positive Perceived Opportunities	40
5. Discussion	45
6. Conclusion and Limitations	49
7. Bibliography	53
8. Appendix	64
APPENDIX A	64
APPENDIX B	65
APPENDIX C	67

List of Tables

<i>Table 1</i>	<i>Research Sample Division Eastern and Western Europe</i>
<i>Table 2</i>	<i>Descriptive Statistics</i>
<i>Table 3</i>	<i>Country Variables and Percentages of Observations per Country</i>
<i>Table 4</i>	<i>Correlation Table</i>
<i>Table 5</i>	<i>Regression Model Hypotheses 1, 2a and 2b</i>
<i>Table 6</i>	<i>Regression Model Hypotheses 3a and 3b</i>
<i>Table 7</i>	<i>Regression Model Hypotheses 4 and 5</i>
<i>Table A.1</i>	<i>Definitions</i>
<i>Table B.1</i>	<i>Variable Description</i>
<i>Table C.1</i>	<i>Regression Models Hypotheses 1, 2a and 2b with Risk Tolerance with Positive Perceived Opportunities</i>
<i>Table C.2</i>	<i>Regression Models Hypotheses 3a and 3b with Risk Tolerance with Positive Perceived Opportunities</i>
<i>Table C.3</i>	<i>Regression Models Hypotheses 4 and 5 with Risk Tolerance with Positive Perceived Opportunities</i>

1. Introduction

“I hit big or I miss big. I like to live as big as I can”, words once spoken by baseball player Babe Ruth. Risks, both small and large, are taken on a daily basis by people in different situations. Caliendo, Fossen and Kritikos (2010) found that a highly important determinant of internal survival of a firm is risk tolerance. A certain level of risk tolerance is important in any occasion in order to have a realistic understanding of one’s own willingness and ability in different kinds of scenarios. Both entrepreneurs and employees take risks on a professional level on a regular basis. However, the extent of the risk has a larger impact on the entrepreneurial level (Martiarena, 2011). A level of risk tolerance which is too high or too low could lead to bankruptcy or a lack of innovation respectively. In other words, the performance of an entrepreneur depends on its risk tolerance. That is why it is important to study the determinants of risk tolerance. Over time risk tolerance has been a leading topic; since the early 1900s, when Knight studied the role of the entrepreneur in economic life, studies have mainly researched risk tolerance in combination with the two subjects, investment and entrepreneurship.

This thesis will research in-depth the link between risk tolerance and entrepreneurship on a micro- and macro-level, as entrepreneurship is a compelling mechanism for both economic and cultural development (Baumol, 2002; Osowska, 2016; Schumpeter, 1942; van Stel, Carree & Thurik, 2005; Wennekers & Thurik, 1999). The study considers several determinants which may influence the relation between risk tolerance and entrepreneurship in a positive or negative way. Firstly, on a micro-level; solo entrepreneurs, employer entrepreneurs and wagers are compared. Subsequently, on a macro-level a distinction is made between the two main regions in Europe, Eastern and Western Europe. Finally, one economic determinant, GDP per capita, and one cultural determinant, uncertainty avoidance index, will be investigated.

In this thesis it will be explained that the relation between risk tolerance and entrepreneurship may vary according to these dimensions, and the hypotheses that will emerge from the discussion will be tested through a logistic regression model.

In general risk tolerance is situational, when the risk taken depends on rules the process of dealing with it differs from when the consequences of this risk are less assessed. This distinction can be defined as the differentiation between risk, where it is assumed that the probabilities linked to possible outcomes are known, and uncertainty, prospects where the probabilities are not

assumed to be known (Tversky & Fox, 1995). The entrepreneurial path is a path marked by instability and uncertainty, though, it is impossible to start a venture without having to cope with these factors. Therefore, entrepreneurs need a high metabolism for risk. This study emphasises the effect of risk, more specifically risk tolerance.

Risk tolerance is a broad subject interpretable in different ways, in the past most studies have intuitively found a positive relationship between risk tolerance and entrepreneurs. As shortly mentioned before, the determinants of risk tolerance investigated in this thesis are micro- and macro-level factors. On a micro-level risk tolerance is defined as the attitude of an individual towards risks. A distinction is made between solo and employer entrepreneurs, because both groups of entrepreneurs manage risk tolerance in their business on a different level. Solo entrepreneurs may not be willing to take the risk of hiring employees or expanding as it brings more costs and responsibility along. Still, they may have higher risk tolerance levels than wage workers. Differently, employer entrepreneurs may be willing to take more risks by hiring employees and therefore increasing the chances to expand the firm.

On an aggregate level risk tolerance can be defined as the average risk tolerance of individuals in a country. The macro-level interpretation of risk tolerance appears to have both cultural and economic influences. On the one hand, from a cultural perspective this study refers to one of Hofstede's (1984) five cultural dimensions, namely, uncertainty avoidance. The uncertainty avoidance index deals with a society's tolerance for ambiguity, indicating to what extent a person feels comfortable in situations which are novel, unknown, unexpected or different from what they are used to (Hofstede, 1984). On the other hand, when referring to the economic perspective of risk tolerance, welfare is considered which is measured by GDP per capita and therefore states the wealth of a country. Several studies have been performed regarding risk tolerance over the years e.g. Knight (1921), Kihlstrom and Laffont (1979), and Caliendo et al. (2010), but they only partly answered the questions linking risk tolerance to entrepreneurship.

Corresponding to what is briefly mentioned above, risk tolerance differs between people due to cultural differences, upbringing, social setting, characteristics, thus it might as well differ between regions. The distinction which will be made between the two regions, Eastern and Western Europe, will provide a unique perspective to examine risk tolerance in an era of developing economic globalisation. Nowadays all countries included in both regions are European Union member states and are therefore covered by the same laws and restrictions. Nevertheless, historically there have been differences between both regions; Western Europe

has almost always known prosperity and economic growth in the last decades. Meanwhile many Eastern European countries used to be suppressed by the Soviet Union or at least have communistic influences in their regimes. The Communist Imprint theory assumes, to date, that communism is a uniform ideology and that the individuals imprinted by communism and the ones living in former communistic countries these days (i.e. individuals born after the communistic era) behave in a certain way (Banalieva, Puffer, McCarthy & Vaiman, 2018; Kriauciunas & Kale, 2006; Wyrwich, 2013). It is found that the European countries which used to be former communist member states deal with obstacles regarding lacking financial support, complex administrative procedures, and an unfavourable economic climate compared to other European countries (Grilo & Thurik, 2006). These three obstacles are believed to influence the entrepreneurship level in Eastern Europe.

As explained earlier, the primary purpose of this study is to contribute to existing theories regarding risk tolerance of entrepreneurs. In the past a lot of research has been conducted towards the general level differences of risk tolerance and entrepreneurship. As for now this study assesses the risk tolerance of young business entrepreneurs, both with and without employees, considering different dimensions of welfare and culture which impacts the risk tolerance in a different fashion in Europe.

The definition of risk tolerance is hard to generalise as many studies have used different terminology; this thesis, however, uses the indicator fear of failure as a reverse proxy for the definition of risk tolerance since this is the indicator used in the Global Entrepreneurship Monitor (GEM) survey. From these the following two research questions can be formulated:

How does risk tolerance differ between wage workers, solo, and employer entrepreneurs?

How is the relationship between risk tolerance and entrepreneurship influenced by: East vs. West Europe, and a country's uncertainty avoidance and economic development?

In order to obtain answers to these two questions, seven hypotheses are formed detailing the expected relationship between entrepreneurs and wage workers, GDP per capita, uncertainty avoidance, and Eastern and Western Europe.

The study uses data from the Global Entrepreneurship Monitor (GEM) survey from the years 2014 and 2015, International Monetary Fund (IMF) dataset from 2015 and the Hofstede dimension Uncertainty Avoidance Index for the 19 European countries considered in this study.

A logistic regression model will be implemented to develop regressions stating the results this study is aiming for in odds ratios.

This thesis starts with the following; chapter two provides insights into previously done research and sums up existing studies and outcomes regarding risk tolerance, entrepreneurs, and the other variables. The third chapter gives an overview of the used data, variables and finally the method used to conduct the study. In chapter four the results retrieved from the data in chapter three are presented along with a robustness check. These results are extensively discussed in chapter five and to round up a final conclusion is conducted and, ultimately all limitations are presented in chapter six.

2. Literature Review

This literature review gives a comprehensive overview of the determinants of risk tolerance of entrepreneurs both on an individual and an aggregate level. First, the importance of the main variable risk tolerance is amplified and considered for the standard partition between entrepreneurs and wage workers. Second, it is discussed how the variable entrepreneurship changed and developed over time. Third, the meaning of the variable nowadays is examined in-depth on a micro-level and a distinction is made between solo and employer entrepreneurs. Fourth, aggregate level differences are discussed regarding the interpretation of risk tolerance in Eastern and Western Europe. Last, the macro-level influences of GDP per capita and uncertainty avoidance are examined.

2.1 Risk Tolerance

The concept risk tolerance is widely spread and interpreted in different ways. Risk tolerance is also known as (the opposite of) risk aversion (Helms, 2003; Ray, 1994; Wagner & Sternberg, 2004). Research by Weber & Milliman (1997) showed that high risk aversion, which is the same as low risk tolerance, is expected to decrease the probability of becoming an entrepreneur. A measure of risk aversion regularly used is 'fear of failure', this empirical operationalisation was developed by the GEM. The survey question from the GEM measuring fear of failure is meant to capture the extent to which the possibility of failure discourages entrepreneurial activity (Hessels, Grilo, Thurik & van der Zwan, 2011). Measuring this variable is not new since numerous studies have used the variable, asserted from the GEM survey, to find a significant negative association between the empirical operationalisation fear of failure and entrepreneurship (De Clercq & Arenius, 2006; Köllinger & Minniti, 2006; Levie, 2007). The outcome from previously done research states that entrepreneurs are more risk tolerant than wage workers which is closely related to the vision of Frank Knight.

Knight (1921) stated entrepreneurship as "the system under which the confident and venturesome 'assume the risk' or 'insure' a specified income in return for an assignment of the actual results" (i.e. Profit). This statement made Knight one of the first ones to elucidate the link between entrepreneurship and risk. In his research Knight brought out financial incentives linked to the risk taken and the Knightian entrepreneurship theory putted the focus on

entrepreneurial judgement based on uncertainty (Andersson, 2017). Knight's interpretation has been the base for many other models. One of these models was developed by Kihlstrom and Laffont (1979). Their model described the trade-off for entrepreneurs between receiving all profits from a risky investment or a wage as an employee. Each individual needed to decide for him- or herself whether it was worth accepting the potential profit from a 'risk involved' activity or playing it safe and receive a fixed wage on a monthly base as an employee. Both Knight (1921), and Kihlstrom and Laffont (1979) modelled the entrepreneur as a risk bearer. However, other investigations like Macko and Tyszka (2009), who focused on psychological factors such as self-confidence and experience by measuring risk taking in skill-related situations, claimed that in terms of risk attitudes there is a negligible difference between entrepreneurs and wage workers in laboratory studies. This negligible difference is due to the positive relationship between self-confidence and risk taking in skill-related situations. However, in naturalistic-business risky situations they confirmed previously made conclusions, stating that entrepreneurs are more risk tolerant than wage workers. These results are in line with Palich and Bagdby (1995), stating that entrepreneurs tend to be unaware of the risks, i.e. in terms of their entrepreneurial ventures they are risk tolerant.

More research has been done concerning the link between risk perception and entrepreneurship. In line with the laboratory focus of Macko and Tyszka (2009), on the psychological aspect of the relation between risk perception and entrepreneurship, Caliendo et al. (2010) argued an inverse U-shaped relation between risk attitude and entrepreneurial survival. The study confirmed that a person with a high or low risk attitude has a lower chance of perseverance as an entrepreneur compared to a person with a medium risk attitude. In the next section the term entrepreneurship will be discussed and reflected upon risk tolerance.

2.2 Entrepreneurship and Risk Tolerance

The concept entrepreneurship has always been interpreted in a broad sense since it is a general and easy definable concept, at least that is what one might think. In academic literature however entrepreneurship is still not broadly defined among researchers and practitioners. One of the first ones to touch upon the issues and concerns related to the debate about entrepreneurship as field of study was Gartner (1990), he researched the underlying meaning of the concept in order to characterise issues and concerns related to it.

Before the neoclassical era entrepreneurs were considered one of the main characters causing the turning point of economic development. Richard Cantillon, in 1755, already described an entrepreneur as a person willing to face and engage in risky business ventures. Furthermore, he believed that if you have a disposition to face risks you are an entrepreneur. Over the years more studies have been done regarding entrepreneurs and entrepreneurship. Adam Smith's (1776) *Wealth of Nations* stated that nations grow wealthy through changes in the division of labour. Smith regarded 'entrepreneur' as synonym for 'capitalist', which was often the case for classical English economists, although he failed to see that entrepreneurship was the base of his invisible hand-theory stating that free market, competition and incentives are the fertile soil for prosperity. Using Adam Smith's insight, "entrepreneurship can be defined as the study of human actions that lead to changes in the division of labour" (Michael, 2007). Through this definition a new meaning was given to the theoretical and empirical studies exploring the field of venture formation and economic growth.

This study was contradicted by Schumpeter's latest view, his *Capitalism, Socialism, and Democracy* (1942) stated that dynamic capitalism was executed to fail due to the fact that the efficiency of capitalistic enterprises would lead to a monopolistic structure in the economy resulting in the disappearance of the entrepreneur (Śledzik, 2013). In this case the entrepreneur would fulfil two different roles, the entrepreneurial role, and the role of the capital provider (van Praag, 1999). Schumpeter opted for a division of these two, with on the one hand the entrepreneur, who is the innovator, and on the other the risk-bearer, who provides capital.

Over time several definitions of entrepreneurship have been generated, in most of the definitions a crucial role was reserved for risk-taking behaviour. McCarthy (2000) found that risk taking is not only a personality trait shaped by nature or nurture, but it does expose learning in a business context. This utters the difference in experiencing risk between entrepreneurs and managers.

Overall, the points of view of different researchers, mentioned above, can be brought together in two dimensions (Sternberg & Wennekers, 2005). First, *occupational notion of entrepreneurship* refers to entrepreneurs owning and managing a business for their own account and thus taking full responsibility of the risks possibly coming along. Secondly, *behavioural notion of entrepreneurship* which states entrepreneurial behaviour in the sense of seizing an economic opportunity, which could also be intrapreneurial and is therefore less risky.

In this study an entrepreneur is identified as an individual who is self-employed and in charge of his or her own firm which is in line with the *occupational notion of entrepreneurship* stated above. The benefits and rewards entrepreneurs receive, from the organisation, depend directly on firm performance and success (Tomczyk, Lee & Winslow, 2012).

The above paragraphs gave an overview of the general development of entrepreneurship throughout time. Even though there has been a rich history regarding entrepreneurship these findings do not give a substantiated reasoning why entrepreneurship is of any economic and cultural value. Therefore, van Praag and Versloot (2007) have researched the contribution towards the economy of entrepreneurs compared to wage workers. Four measures were developed to help explain the importance of entrepreneurship in the economy in the present study. These measures are employment generation and dynamics, innovation, productivity and growth, and utility levels.

The general and historical overview focussed on the term entrepreneur primarily, however in this study attention is paid to young business entrepreneurs. Young business entrepreneurs are individuals owning a business no older than 42 months (GEM, n.d.). The focus lies on this group of entrepreneurs as new business owners are willing to take risks more easily out of necessity and in order to launch the new firm in the market (Khan & Manopichetwattana, 1989). Grilo and Thurik (2005) supported the findings stating that increased risk creates more opportunities for young firms and thus higher rates of entrepreneurship.

So far section 2.2 brought clarity on the importance of entrepreneurship and the willingness it takes to become an entrepreneur. Two of the main factors influencing a person's perseverance to become an entrepreneur is the risk willing to take and the procedure to deal with it. The risk an entrepreneur is willing to take is identifiable and measurable, in contrast to uncertainty which is not. Therefore, entrepreneurs have the possibility to respond to the risk with a plan which in many occasions they are able to develop in advance.

The different studies present distinct views on risk tolerance and entrepreneurship but almost all of them are convinced that there is a correlation between risk tolerance and entrepreneurship. However, aside from the majority of the studies confirming a positive link between risk tolerance and entrepreneurship, a few negative outcomes were found as well e.g. Macko and Tyszka (2009), and Caliendo et al. (2010). Therefore, the present study will try to retrieve an answer for itself regarding the difference in risk tolerance between entrepreneurs and wage

workers. As explained in the paragraph above, the outcome varies depending on which variables are considered in order to measure risk tolerance. From section 2.1 and section 2.2 the following hypothesis can be formulated:

Hypothesis 1: *Risk tolerance is higher for young business entrepreneurs than for wage workers*

Controlling the link between risk tolerance and entrepreneurs is not new, irrespective of that, it forms a good base for this study in order to confirm previous found results and to support the further analysis done in this thesis.

2.3 Risk Tolerance and Determinants on a Micro-Level (Solo vs. Employer)

Entrepreneurship is a wide known phenomenon which leads to recognition and has a clear presence at several levels of observation, such as the person or the firm, region or industry, and nation (Davidsson, 2004; Wennekers et al., 1999).

Within the group of young business entrepreneurs, a distinction is made between solo entrepreneurs and employer entrepreneurs. A solo entrepreneur is a professional who chooses to go into business without employees, often they form collaborations with others rather than hiring employees as this has several advantages i.e. no salary payment and no responsibility over a third party. An employer entrepreneur is a person running his/her firm and leading a team of employees active in this firm. Often, when not being an entrepreneur, individuals work at a firm in return for a monthly salary, this is the third group called wage workers. This group prefers to be on a payroll as it gives them social security which is not guaranteed as an entrepreneur who enjoys less generous benefits (Davies, 2013). When employees want to build up their own business the transition, from wage worker to entrepreneur, often starts by becoming a part-time solo entrepreneur (Petrova, 2018). These entrepreneurs are working at expanding their own business opportunity while holding on to a paid job in order to create a buffer for the risks taken. Hence, wage workers will spend less time in entrepreneurial businesses due to their lower risk tolerance (Douglas & Shepherd, 2002). Therefore, it can be expected that wage workers are less risk tolerant than solo entrepreneurs.

When an individual becomes a solo entrepreneur, several reasons could form the basis for this choice. First, entrepreneurs might be afraid to hire employees as it comes with extra costs and responsibility which lead to curtailment of their financial and creative freedom (Coad, Nielsen

& Timmermans, 2016; Pink, 2001). Along with a total cost increase of 135 percent to hire a first employee, there are also opportunity costs related to training the employee (Coad et al., 2016). Second, solo entrepreneurs face great uncertainties and risks as hiring employees creates a daunting possibility of confiding someone else with their 'creation' (Gartner, 1997). Therefore, solo entrepreneurs are expected to be one of the most risk-averse groups within the group of entrepreneurs.

Oposing the solo entrepreneur is the employer entrepreneur, as mentioned before, this group of entrepreneurs does hire employees and has the lead and responsibility over them. Research has shown that both types of entrepreneurship have advantages. Åstebro, Chen, and Thompson (2011) found that employer entrepreneurs earn significantly more than solo entrepreneurs as they can be more productive, considering the help of their employees. Furthermore, this difference in wages may be due to employer entrepreneurs' higher resistance towards risk as they have a higher risk tolerance level leading to higher chances to expand the firm and to taking more risky decisions. On the contrary, Sorgner, Fritsch and Kritikos (2014) found that solo entrepreneurs have higher hourly wages than employer entrepreneurs which may be devoted to the entrepreneur's own expertise being more expensive than the expertise of an employee would be. Further research generally shows that all entrepreneurs with better abilities hire immediately and survive longer, however this does not apply to solo entrepreneurs as they mainly prefer to first increase and stabilise sales before hiring their first employee (Coad et al., 2016). When considering risk tolerance, Caliendo, Fossen and Kritikos (2017) found that high levels of risk tolerance stimulate employer entrepreneurs more than solo entrepreneurs. Overall, risk tolerance dominates the arguments trying to make a distinction between solo and employer entrepreneurs in previously done research. Is it therefore possible to conclude that employer entrepreneurs are more risk tolerant?

The hypothesis below will research the relation between both solo entrepreneurs and wage workers and solo entrepreneurs and employer entrepreneurs.

Hypothesis 2a: *Risk tolerance of solo entrepreneurs compared to wage workers is higher*

Hypothesis 2b: *Risk tolerance of solo entrepreneurs compared to employer entrepreneurs is lower*

2.4 Aggregate Level Differences

Past studies have proven that entrepreneurial changes cannot always be generalised, they do not take place in all developed and developing economies, nor at the same degree or same time (Audretsch, Thurik, Verheul & Wennekers, 2002). The present study makes a distinction between Eastern and Western Europe; therefore, the focus of this section will be at the aggregate level. Western Europe is considered a developed region while Eastern Europe is categorised as a developing¹ region according to the IMF (2019). As reported by the classification of the World Bank (2011) the Eastern European countries do belong to high-income countries based on their GNI (nominal) per capita. However, all seven of them belong to the group of lowest high-income countries in the world and their GNI is closer to the average GNI of the upper-middle-income countries than to the average GNI of the high-income countries. Therefore, it is agreed upon in this study to categorise the Eastern European countries as developing.

It is generally known that the level of entrepreneurship differs enormously among countries or regions (van Stel, 2005). One of the reasons for these dissimilarities could be related to differences in economic development, demographics, culture and institutional organisation of these nations (Blanchflower, 2000; Wennekers, 2006). For instance, Giacomini, Janssen, Pruett, Shinnar, Llopis and Toney (2010) found that lacking fiscal and administrative costs, lack of support structure and knowledge are the most common barriers young business entrepreneurs deal with independent of the origin of the entrepreneur. However, the risk perception respecting these factors differs between regions, and more specifically countries.

In terms of the two regions, Eastern and Western Europe, a deviation can be made between developed and developing countries based on economic and historical factors. First of all, the majority of Eastern European countries have suffered to a lesser extent during World War II compared to Western Europe, and therefore did not relish from the financial aid retrieved for rebuilding under the Marshall Plan (Eichengreen, Uzan, Crafts & Hellwig, 1992). Furthermore, during the Cold War most of the Eastern European countries were Satellite States of the Soviet Union. This communistic influence of entrepreneurs on risk tolerance has been evident and is believed to lead to a lesser expression of entrepreneurial behaviour. Estrin and Mickiewicz

¹ Estonia, Slovakia, and Slovenia are these days also often considered graduated developed countries. In this study they are counted as developing since these changes have only been appended recently (IMF, n.d.).

(2011), and Freytag and Thurik (2006) showed this by stating that the entrepreneurial energy of former communist countries is lower since these nations are less used to entrepreneurial activities. Another factor leading to fewer entrepreneurs is the judgement of the population in former communist countries towards entrepreneurship. They believe that entrepreneurs' only focus is ensuring profits, without showing any concern towards their employees (Shane, 2014). In addition, it is presumed that entrepreneurs will exploit others' labour (Shane, 2014). Overall, communism has had an adverse impact on the Eastern European countries' economy due to these prejudices developed throughout history, unless if they had gradually opened up to capitalism like China did (Mearsheimer, 1990). Historically entrepreneurship is not promoted in hostile environments i.e. often transition countries, these countries are today still characterised by a lack of exploitable opportunities, level of corruption, limited supply of formal finance, and precarious industry settings (Covin & Slevin, 1989; Estrin & Mickiewicz, 2011).

Differences in history have formed the regions' culture and economy. While in Western Europe this has fostered entrepreneurial development in an upward trend it has not been conducive for the entrepreneurial activity in Eastern Europe. From the preceding paragraphs it can be questioned whether entrepreneurs in Eastern Europe a higher or lower risk tolerance have compared to entrepreneurs in Western Europe.

In general, research concerning entrepreneurial activity in developed regions has mainly been based on profit maximisation and value creation. In today's transition countries this used to be different, during the communistic era everything was centrally organised, and enterprises were all state-owned in the region. Following from this era were the inexistence of both social classes and incentives for personal development which could have had a negative impact on today's entrepreneurial urge and proactiveness of the Eastern European population (Kreiser, Marino, Dickson & Weaver, 2010). In their research Kreiser et al. (2010) concluded that culture impacts the proactiveness of small- and medium-sized enterprises (SMEs) and the fear of failure of entrepreneurs. Subsequently, van der Zwan, Verheul, and Thurik (2011) found that entrepreneurs in transition countries, in comparison to non-transition countries, have a lower risk tolerance. In line with these studies Estrin, Hanousek, Kočenda & Svejnar's (2009) initiated that stability and transparency of the institutional and political framework is needed in order to reduce the risk to enter entrepreneurship. These frameworks are found to be less secure in Eastern Europe. The combination of Eastern Europe's communistic past and the lacking

framework leads to the expectation that risk tolerance of solo and employer entrepreneurs is lower in this region.

On the contrary, Dyer and Panicheva Mortensen (2005) agreed that to become an entrepreneur in such an environment effort and courage is needed to be matched up to the financial instability, uncertain industry setting, and corruption. They believed that this leads to a natural selection which makes that entrepreneurs with high risk tolerance will have a higher survival rate.

Several factors were found to influence cross-country differences. Overall previous research has found that due to historical events Eastern European countries hold a negative attitude towards entrepreneurship. Further research has shown different perceptions of the effect of culture on entrepreneurs' risk tolerance. On the one hand, due to the economic and political instability and the to-date transition Eastern Europe is going through, as a result of its communistic past, it is expected that entrepreneurs have a lower risk tolerance. While on the other hand, it was found that entrepreneurs in transition countries have a higher perseverance and willpower as a result of historical changes. The first argument is more substantiated as it is based on contemporary and historical facts related to political, cultural and economic factors. Therefore, the two hypotheses expect that being from Eastern Europe weakens the direct positive relationship between, solo and employer, entrepreneurs and risk tolerance. This leads to the following hypotheses.

Hypothesis 3a: Risk tolerance of solo entrepreneurs in Eastern Europe is lower than in Western Europe

Hypothesis 3b: Risk tolerance of employer entrepreneurs in Eastern Europe is lower than in Western Europe

2.5 Risk Tolerance and Determinants on a Macro-Level (GDP per Capita vs. UAI)

The focus moves from personal factors, on a micro-level in section 2.3, towards environmental factors, as cultural, economic and technological variables on a macro-level (Grilo & Thurik, 2005; Hofstede, Noorderhaven, Wennekers, Thurik, Uhlaner & Wildeman, 2004). These have been broadly discussed in section 2.4 where a comparison was made between the two main

regions in Europe. However, in this section special attention is paid to the main economic and cultural factor.

The first variable the study focusses on is the economic variable GDP per capita. Eastern European countries are found to have lower GDP per capita in comparison to Western European countries. This study questions whether income per capita influences entrepreneurs and their risk tolerance. First it was found that there is a positive correlation between risk tolerance and GDP per capita (Bouchouicha & Vieider, 2019; Burton, 2015). Second, Bosma, Content, Sanders, and Stam (2018) connected entrepreneurship to economic development such as income per capita by stating that entrepreneurship stimulates to economic growth. Once more, it can be cited that the entrepreneurial mentality contains a risk-taking characteristic, as stated in section 2.1. Further studies have shown that risk tolerance and entrepreneurship are associated with income per capita (Cullen & Gordon, 2007). This outcome can be connected to the economic literature regarding the role of entrepreneurship mainly dominated by Schumpeter, Kirzner and Knight who fully dismantled the concept entrepreneurship in different stages and categories.

From the definitions of entrepreneur and entrepreneurship, given by the above-mentioned pioneers, it could be further argued that exploiting entrepreneurial activities is better in countries with a high GDP per capita. No further results were found stating the link between the three determinants at the same time. Therefore, a reasonable explanation for the expected positive correlation between the determinants could suggest the following; high income per capita countries consisting of a lot of financial privileged individuals with a stable income have more room to try to set up a business. Due to this financial buffer, these young business entrepreneurs often have their risk tolerance to create a business, which is higher compared to the buffer of less capital powerful entrepreneurs. Another reasoning could be related to economic growth (mainly measured in GDP per capita) which stimulates purchasing power and thus creates more opportunities for entrepreneurs to start a business. However, as stimulating as it might sound there is still a downside attached to becoming an entrepreneur in highly developed countries as the opportunity cost of social security and a fixed wage available for employees are highly present in high income (per capita) countries.

Nevertheless, the following hypothesis is based on the assumption that GDP per capita has a positive influence on risk tolerance and entrepreneurs.

Hypothesis 4: Higher GDP per capita of a country strengthens the direct positive relationship between entrepreneurs and risk tolerance

Based on past studies hypothesis four is established stating that higher GDP per capita positively influences the relation between the two main variables. According to Burton (2015) high GDP values are associated with low uncertainty avoidance values. This shows that next to economic influences there are cultural factors influencing entrepreneurship interpreted as a language, a variety of heritage as well as constraints of human behaviour both formal (laws and constitutions) and informal (conventions) (North, 1994). In the previous section, references are made to Kreiser et al. (2010) who found that culture impacts enterprises and willingness to take a risk which could indicate that uncertainty avoidance and power distance have a negative influence on risk tolerance. Nonetheless, these findings formed no exact unity about the influence of cultural differences on entrepreneurship and risk tolerance, so could it therefore be assumed that actual entrepreneurship is only based on hard economic factors such as labour market regulations, tax rates, GDP or unemployment rates (van Stel, Storey & Thurik, 2007)? A study by Wennekers et al. (2007) implied that an increase in opportunity costs of entrepreneurs are not of such an influence as expected in the cultural environment.

Cultural differences between the Eastern and Western region were partly explained by Hofstede's (1980) uncertainty avoidance dimension which captures differences in cultural attitude towards taking risks. In cultures with high uncertainty avoidance people look for structure in all kinds of situations, i.e. organisations or relationships, which results in a higher predictability, interpretability, and a lower willingness to take risks (Wennekers et al., 2007). This in contrast to low uncertainty avoidance cultures which accept all kinds of risks. i.e. familiar and unfamiliar, such as new jobs or unknown revolutionary inventions (Hofstede, 2001). Hofstede (1984) found similar results stating that cultures with high uncertainty avoidance concentrate on security and stability, when in fact low uncertainty avoidance cultures are more risk tolerant and demonstrate higher achievement motivation (Swierczek & Ha, 2003). In short, these studies have found a negative relationship between uncertainty avoidance and risk tolerance. In studies related to entrepreneurship it is mostly found that higher uncertainty avoidance leads to a lesser practicing of the entrepreneurial profession (McGrath, MacMillan & Scheinberg, 1992; Shane, 1993). Relevant for the risk tolerance of entrepreneurs, uncertainty avoidance influences the extent to which a person feels threatened by ambiguity as they prefer consistency, structure, and risk avoidance (Wennberg, Pathak & Autio, 2013; Wennekers, Thurik, van Stel & Noorderhaven, 2009). All these studies considered, the indirect effect stating that entrepreneurs in higher uncertainty avoidance countries may be less risk tolerant finds empirical support in the studies of Fitzsimmons and Douglas (2005) and Noorderhaven, Wennekers, Hofstede, Thurik and Wildeman (1999).

Based on these arguments, it is expected that entrepreneurs in countries with high uncertainty avoidance have a lower risk tolerance. Therefore, the fifth hypothesis is stated as follows;

Hypothesis 5: Higher uncertainty avoidance of a country weakens the direct positive relationship between entrepreneurs and risk tolerance

Overall from previous research, it can be concluded that entrepreneurship is a crucial mechanism for economic and cultural development (Baumol, 2002; Osowska, 2016; Schumpeter, 19; van Stel et al., 2005; Wennekers & Thurik, 1999). This literature review considered the risk tolerance of entrepreneurs and wage workers while making a distinction; first, based on the different types of young business entrepreneurs, namely solo and employer entrepreneurs, and wage workers. Second, a distinction is made based on the two main regions in Europe by considering the differences in risk tolerance of entrepreneurs in Eastern and Western Europe. Third, it took into account the effect of GDP per capita and uncertainty avoidance on the risk tolerance of young business entrepreneurs. All hypotheses are based on academic literature performed over the years. Several, sometimes opposing, points of view are gathered and taken into consideration in this study in order to find the differences in risk tolerance between different groups of entrepreneurs depending on various determinants.

3. Data & Methodology

The data used in this study is derived from three sources. The first data source is the Global Entrepreneurship Monitor (GEM), which is the world's foremost study of entrepreneurship. The GEM data is gained through surveys by local GEM researchers in the GEM 2014 and GEM 2015 questionnaire. These questionnaires take into consideration two elements, on the one hand the entrepreneurial behaviour and attitudes of individuals in different countries. On the other hand, the aggregate context and how that impacts entrepreneurship.

The second data source is the IMF which is an organisation fostering global monetary cooperation gathering statistics and analysis from its member countries. In general, the IMF reports numbers regarding economic indicators such as GDP and unemployment rate for certain countries. In this thesis the IMF dataset from the year 2015² is used.

The third and last data source is Hofstede's cultural dimensions theory which is a framework for cross-cultural communication. The framework describes the effects of a culture on the values of a country and its population and clarifies how they pertain to behaviour. In this study one of the six dimensions is used, called 'uncertainty avoidance'.

This chapter expands on the sampling methodology, the sample used, both the dependent and the independent variables used in the study, the methodology applied to measure the variables and the descriptive statistics.

3.1 Sampling Methodology

The first part of the data comes from a questionnaire which was set up by the GEM in the years 2014 and 2015 containing data from 60 countries spread over five continents. On average each dataset had around 150,000 responses distributed over these 60 countries. The GEM uses different distributions in a country by dividing each country into geographic areas and calculating the weights of each division separately. The main focus of the distribution is by a three-way table making a division between stratum, gender and age group.

The dataset containing the economic indicators retrieved from the IMF has data for 195 countries worldwide. The IMF uses random sampling to retrieve the necessary data, which means that each individual is chosen randomly and entirely by chance. Therefore, all

² Only one year is taken as GDP per capita barely changes over a period of two years.

individuals in a country have an equal probability of being chosen which in general leads to the most representative outcomes.

The dataset covering the dimension of Hofstede, uncertainty avoidance, has data on 21 European countries scoring all countries on a scale from 0 to 100.

3.2 Research Sample

For this study, only member states of the European union are considered. Of the 28³ members 19 countries were selected (see table 1 below) for which data was available (European Union, n.d.). These 19 countries have data present in the GEM questionnaire, the IMF dataset and Hofstede's index. From these countries, participating in the study, seven are Eastern European and the remaining twelve are Western European. This division is used for the comparison between both regions made in hypotheses 3a and 3b. The division, between Eastern and Western Europe, is based on the one made by the United Nations in 2019.

Throughout the study the distinction between the regions is not always applied; however, the data used will still only be for the countries mentioned in Table 1 below.

The study focuses, within the two regions, on people who are self-employed or wage workers. All other members of the adult population are excluded i.e. unemployed, retired people, students, and those taking care of family members or children. Furthermore, age, gender, education, family size and household income are taken into account in both Eastern and Western Europe, this will be explained further in the variable section of this chapter.

³ Brexit: For the time being, the United Kingdom remains a full member of the EU and rights and obligations continue to fully apply in and to the UK.

Table 1, Research Sample Division Eastern and Western Europe

EASTERN EUROPE	WESTERN EUROPE
Croatia	Belgium
Estonia	Finland
Hungary	Germany
Poland	Greece
Romania	Ireland
Slovakia	Italy
Slovenia	Luxembourg
	Netherlands
	Portugal
	Spain
	Sweden
	United Kingdom

Source. IMF (2019)

3.3 Variables

In this section an overview is given of all dependent, independent, and control variables used throughout the study. All variables are described and discussed below and in table B.1 (see appendix B).

3.3.1 Dependent Variables

The dependent variable used throughout the entire study is called risk tolerance. All seven hypotheses formed use this variable in order to obtain an answer. The dependent variable is retrieved from the GEM questionnaire and is stated as *fear of failure*. In the questionnaire a question was incorporated stating:

Would fear of failure prevent you from starting a business?

The respondents were able to answer ‘Yes’ which has value 1 or ‘No’ which has value 2 while the answers ‘Don’t know’ and ‘Refused’ respectively give value -1 and -2. Changes have been made in order to be able to make the outcomes more applicable in this study. The answers ‘Yes’

and 'No' were recoded, they respectively got value 1 and 0. Whereas, 4,754 observations were removed as no useful answers were provided for these observations with values -1 and -2.

These outcomes of the questionnaire used in this study show how each respondent, including wage workers and entrepreneurs, faces risks on a professional level. As fear of failure states the opposite of risk tolerance a reverse measure of fear of failure will be used in order to obtain the results of interest, i.e. $1 - \text{fear of failure}$.

3.3.2 Independent Variables

The first independent variable is *young business entrepreneurs* retrieved from the GEM questionnaire. The respondents were asked:

Do you manage and own a business that is up to 42 months old?

The respondents were able to answer 'Yes' with value 1 if they met the condition stated, and 'No' with value 2 if they did not. Again, as for *risk tolerance* the variables were recoded with value 1 for 'Yes' and value 0 for 'No'. This independent variable is the only one used in order to test hypothesis one;

Risk tolerance is higher for young business entrepreneurs than for wage workers.

The independent variable *young business entrepreneur* also presents part of the basis for hypotheses 2a, 2b, 3a and 3b. In these hypotheses this variable is specified more precise by splitting *young business entrepreneurs* into *solo entrepreneurs* and *employer entrepreneurs*. Respectively, the first variable indicates entrepreneurs without employees and the latter entrepreneurs with employees. The two variables were formed by combining the answers from two questions retrieved from the GEM questionnaire. The first question is mentioned above leading to the variable *young business entrepreneurs*. The second question was:

Current number of jobs?

Four categories were given, 'No job', '1-5 jobs', '6-19 jobs', and '20+ jobs'. If one indicated to have 'No job' and to be a *young business entrepreneur*, one was classified as *solo*

entrepreneur. The remainder of the group of *young business entrepreneurs* having at least '1-5 jobs' were categorised as *employer entrepreneurs*.

Hypotheses 2a and 2b which are based on these two questions state:

Risk tolerance of solo entrepreneurs compared to wage workers is higher.

Risk tolerance of solo entrepreneurs compared to employer entrepreneurs is lower.

Another independent variable makes a distinction between Eastern and Western Europe this variable will be called *Eastern Europe*. The region the variable refers to is used as an independent variable for the model, containing the Eastern European countries, mentioned in table 1 above, for value 1 and the Western European countries for value 0. Among other, the variable will function as a moderator together with the independent variables *solo* and *employer entrepreneur* in regression models 3a and 3b.

This variable is used in hypothesis 3a and 3b stating:

Risk tolerance of solo entrepreneurs in Eastern Europe is lower than in Western Europe.

Risk tolerance of employer entrepreneurs in Eastern Europe is lower than in Western Europe.

Next, the variable *GDP per capita* and *uncertainty avoidance* are used in hypothesis four and five respectively. These two variables have a moderating effect in the study. The variable *GDP per capita*, used in hypothesis four, is retrieved from the IMF dataset. The variable is continuous and refers to the total value of goods and services produced within a country during a specific period (quarterly or annually) (IMF, 2019). The variable *uncertainty avoidance*, used in hypothesis five, is retrieved from Hofstede's dimensions index stating the degree to which a person feels uncomfortable with ambiguity and uncertainty (Hofstede, 1984). The hypotheses are formulated as follow:

Higher GDP per capita of a country strengthens the direct positive relationship between entrepreneurs and risk tolerance.

Higher uncertainty avoidance of a country weakens the direct positive relationship between entrepreneurs and risk tolerance.

3.3.3 Control Variables

Besides the dependent and independent variables all seven regression models formed by the hypotheses contain control variables. The control variables included in this study should help overcome false relationships between the dependent and independent variables. The controls used in this study are summed up below and in table B.1 in the appendix along with an explanation elaborating on the importance of each of them in this study.

Gender is a dummy variable controlling whether the entrepreneur is male (1) or female (0), it is found that only six respondents in the entire sample refused to fill in their gender. Most entrepreneurs included in the GEM survey are male. Previous research has proven males to be more risk tolerant than females (Gustafsod, 1998; Sung & Hanna, 1996). Therefore, this variable is valuable to control for the effects of gender in the seven regression models.

Age is a continuous variable. All individuals from the age of 18 onwards are included in the sample, 647 observations were excluded as they are stating ages of minors (which are not considered in the dataset used for this study) or a part of the interviewees who refused to expose their age. Research by Block, Sandner and Spiegel (2015) found that younger people, younger than 42 years old, are more risk tolerant than older ones. This makes age a useful control in the regressions

*Age*², this variable states age as mentioned in the paragraph above, however in this control the square of it is taken. Age squared is added to test whether there is a non-linear relation between age and all other variables from the dataset. Which could mean that younger and older people are more risk tolerant compared to the middle-age group. Dohmen, Falk, Golsteyn, Huffman & Sunde (2018) found results which could confirm this allegation. They found that risk tolerance declines with age; however, after the age of 65 the slope becomes flatter and might even slightly rise again.

Number of household members is a continuous variable. The variable ranges between 1 and 90 members. 1,846 observations are left out as no answer was found or given. Number of

household members might influence the outcome of the hypotheses in this study as the smaller a household the larger the risk tolerance (Cohn, Lewellen, Lease & Schlarbaum, 1975; Hallahan, Faff & McKenzie, 2003; Jianakoplos and Bernasek, 2006). Thus, the control variable is added to all seven regression models

Level of education is a categorical variable divided in five separate categories, which measures the highest education each respondent of the survey has. The GEM dataset is missing 1,555 observations for this control variable. The five levels of education are ranked as follows:

1. No education (=0)
2. Some secondary education (=1)
3. Secondary degree (=2)
4. Post-secondary education (=3)
5. Graduate experience (=4)

The variable is included in the regression models as past research has found a direct link between education and both risk tolerance and entrepreneurship. The connection between entrepreneurship and education has been subject to many discussions over the past few years. Robinson and Sexton (1994) found in terms of success and being self-employed a strong positive influence of education on entrepreneurship. Similar outcomes were found for the relation between entrepreneurship and risk tolerance, the more educated an entrepreneur the higher their risk tolerance (Sung & Hanna, 1996). The variable will be used as a dummy variable with 'no education' forming the base outcome.

Household income is another categorical control variable used in the regression models. For this variable 31,726 observations are left out as these are missing in the GEM dataset. The influence of income can be interpreted in multiple ways, this is reflected in previously done research. Some argue that high income leads to higher risk tolerance as losses are more easily covered and able to make up for. Nonetheless, the opposite contains a truth as well, since one can argue that a lower income leads to higher risk tolerance as there is less in it to lose. However, lower income entrepreneurs might be more risk tolerant because it gives them the opportunity to earn money fast and easy. At last, a relationship between risk tolerance and household income can be confirmed through past research (Sjöberg, 2000). In the model this control variable will be used as a dummy variable in which the lower 33%tile forms the base outcome.

The three different groups are:

1. Lowest 33%tile (=0)
2. Middle 33% tile (=1)
3. Upper 33%tile (=2)

3.4 Methodology

In order to find the answer to the research question the different hypotheses are tested by running several regressions. For each of the regressions the same dependent variable is used namely, *risk tolerance*. The variable *risk tolerance* is a binary dependent variable which has two different possibilities as outcome, 1 if risk tolerant and 0 if not. In order to retrieve the outcomes a logistic regression model is used where standard errors are clustered by country. To simplify the interpretation of the outcomes this thesis looks at the odds ratio for the seven hypotheses. The odds ratio is the exponential of the logit coefficient which ranges from zero to positive infinity, when the odds ratio is greater than 1 it implies a positive relationship. But when the odds ratio is less than 1 it describes a negative relationship between the dependent and independent variable.

The remainder of this section discusses the regressions formed in order to successfully acquire outcomes for each hypothesis. The statistical results are discussed in the next chapter.

3.4.1 Regression Hypothesis 1

The first hypothesis of this study uses *risk tolerance* as dependent variable and *young business entrepreneur* as independent variable while allowing for six different control variables and the error term u .

Risk tolerance

$$\begin{aligned}
 &= \alpha + \beta_1 * YB \text{ entrepreneur} + \beta_2 * Gender + \beta_3 * Age + \beta_4 * Age^2 + \beta_5 \\
 &* \text{Number of Household Members} + \beta_6 * \text{Level of Education} + \beta_7 \\
 &* \text{Household Income} + u
 \end{aligned}$$

3.4.2 Regressions Hypothesis 2a and 2b

The following regression model also shows *risk tolerance* as dependent variable and makes a distinction between *solo entrepreneur* and *employer entrepreneur*.

Both hypotheses are formulated in one single regression model which includes the independent variable *solo entrepreneur* and *employer entrepreneur*. It compares *solo entrepreneur* to the base outcome wage worker and to *employer entrepreneur*. Like the regression model of hypothesis one, six control variables and error term u are present in this regression.

Risk tolerance

$$\begin{aligned} &= \alpha + \beta_1 * YB_{Solo} + \beta_2 * YB_{Employer} + \beta_3 * Gender + \beta_4 * Age + \beta_5 \\ &* Age^2 + \beta_6 * Number\ of\ Household\ Members + \beta_7 \\ &* Level\ of\ Education + \beta_8 * Household\ Income + u \end{aligned}$$

3.4.3 Regressions Hypothesis 3a and 3b

In the following regression model interaction terms are added as independent variable. This interaction term combines *Eastern Europe* and *young business entrepreneur*.

It looks at *solo entrepreneurs* and *employer entrepreneurs* in *Eastern Europe* compared to Western Europe, along with six control variables.

Risk tolerance

$$\begin{aligned} &= \alpha + \beta_1 * YB_{Solo} + \beta_2 * YB_{Employer} + \beta_3 * East + \beta_4 * YB_{Solo} * East \\ &+ \beta_5 * YB_{Employer} * East + \beta_6 * Gender + \beta_7 * Age + \beta_8 * Age^2 + \beta_9 \\ &* Number\ of\ Household\ Members + \beta_{10} * Level\ of\ Education + \beta_{11} \\ &* Household\ Income + u \end{aligned}$$

3.4.4 Regression Hypothesis 4

Regression model four includes, next to the dependent variable *risk tolerance* and the independent variable *young business entrepreneur*, the economic variable *GDP per capita*. This variable serves as moderator effect to examine whether it weakens or strengthens the effect of *young business entrepreneur* on *risk tolerance*.

Risk tolerance

$$\begin{aligned} &= \alpha + \beta_1 * YB \text{ Entrepreneur} + \beta_2 * YCAP + \beta_3 * YB \text{ Entrepreneur} \\ &* YCAP + \beta_4 * Gender + \beta_5 * Age + \beta_6 * Age^2 + \beta_7 \\ &* \text{Number of Household Members} + \beta_8 * \text{Level of Education} + \beta_9 \\ &* \text{Household Income} + u \end{aligned}$$

3.4.5 Regression Hypothesis 5

The regression model based on hypothesis five shows another moderator effect between *young business entrepreneur* and *uncertainty avoidance*. Along with the dependent variable *risk tolerance*, the main independent variable *young business entrepreneur*, and the six control variables.

Risk tolerance

$$\begin{aligned} &= \alpha + \beta_1 * YB \text{ Entrepreneur} + \beta_2 * UAI + \beta_3 * YB \text{ Entrepreneur} * UAI \\ &+ \beta_4 * Gender + \beta_5 * Age + \beta_6 * Age^2 + \beta_7 \\ &* \text{Number of Household Members} + \beta_8 * \text{Level of Education} + \beta_9 \\ &* \text{Household Income} + u \end{aligned}$$

3.5 Descriptive Statistics

In order to discuss the outcome of the regression models in chapter 4 a first look is taken at the descriptive variables used in the logistic regression models in table 2. Then, an overview of the frequency of the 19 countries and the two regions is presented along with the percentage values for the two main variables in table 3. Further the correlation matrix is shown, in table 4, pointing out highly correlated variables used in the regression models.

Table 2 below gives an overview of all variables used in the model and their values. For all variables 101,109 observations are ascertained. The mean outcome gives an overview of the division of each variable between the respondents, it shows that in the majority of the countries people are slightly more leaning towards being risk tolerant and that only a very small minority of the active labour force (3.03%) is a young business entrepreneur. On average 22.61% of the respondents are Eastern European. For the variable GDP per capita the minimum and maximum value are far apart, the mean in the table shows that the average GDP per capita in the sample

is around 32,000US\$ which is closer to the minimum value. The variable uncertainty avoidance has a minimum score of 29 and a maximum score of 112, the mean score is 72.26 which is closer to the maximum score. For both GDP per capita and uncertainty avoidance the natural logarithm is considered as well. In the case of GDP per capita the natural logarithm is taken because of the outliers which have been found. For uncertainty avoidance the logarithm is considered as it better reflects the results. Further does table 2 shows that there are more respondents who are male than female with an average age of 44 years old. The average family size consists of 3 members and the majority of the people have a secondary or post-secondary degree. Overall within the 19 countries it seems that income is around one third for each of the three income categories.

In table 3 the countries which are considered in this thesis are summed up, for every country the number of observations available in the sample is given. A few outliers are detected in the table e.g. Spain, United Kingdom and Sweden; however, the number of observations is not of great importance as the standard errors are clustered by country. These results are only taking into consideration to get an overview of the deviation of the variables risk tolerance and the occupation status, named young business entrepreneur, in each country and in both Eastern and Western Europe. According to the table, the dependent variable, risk tolerance, is the highest in respectively the United Kingdom (62.17%) and the Netherlands (61.28%). Greece tightens the crown of the lowest risk tolerance (30.76%) of all 19 European countries considered. Overall the difference in percentage between Eastern and Western Europe is very small (1.88%), with the first having an average risk tolerance of 49.61% and the latter one having a slightly higher risk tolerance of 51.49%. The main independent variable, young business entrepreneur, implies that in all 19 countries between one and five percent of the population owns and manages a business which is less than 42 months old. Romania has the highest percentage of young business entrepreneurs (5.08%) while Italy has the smallest (1.56%). In general, Eastern Europe has a larger percentage of entrepreneurs (3.55%) compared to Western Europe (2.79%). Therefore, from table 3 can be concluded that; first, Western European countries are more risk tolerant and, second, that Eastern Europe has more young business entrepreneurs.

The last table describing the variables is table 4 including the correlations between the different variables. For all variables around 100,000 observations were found from which the majority is significant at a 1% significance level.

First of all, risk tolerance is weakly correlated with all variables, and they are all significant at a 1% significance level. Further, column 1 shows that risk tolerance is positively weakly correlated with all variables stating entrepreneurship i.e. young business entrepreneurs, solo, and employer entrepreneurs. The independent variable, young business entrepreneurs, is strongly correlated with solo and employer. This strong relationship could be due to both variables showing a related outcome as both, solo and employer entrepreneurs, are part of the group of young business entrepreneurs. Additionally, GDP per capita (YCAP) is negatively related to the variable solo entrepreneur. On the contrary, the natural logarithm of GDP per capita ($\ln(YCAP)$) is positively correlated with the variable solo entrepreneur. Nothing can be derived from these correlations since no significance can be determined.

Furthermore, a moderate negative relationship is found between the dummy Eastern Europe and GDP per capita this might be because both variables affect each other, i.e. Eastern European countries have a lower GDP per capita. Between the variable uncertainty avoidance and GDP per capita a negative moderate relationship is found as well. The correlation might be consequence of the reciprocal link between the variables as measure for development and welfare. With respect to the control variables used in each regression model some correlations are found. For instance, household size and age have a weakly negative relationship significant at 1% significance level and the same goes for household size and age².

Table 2, Descriptive Statistics

Variable	Observation	Mean	Std. Dev.	Min	Max
<i>Risk tolerance</i>	101,151	0.5238801	0.4994319	0	1
<i>Young business entrepreneur</i>	101,151	0.0303012	0.1714157	0	1
<i>YB solo entrepreneur</i>	101,151	0.0117053	0.1075564	0	1
<i>YB employer entrepreneur</i>	101,151	0.0165495	0.1275766	0	1
<i>Eastern Europe</i>	101,151	0.2260976	0.4183052	0	1
<i>YCAP</i>	101,151	31978.19	17824.23	8950.463	101,665
<i>ln(YCAP)</i>	101,151	10.23557	0.5256635	9.099461	11.52944
<i>UAI</i>	101,151	72.26483	22.29111	29	112
<i>ln(UAI)</i>	101,151	4.218908	0.3754588	3.367296	4.718499
<i>Male</i>	101,151	0.5111368	0.4998784	0	1
<i>Age</i>	101,109	43.58352	13.5548	18	95
<i>Age2</i>	101,109	2083.254	1219.037	324	9025
<i>Number of household members</i>	101,151	3.021404	1.40725	1	85
Level of education					
<i>Some secondary education</i>	101,151	0.1738095	0.3789474	0	1
<i>Secondary degree</i>	101,151	0.3957845	0.489021	0	1
<i>Post-secondary education</i>	101,151	0.3154887	0.4647125	0	1
<i>Graduate experience</i>	101,151	0.0731975	0.2604617	0	1
Household income					
<i>Middle 33%tile</i>	101,151	0.3066406	0.4611011	0	1
<i>Upper 33%tile</i>	101,151	0.3571492	0.4791617	0	1

Table 3, Country Variables and Percentages of Observations per Country

Country	Frequency	Risk Tolerance	Young Business Entrepreneur
<i>Belgium</i>	3,273	48.82%	2.14%
<i>Croatia</i>	3,364	52.08%	2.44%
<i>Estonia</i>	3,613	47.41%	3.60%
<i>Finland</i>	3,520	57.05%	2.53%
<i>Germany</i>	6,363	52.44%	2.34%
<i>Greece</i>	3,410	30.76%	3.11%
<i>Hungary</i>	3,422	51.69%	3.19%
<i>Ireland</i>	3,241	57.73%	2.84%
<i>Italy</i>	3,145	37.07%	1.56%
<i>Luxembourg</i>	2,940	47.55%	2.69%
<i>Netherlands</i>	4,031	61.28%	3.55%
<i>Poland</i>	3,223	36.74%	3.88%
<i>Portugal</i>	2,669	51.14%	4.46%
<i>Romania</i>	3,249	48.45%	5.08%
<i>Slovakia</i>	3,281	52.97%	4.11%
<i>Slovenia</i>	2,703	57.90%	2.52%
<i>Spain</i>	31,821	53.49%	3.11%
<i>Sweden</i>	5,710	58.42%	2.31%
<i>United Kingdom</i>	8,131	62.17%	2.85%
Region			
<i>Eastern Europe</i>	22,855	49.61%	3.55%
<i>Western Europe</i>	78,254	51.49%	2.79%

Table 4, Correlation table

Pairwise correlations

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
(1) Risk tolerance	1.000														
(2) Young business entrepreneur	0.071 ***	1.000													
(3) YB solo entrepreneur	0.040 ***	0.616 ***	1.000												
(4) YB employer entrepreneur	0.055 ***	0.734 ***	-0.014 ***	1.000											
(5) Eastern Europe	-0.032 ***	0.017 ***	-0.020 ***	0.032 ***	1.000										
(6) YCAP	0.045 ***	-0.018 ***	-0.003 ***	-0.021 ***	-0.539 ***	1.000									
(7) ln(YCAP)	0.061 ***	-0.023 ***	0.004 ***	-0.031 ***	-0.727 ***	0.933 ***	1.000								
(8) UAI	-0.087 ***	0.011 ***	0.002 ***	0.014 ***	0.119 ***	-0.547 ***	-0.579 ***	1.000							
(9) ln(UAI)	-0.084 ***	0.010 ***	0.002 ***	0.013 ***	0.152 ***	-0.537 ***	-0.573 ***	0.986 ***	1.000						
(10) Male	0.095 ***	0.041 ***	0.019 ***	0.033 ***	-0.031 ***	0.004 ***	0.014 ***	0.012 ***	0.012 ***	1.000					
(11) Age	0.053 ***	-0.057 ***	-0.034 ***	-0.042 ***	-0.047 ***	0.065 ***	0.081 ***	-0.109 ***	-0.111 ***	-0.017 ***	1.000				
(12) Age2	0.063 ***	-0.061 ***	-0.037 ***	-0.045 ***	-0.045 ***	0.076 ***	0.093 ***	-0.140 ***	-0.144 ***	-0.015 ***	0.985 ***	1.000			
(13) Number of household members	-0.035 ***	0.019 ***	0.003 ***	0.020 ***	0.114 ***	-0.119 ***	-0.154 ***	0.132 ***	0.128 ***	-0.008 ***	-0.209 ***	-0.233 ***	1.000		
(14) Level of education	0.015 ***	0.046 ***	0.029 ***	0.033 ***	0.027 ***	0.058 ***	0.034 ***	-0.029 ***	-0.036 ***	-0.002 ***	-0.133 ***	-0.135 ***	0.001 ***	1.000	
(15) Household income	0.058 ***	0.052 ***	0.022 ***	0.046 ***	-0.032 ***	0.050 ***	0.063 ***	-0.072 ***	-0.060 ***	0.099 ***	-0.029 ***	-0.047 ***	0.152 ***	0.229 ***	1.000

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

All variables have $1.0e+05$ observations

4. Empirical Results

In this section the results from the regression models based on the seven hypotheses are discussed. Each of the seven hypotheses are examined individually in table 5, 6, and 7, considering the main variables and their effect along with the effects of the control variables which are also of importance in the model. At last, section 4.6 will focus on the robustness check which is performed (see tables appendix C).

4.1 Hypothesis 1

Hypothesis one tests whether the risk tolerance of young business entrepreneurs is higher compared to the risk tolerance of wage workers. Included in the group of young business entrepreneurs are all entrepreneurs with and without employees with a business less than 42 months old. Overall, 101,109 observations were available to run this test.

The dependent variable risk tolerance is measured by using the reverse outcome of the variable fear of failure, stating whether someone is prevented from starting a business due to their fear of failing. Column 1a in table 5 shows the outcome of the logistic regression model for hypothesis one with risk tolerance as dependent and young business entrepreneur as independent variable. Column 1b includes the odds ratio which will be the one interpreted in this empirical section.

Table 5 column 1b shows a positive significant coefficient for young business entrepreneurs at a 1% significance level. It can be noticed that the odds ratio is higher than 1 which describes a positive relationship. This positive relationship indicates that being an entrepreneur with a business less than 42 months old increases the odds of being risk tolerant by 2.423 times, *ceteris paribus*. Therefore, this outcome supports the hypothesis developed with the use of past research.

Furthermore, when considering the control variables used in the regression model for hypothesis one all of them are significant at a 1% significance level, except for the level of education which is insignificant at all time and the middle-class household income. Noticeable is the positive significant relation between risk tolerance and the control variable male. This outcome suggests that being a man increases the odds of being risk tolerant with 1.426 relative

to being a woman. Female counterparts are at lesser odds of being risk tolerant, as the odds would be 0.701 (1/1.426). This confirms the findings by Gustafsson (1998), and Sung and Hanna (1996) who found that men are more risk tolerant than women.

Another remarkable outcome is the negative significant relation of both age and number of household members with risk tolerance. A possible explanation could be that the older one becomes or the larger one's family becomes the more stability one aims for and thus the smaller one's risk tolerance. This confirms the results from previously done research about the link between household members and risk tolerance (Cohn et al., 1975; Hallahan et al., 2003; Jianakoplos and Bernasek, 2006). The results which were found in table 5 regarding age can be confirmed as Block et al. (2015) found similar results. However, the quadratic outcome of age shows a positive significant link with risk tolerance which means that for an increase in age² the odds of being risk tolerant increases by a factor of one. The difference between the decrease by factor 0.946 for age and the increase by factor one for age² could be due to the U-shape. The minimum value is found to lie at 40 years, which means that people at this age are the least risk tolerant. Throughout the different regression models of the hypotheses the control variable coefficients remain the same.

Once more, based on the findings hypothesis one will be accepted as it confirms the outcomes of previous done research.

4.2 Hypothesis 2a and 2b

Hypothesis 2a analyses the risk tolerance of solo entrepreneurs against the base outcome wage workers. In table 5 column 2b it is found that the variable, solo entrepreneurs, is positive and significant at a 1% significance level. This means that being a solo entrepreneur compared to being a wage worker increases the odds of being risk tolerant, *ceteris paribus*. More precisely, solo entrepreneurs are 2.258 times more risk tolerant than wage workers. Looking at the control variables, similar results are found as for hypothesis one. From all these findings it is believed that hypothesis 2a is accepted.

For hypothesis 2b a comparison is made between solo entrepreneurs and employer entrepreneurs, both groups have as base outcome wage workers. Both variables are found to be positively significant at 1% significance level. Comparing the odds ratio of both, the risk tolerance of employer entrepreneurs, compared to wage workers, is larger than the risk

tolerance of solo entrepreneurs, compared to wage workers. But these results in table 5 column 2b cannot completely affirm the hypothesis. The hypothesis states that the risk tolerance of solo entrepreneurs compared to the risk tolerance of employer entrepreneurs is lower, this cannot be retrieved from table 5 solely. Therefore, a comparison is made between the two independent variables by testing the null hypothesis; risk tolerance of solo entrepreneurs is equal to the risk tolerance of employer entrepreneurs. This test constrains the coefficients to equality and uses a nested F-test to ascertain decrement in fit. The p-value is found to be 0.0555, with the result being significant at 10% significance level the hypothesis stating the equality can be rejected and therefore it can be concluded that the two coefficients are not equal.

Referring to what is mentioned before, it is found that being an employer entrepreneur increases the odds of being risk tolerant by 2.567 while being a solo entrepreneur increases the odds by 2.258, both compared to being a wage worker. Hence, employer entrepreneurs are more risk tolerant than solo entrepreneurs which leads to acceptance of hypothesis 2b.

4.3 Hypothesis 3a and 3b

The first of the two hypotheses representing the difference between Eastern and Western Europe is hypothesis 3a; solo entrepreneurs in Eastern Europe have a lower risk tolerance than these in Western Europe. In table 6 column 3b the results showing the direct effect of solo entrepreneurs on risk tolerance are similar to the ones found for hypothesis 2a (positively significant). A second independent variable is the dummy variable Eastern Europe which gives value one for Eastern Europe and zero for the base outcome Western Europe. The direct effect of being from Eastern Europe has a negative effect on risk tolerance compared to being from Western Europe. However, the coefficient is not significant which implies that the statement cannot be confirmed.

With these two binary independent variables a moderator variable is developed to test the hypothesis. This moderating variable implies solo entrepreneur and Eastern Europe. The relationship between this moderator and risk tolerance is found to be negative. Yet it is not significant so no assumptions can be made regarding risk tolerance of solo entrepreneurs in Eastern Europe.

Hypothesis 3b also examines entrepreneurship on an aggregate level with the only difference compared to 3a being that this hypothesis considers employer entrepreneurs instead of solo

entrepreneurs. The odds ratio in table 6 column 3b shows a significant effect of employer entrepreneurs on risk tolerance. This translates into a first direct effect being that an employer entrepreneur (compared to wage worker) has 2.534 times greater odds to be risk tolerant. The second direct effect includes the same dummy variable Eastern Europe as in hypothesis 3a. In this scenario the variable has a negative influence on risk tolerance; however, the outcome is again found to be insignificant so no conclusion can be drawn regarding the effect of regions on risk tolerance.

The moderation effect between employer entrepreneur and Eastern Europe on risk tolerance based on hypothesis 3b is positive but insignificant.

From these findings both hypothesis 3a and hypothesis 3b cannot be confirmed.

4.4 Hypothesis 4

Hypothesis four considers entrepreneurs' risk tolerance on a macro-level in table 7. It looks at the moderating effect of GDP per capita and entrepreneurs on risk tolerance, the hypothesis states that higher GDP per capita of a country strengthens the direct positive relationship between entrepreneurs and risk tolerance. The direct effect of the independent variable young business entrepreneur has a negative insignificant effect on risk tolerance.

The other direct effect on risk tolerance comes from the independent variable GDP per capita ($\ln(YCAP)$), this coefficient has a positive significant effect (at 10% significance level). This effect means that for every increase in income per person in a country, the odds of being more tolerant towards risks increases by 1.185, *ceteris paribus*.

The interaction effect of the two variables is also positively significant at a 5% significance level. Therefore, a higher GDP per capita strengthens the relationship between entrepreneurs and risk tolerance. In order to find a value for the moderating effect the numbers from table 7 are implemented in the equation below;

$$\begin{aligned} \text{Risk tolerance} &= (\beta_1 + \beta_2 \ln(YCAP))YB \text{ Entrepreneur} \\ &= (-1.314 + 0.218 \ln(YCAP))YB \text{ Entrepreneur} \end{aligned}$$

From table 2 the minimum and maximum value of $\ln(YCAP)$ are retrieved, respectively 9.1 and 11.53. When these values are added in the regression it is found that the value of the coefficient for young business entrepreneur is between 0.67 and 1.2 which is positive and thus these findings lead to the acceptance of hypothesis four.

4.5 Hypothesis 5

The last hypothesis states that higher uncertainty avoidance of a country weakens the direct positive relationship between entrepreneurs and risk tolerance. Table 7 column 5b shows the moderating effect between the two independent variables uncertainty avoidance and young business entrepreneur, in which uncertainty avoidance is the moderator between entrepreneurs and risk tolerance. The effect of the moderator is found to be negatively significant at 1% significance level.

Likewise, as for hypothesis four the value of the moderator needs to be calculated;

$$\begin{aligned} \text{Risk tolerance} &= (\beta_1 + \beta_2 \ln(UAI))YB \text{ Entrepreneur} \\ &= (3.099 - 0.516 \ln(UAI))YB \text{ Entrepreneur} \end{aligned}$$

The minimum and maximum value for $\ln(UAI)$ are respectively 3.37 and 4.72. By implementing these in the above-mentioned formula it is found that the value of the coefficient for young business entrepreneurs is between 1.36 and 0.66. This effect leads to the acceptance of hypothesis five.

4.6 Robustness Check of Risk Tolerance with Positive Perceived Opportunities

In appendix C the robustness check of all hypotheses is presented. In this case, ‘risk tolerance with positive perceived opportunities’ is used as dependent variable. This variable is another proxy to measure the reverse of risk tolerance. The variable retrieved from the GEM questionnaire might potentially be a valuable replacement for the dependent variable risk tolerance. Originally the variable is called fear of failure rate (*frfailop*), it is defined as the percentage of the population between 18 and 64 years old with positive perceived opportunities to start a business but who indicate that fear of failure would prevent them from setting up a business (GEM, n.d.).

A limitation of the variable risk tolerance in this thesis is that it is a non-binding statement. Individuals who have no intention to start their own business might answer this question different in comparison to the ones having the opportunity and the ones willing to take it. Therefore, the responses from the *frfailop* variable are more explicit as the opportunity to start a business is present in these cases.

First of all, the new risk tolerance variable's descriptive statistics were compared to original risk tolerance ones. The mean of risk tolerance with positive perceived opportunities is 0.159. This means that only 16% of the respondents (101,151 observations) with the opportunity to start a business are risk tolerant. As the total number of observations for this variable is only 26,806 the mean might not be perfectly represented in the sample, since not everyone has the opportunity to start a business. The share of the in total 101,151 observations which has never perceived an opportunity will not be able to answer this survey question. Therefore, when solely checking the mean for the group of respondents which has perceived opportunities it is found that 60% would be risk tolerant. This means that individuals who had the chance to start their own business are slightly more risk tolerant than the ones who did not perceive an opportunity (52%).

Overall in tables C.1, C.2, and C.3 similar results are obtained as in tables 5, 6, and 7. However, the coefficients retrieved for the robustness check are stronger. This implicates that for the variable *frfailop* significant results are showing more realistic and mostly larger odds ratios, while the insignificant results show mainly smaller coefficients. Except for these minor changes, hypothesis five's moderator variable undergoes a remarkable shift. As for the dependent variable risk tolerance the interaction between the natural logarithm of uncertainty avoidance and young business entrepreneur is negatively significant. Whereas, for the dependent variable, risk tolerance with positive perceived opportunities, the moderating variable is still negative but insignificant which would lead to a rejection of hypothesis 5.

It can be concluded that the findings from the robustness check are more precise mainly because *frfailop* is a more precise definition of risk tolerance.

Table 5, Regression Model Hypotheses 1, 2a and 2b

Variables	1a (Coefficient)	1b (Odds ratio)	2a (Coefficient)	2b (Odds ratio)
<i>Young business entrepreneur</i>	0.885*** (0.067)	2.423*** (0.162)		
<i>YB solo entrepreneur</i>			0.815*** (0.075)	2.258*** (0.170)
<i>YB employer entrepreneur</i>			0.943*** (0.073)	2.567*** (0.187)
<i>Eastern Europe</i>				
<i>YB solo entrepreneur * Eastern Europe</i>				
<i>YB employer entrepreneur * Eastern Europe</i>				
<i>ln(UAI)</i>				
<i>ln(YCAP)</i>				
<i>YB * ln(YCAP)</i>				
<i>YB * ln(UAI)</i>				
<i>Male</i>	0.355*** (0.028)	1.426*** (0.040)	0.356*** (0.028)	1.428*** (0.040)
<i>Age</i>	-0.056*** (0.012)	0.946*** (0.011)	-0.056*** (0.012)	0.946*** (0.011)
<i>Age2</i>	0.0007*** (0.000)	1.001*** (0.000)	0.0007*** (0.000)	1.001*** (0.000)
<i>Number of household members</i>	-0.032*** (0.010)	0.969*** (0.010)	-0.032*** (0.010)	0.969*** (0.010)
<i>Level of education (Base = No education)</i>				
<i>Some secondary education</i>	-0.040 (0.070)	0.960 (0.068)	-0.040 (0.070)	0.961 (0.068)
<i>Secondary degree</i>	-0.029 (0.083)	0.971 (0.081)	-0.029 (0.083)	0.972 (0.081)
<i>Post-secondary education</i>	0.042 (0.075)	1.042 (0.078)	0.042 (0.074)	1.043 (0.078)
<i>Graduate experience</i>	-0.004 (0.111)	0.996 (0.111)	-0.002 (0.111)	0.998 (0.111)
<i>Household income (Base = Lowest 33%tile)</i>				
<i>Middle 33%tile</i>	0.037 (0.041)	1.038 (0.042)	0.037 (0.041)	1.038 (0.042)
<i>Upper 33%tile</i>	0.253*** (0.074)	1.287*** (0.096)	0.253*** (0.075)	1.288*** (0.096)
<i>Constant</i>	0.806*** (0.275)	2.239*** (0.616)	0.806*** (0.274)	2.240*** (0.614)
<i>Observations</i>	101,109	101,109	101,109	101,109

Note. Reference category for young business entrepreneurs, solo entrepreneurs and employer entrepreneurs is wage workers

Robust standard errors in parentheses clustered by country

***p<0.01, **p<0.05, *p<0.1

Table 6, Regression Model Hypotheses 3a and 3b

Variables	3a (Coefficient)	3b (Odds ratio)
<i>Young business entrepreneur</i>		
<i>YB solo entrepreneur</i>	0.845*** (0.094)	2.328*** (0.220)
<i>YB employer entrepreneur</i>	0.930*** (0.106)	2.534*** (0.267)
<i>Eastern Europe</i>	-0.120 (0.114)	0.887 (0.101)
<i>YB solo entrepreneur * Eastern Europe</i>	-0.243 (0.204)	0.785 (0.160)
<i>YB employer entrepreneur * Eastern Europe</i>	0.075 (0.137)	1.078 (0.148)
<i>ln(UAI)</i>		
<i>ln(YCAP)</i>		
<i>YB * ln(YCAP)</i>		
<i>YB * ln(UAI)</i>		
<i>Male</i>	0.353*** (0.028)	1.424*** (0.040)
<i>Age</i>	-0.056*** (0.012)	0.945*** (0.011)
<i>Age2</i>	0.0007*** (0.000)	1.001*** (0.000)
<i>Number of household members</i>	-0.027** (0.011)	0.973** (0.011)
<i>Level of education (Base = No education)</i>		
<i>Some secondary education</i>	-0.054 (0.077)	0.947 (0.073)
<i>Secondary degree</i>	-0.036 (0.084)	0.964 (0.081)
<i>Post-secondary education</i>	0.031 (0.079)	1.031 (0.081)
<i>Graduate experience</i>	0.001 (0.110)	1.001 (0.110)
<i>Household income (Base = Lowest 33%tile)</i>		
<i>Middle 33%tile</i>	0.039 (0.041)	1.040 (0.043)
<i>Upper 33%tile</i>	0.249*** (0.077)	1.282*** (0.099)
<i>Constant</i>	0.846*** (0.271)	2.331*** (0.630)
<i>Observations</i>	101,109	101,109

Note. Reference category for young business entrepreneurs, solo entrepreneurs and employer entrepreneurs is wage workers

Robust standard errors in parentheses clustered by country

***p<0.01, **p<0.05, *p<0.1

Table 7, Regression Model Hypotheses 4 and 5

Variables	4a (Coefficient)	4b (Odds ratio)	5a (Coefficient)	5b (Odds ratio)
<i>Young business entrepreneur</i>	-1.314 (0.945)	0.269 (0.254)	3.099*** (0.686)	22.171*** (15.206)
<i>YB solo entrepreneur</i>				
<i>YB employer entrepreneur</i>				
<i>Eastern Europe</i>				
<i>YB solo entrepreneur * Eastern Europe</i>				
<i>YB employer entrepreneur * Eastern Europe</i>				
<i>ln(UAI)</i>			-0.331** (0.135)	0.718** (0.097)
<i>ln(YCAP)</i>	0.169* (0.097)	1.185* (0.114)		
<i>YB * ln(YCAP)</i>	0.218** (0.094)	1.244** (0.117)		
<i>YB * ln(UAI)</i>			-0.516*** (0.156)	0.597*** (0.093)
<i>Male</i>	0.354*** (0.027)	1.425*** (0.038)	0.361*** (0.026)	1.434*** (0.037)
<i>Age</i>	-0.054*** (0.012)	0.948*** (0.012)	-0.046*** (0.011)	0.955*** (0.010)
<i>Age²</i>	0.0007*** (0.000)	1.001*** (0.000)	0.0006*** (0.000)	1.001*** (0.000)
<i>Number of household members</i>	-0.022*** (0.009)	0.978*** (0.008)	-0.024*** (0.008)	0.977*** (0.008)
<i>Level of education (Base = No education)</i>				
<i>Some secondary education</i>	-0.049 (0.067)	0.952 (0.064)	-0.026 (0.060)	0.975 (0.059)
<i>Secondary degree</i>	-0.034 (0.081)	0.967 (0.078)	-0.014 (0.071)	0.986 (0.070)
<i>Post-secondary education</i>	0.023 (0.076)	1.023 (0.078)	0.035 (0.069)	1.036 (0.071)
<i>Graduate experience</i>	-0.014 (0.106)	0.986 (0.104)	-0.008 (0.098)	0.992 (0.097)
<i>Household income (Base = Lowest 33%tile)</i>				
<i>Middle 33%tile</i>	0.034 (0.038)	1.035 (0.039)	0.034 (0.037)	1.034 (0.038)
<i>Upper 33%tile</i>	0.237*** (0.066)	1.268*** (0.084)	0.230*** (0.057)	1.259*** (0.072)
<i>Constant</i>	-0.970 (1.030)	0.379 (0.391)	2.009*** (0.658)	7.459*** (4.911)
<i>Observations</i>	101,109	101,109	101,109	101,109

Note. Reference category for young business entrepreneurs, solo entrepreneurs and employer entrepreneurs is wage workers

Robust standard errors in parentheses clustered by country

***p<0.01, **p<0.05, *p<0.1

5. Discussion

Hypothesis 1

Over the years a lot of research has been conducted towards risk tolerance of entrepreneurs. However, what makes this study slightly different from previous ones is that young business entrepreneurs are considered, opposing to entrepreneurs in general who have been studied by the majority over the years. Nevertheless, from the literature study results were expected to have a positive outcome, these are confirmed by the outcome of this study. The model has proved a positive relation between young business entrepreneurs and risk tolerance which means that young business entrepreneurs have a higher risk tolerance compared to wage workers.

These findings have common ground with what Cantillon (1755) concluded; “one is an entrepreneur when one is willing to face risks”.

De Clercq and Arenius (2006), Levie (2007), and Weber and Milliman (1997) agree upon this outcome as all their studies have found more risk tolerance within the group of entrepreneurs. Frequently mentioned reasons for high risk tolerance are motivation and conviction which on its turn lead to more opportunities (Grilo & Thurik, 2005).

Hypothesis 2a

The study also accepted hypothesis 2a, stating a higher risk tolerance for solo entrepreneurs compared to wage workers. This hypothesis was proved by the findings of this study. Past research can confirm the expectations expressed in the hypothesis, they believed that solo entrepreneurs are careful; ideally, they need to take some large risks to become successful (Douglas & Shepherd, 2002). A wage worker receives a fixed monthly salary not depending on the risk taken within the company (Davies, 2013). However, entrepreneurs, depending on the investment risk they bear and decision they take, are subject to severe profit fluctuations. This confirms that risk tolerance is one of the drivers which distinguishes solo entrepreneurs from wage workers and to a lesser extent as Gartner (1997) mentioned trusting someone with their ‘creations’.

Hypothesis 2b

As hypothesis 2a compared solo entrepreneurs to wage workers, hypothesis 2b compares the two groups of young business entrepreneurs. It is believed that solo entrepreneurs are more careful and willing to avoid any unnecessary burden within their business i.e. costs or hiring

employees (Coad et al., 2016; Pink, 2001). Also, solo entrepreneurs often have other priorities than employer entrepreneurs in order to create more stability and increase their future risk tolerance. This can be confirmed by the results found in this thesis. Coad et al. (2016) found that better abilities lead to greater success and hiring of employees, which together forms part of the basis to become an employer entrepreneur. Therefore, employer entrepreneurs stimulate risk tolerance in a positive way. Furthermore, the argument by Gartner (1997), which for hypothesis 2a was expected to be less important, stating that solo entrepreneurs have a hard time confiding someone else with their own creation might eventually have a larger influence than expected in this study. This effect could dominate and therefore minimise the influence of solo entrepreneurs on risk tolerance compared to employer entrepreneurs.

A stronger relationship is found between employer entrepreneurs, compared to solo entrepreneurs, and risk tolerance. This is confirmed by the literature, employer entrepreneurs are willing to take more risks mainly with the incentive of earning higher profits or opportunity costs (Caliendo et al., 2017).

Hypothesis 3a and 3b

Based on previous studies, it was expected that both solo and employer entrepreneurs in Eastern Europe would have a lower risk tolerance compared to entrepreneurs in Western Europe. These expectations were based on findings in the literature, which were built on the consideration of the communistic past of Eastern Europe which created a lot of prejudices and judgements regarding entrepreneurship in terms of personality of the entrepreneur, money and employment in the new firm (Covin & Slevin, 1989; Dyer & Panicheva Mortensen, 2005; Freytag & Thurik, 2006; Shane, 2014). These findings were further substantiated by taking into consideration economic and cultural factors. Notwithstanding the foregoing, no significant results were found for neither solo nor employer entrepreneurs in Eastern Europe formulated in hypotheses 3a and 3b. Several explanations could be given for the rejection of hypothesis 3a and 3b. First, it could mean that Western Europe has a higher risk tolerance, but this risk tolerance is based on a differentiation between different groups of entrepreneurs e.g. certain industries. Or the distinction could be based on different influential factors e.g. environmental differences (one region is more sensitive to natural disasters than the other). Which is in line with the findings stating that entrepreneurs in regions dealing with natural disasters, frequently or recently, are less risk tolerant (Cameron & Shah, 2015; Cassar, Healy & Von Kessler, 2011). At last, it could be that differences between Eastern and Western Europe are negligible in today's world. Desai, Gompers and Lerner (2003) explored the impact of political, regulatory and legal influences on

entrepreneurial activities. They concluded that in more mature economies within Europe the impact of these variables is barely visible. Since all countries in this study belong to the European Union and thus must fulfil certain conditions, it could be expected that the influence of being an Eastern European country might not be as significant as predicted in this study.

Hypothesis 4

In this thesis expectations were formed regarding hypothesis 4 based on literature. This study expected a higher GDP per capita to positively influence the positive relation between entrepreneurship and risk tolerance. These expectations are confirmed in table 7. Like Cullen and Gordon (2007) this study found a positive relation between income per capita, entrepreneurs, and risk tolerance. Therefore, the expectations formulated in section 2.5 contain a source of truth, many factors could be a stimulation for the influence of this interaction term on risk tolerance i.e. larger safety net in wealthy countries, a better basis to start from or larger availability of agencies helping with the start-up process.

Hypothesis 5

The last hypothesis is about the cultural aspect, uncertainty avoidance. The hypothesis stated that lower uncertainty avoidance positively affects the positive relationship between entrepreneurs and risk tolerance on a macro-level. The literature has agreed on a reverse relation between uncertainty avoidance and the main variables entrepreneurs and risk tolerance, also this study agrees upon these findings.

As a result, it was confirmed in table 7 that being a young business entrepreneur in a country with a low uncertainty avoidance leads to more risk tolerance and better achievements (Swierczek & Ha, 2003). The group with a low level of uncertainty avoidance will create a better landscape for entrepreneurs as it will lead to more jobs, opportunities, and revolutionary inventions (Hofstede, 2001). On the grounds of these studies and the findings by Noorderhaven et al. (1999) it can be confirmed that the higher the uncertainty avoidance index the less risk tolerant entrepreneurs are. So lower uncertainty avoidance creates an optimal economic outlook which leads back to what is proved for hypothesis four, namely an increase in income per capita (Burton, 2015).

Robustness Check

By implementing a slightly deviating dependent variable (*frfailop*) a correctness check of the study was performed. No extremely straying results were found; therefore, the discussion above

can be generally accepted for the robustness check as well. Except for hypothesis five, the results for this regression model (see table C.3) were found to be straying from the results in table 7. The hypothesis cannot be confirmed regarding the effect of uncertainty avoidance on the relation between entrepreneurs and risk tolerance when using the dependent variable ‘risk tolerance with positive perceived opportunities’. It could be expected that the effect of this cultural factor on the relationship between entrepreneurs and risk tolerance is negligible as it originally is part of a larger framework by Hofstede including six dimensions. These six dimensions together form the base for society’s cultural effect on values, structure, and behaviour.

6. Conclusion and Limitations

This study has empirically tested the risk tolerance of young business entrepreneurs based on micro- and macro-level factors. Given that a lot of research has been conducted regarding the risk tolerance of entrepreneurs, no major differences were expected to be found when looking at the risk tolerance of starting entrepreneurs owning a business no older than 42 months. The findings in this study showed that young business entrepreneurs are more risk tolerant compared to wage workers considering they initiate a new business while facing major uncertainties on future probability and success. Differently, variation was expected respecting the risk tolerance within different groups of young business entrepreneurs.

This study divided the group of young business entrepreneurs in solo and employer entrepreneurs. The distinction between both groups of entrepreneurs was mainly based on the number of employees active in the entrepreneur's business. For the group of solo entrepreneurs, it is defined that no other than the entrepreneur him or herself is active in the company. Whereas for employer entrepreneurs it is defined that they have at least one employee actively participating in the business.

First, a comparison was made between solo entrepreneurs and wage workers. This substantially expanded on the first hypothesis, which investigated risk tolerance of young business entrepreneurs, by specifying young business entrepreneurs as solo entrepreneurs. The results were not divergent from what was found for young business entrepreneurs in general. Second, solo entrepreneurs were compared to employer entrepreneurs. In this scenario the focus was on either having no employees or at least one. The conclusion of this hypothesis, stating that employer entrepreneurs are more risk tolerant than solo entrepreneurs, was in line with previous findings. The discussion by Coad et al. (2016) was believed to be an indicator for the occurrence of the results found, arguing that solo employers want more financial and creative freedom compared to wage workers. Although, Coad et al. (2016) believed they might not be willing to take the risks employer entrepreneurs take to retrieve this freedom.

The remaining part of this thesis was conducted on a macro-level. First, a distinction was made between Eastern and Western Europe and thereafter the economic and the cultural aspects were covered. It was found that a division based on region had no significant influence on the risk tolerance of entrepreneurs. Both historical and contemporary arguments motivated this outcome.

After 25 years the Communist Imprint effect may have diminished and along with it the prejudices against entrepreneurs. A potential contemporary explanation could be the fact that the differences between the two main regions of the European Union has become negligibly small. These findings cast doubt on the importance of region as a determinant of risk tolerance, which was posited as important by Estrin et al. (2009), Kreiser et al. (2010), and Zwan et al. (2011).

The second distinction on macro-level was subdivided into two categories. On the one hand, the thesis investigated the economic aspect for which it considered GDP per capita as determinant. On the other hand, uncertainty avoidance was treated as a cultural determinant. In this thesis, it was found that higher GDP per capita is conducive for the risk tolerance of entrepreneurs. A larger income per capita can provide more resources and professional guidance to stimulate a business which makes the risk taken more a matter of course and less of a burden. Therefore, it is assumed that the intention to be an entrepreneur is stronger when income per capita is high, as it is associated with higher risk tolerance.

Uncertainty avoidance was found to have a reverse effect on risk tolerance and entrepreneurship. This means that the higher the uncertainty avoidance the weaker the positive relationship between entrepreneurs and risk tolerance. The intuition behind this relationship is based on the consequences of uncertainty avoidance. In countries with high uncertainty avoidance entrepreneurs seek more stability and security which results in less risk tolerance.

The effect of both GDP per capita and uncertainty avoidance made a significant contribution to the existing literature and this study. First, both determinants represented two of the main indicators for measuring economic and cultural influences. Second, for both determinants there was no missing nor outdated data, given it was regularly updated for every country. This implied their correctness as output for this study. Third, past studies were found linking GDP per capita and uncertainty avoidance to entrepreneurship, however none applied the determinants in the same context as they were applied here.

Overall, this study confirms that risk tolerance is perceived different by wage workers and young business entrepreneurs. Further, it has shown that risk tolerance differs within certain groups of entrepreneurs and that several determinants have a significant effect on how this risk tolerance is perceived. Yet, no distinction could be made between regions which might be caused by several conditions. Therefore, this hypothesis remains a subject for further research in the future.

This study faced several limitations that need to be taken into account for the interpretation of the findings. First and foremost, the dependent variable risk tolerance, which is the reverse outcome of the variable fear of failure, might be endogenous. Ideally, this dependent variable would be measured by the means of a generally accepted measure which could be objectified. In the GEM survey the question regarding the variable fear of failure possibly referred to the fear before the emergence of a business. Consequently, the effect of the variable is possibly incorrect for young business entrepreneurs who have already started their business. It might be biased as people who indicate that they experience the 'fear to start a business' often end up not starting one and thus staying in employment i.e. wage workers. In other words, there is a relative possibility that the observations of risk tolerance used for this thesis mainly include risk tolerant people as they have the highest potential to become entrepreneurs. Reassuringly, the correlation between uncertainty avoidance and risk tolerance is below 5% which proves that risk tolerance is not the same as uncertainty avoidance. Additionally, table 2 has proven that the majority of the respondents are risk tolerant (52%), 3% of whom are young business entrepreneurs. This reassures that a large part of the non-entrepreneurs is risk tolerant too.

Another limitation could be reverse causality, in this thesis the effect of young business entrepreneurs on risk tolerance is checked. Yet, there is truth in the reverse relationship too. Being more risk tolerant might be a stimulant to become an entrepreneur. Hence, this is statistical associated rather than a causal effect.

A third limitation with respect to risk tolerance is that a person's tolerance towards risk is to a certain extent a comfort level of uncertainty or personality trait. A person may not be aware of his or her level of risk tolerance until they face a situation in which they experience it. Therefore, it might be questioned if fear of failure, i.e. reverse measure of risk tolerance, is measurable as an identical situation for everyone as it can be experienced and measured differently in terms of risk by different people.

Further limitations could be, first of all, the reverse effects of certain variables on society. For instance, an increase in the degree of uncertainty avoidance of part of the population creates opportunities for others having or starting a small and young business. In this thesis when looking at macro-level effects the research was based on regions. However, there might be differences between and even within countries and cultures which cannot be considered on a European level. This on the grounds that some changes do not take place in all developed economies at the same time or to the same degree (Audretsch et al., 2002).

Second, the sample used contains twelve Western European countries and only seven Eastern European countries. Therefore, the regression model outcomes might be a bit biased towards Western European countries. Future research is recommended to use more equal groups in order to conduct this study.

For further research it could be interesting to consider not only young business entrepreneurs who succeeded in starting up their business. Next to this group, which is treated in this thesis, it might be informational to also treat a measure for the ones who tried to set up their own business but did not succeed in pursuing it as they might have experienced risk tolerance in a different way.

The findings of this thesis offer a limited practical implication; having to deal with risks is an important barrier that restrains individuals from setting up a business, only very few (3%⁴) dare to exchange their rewards of salaried employment for pursuing their own idea or innovation in terms of a start-up business. Setting up (governmental supported) institutions to educate and train potential entrepreneurs about risk management and entrepreneurial competencies might encourage the incentive and the creation of new business which in the long run stimulates not only the entrepreneur but also the economy.

Overall, the subject risk tolerance and entrepreneurship has often been investigated. Nevertheless, the results of this study have contributed to the existing academic literature regarding both the economic and the cultural influences on young business entrepreneurship.

⁴ See table 2

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8. Appendix

APPENDIX A

Table A.1, Definitions

Variable	Definition	Source
Fear of failure (fearfail)	Percentage of 18-64 population who indicate that fear of failure would prevent them from setting up a business.	GEM
Fear of failure rate (frfailop)	Percentage of 18-64 population with positive perceived opportunities who indicate that fear of failure would prevent them from setting up a business.	GEM
Young business entrepreneurs	Entrepreneurs managing or owning a business younger than 3.5 years old.	GEM
YB solo entrepreneurs	Entrepreneurs managing or owning a business younger than 3.5 years old without employees.	GEM
YB employer entrepreneurs	Entrepreneurs managing or owning a business younger than 3.5 years old with at least one employee.	GEM
GDP per capita	Reflects differences in cost of living and inflation rates per country.	IMF
Uncertainty avoidance index	Distinction between cultures on the amount of tolerance for ambiguity and unpredictability.	Hofstede

APPENDIX B

Table B.1, Variable Description

Variable Name	Survey Question (If applicable)	Values	Type	Source
Risk tolerance (=1 - Fear of failure)	Would fear of failure prevent you from starting a business?	1 = Yes, 0 = No	Binary	GEM
Young business entrepreneur	Do you manage or own a business up to 42 months?	1 = Yes, 0 = No	Binary	GEM
Number of employees (TEAyyJNW)	Current number of jobs? (4 categories)	1 = No job 2 = 1-5 jobs 3 = 6-19 jobs 4 = 20+ jobs	Categorical	GEM
Eastern Europe	Bases on country of origin of each respondent	1 = Eastern Europe 0 = Western Europe	Binary	GEM
GDP per capita (YCAP)	/	Numerical	Continuous	IMF (World Databank)
Uncertainty Avoidance Index (UAI)	/	Scale from 0-100 ⁵	Continuous	Hofstede's Dimensions
Gender	What is your gender?	1 = Male 0 = Female	Binary	GEM

⁵ Some of the dimension scores obtained in replication studies fall outside the 0-100 continuum (source: <https://geerthofstede.com/research-and-vsm/dimension-data-matrix/>)

Table B.1 Continued

Variable Name	Survey Question (If applicable)	Values	Type	Source
Age	What is your current age (in years)?	Ranging from 18 to 99	Continuous	GEM
Age²	Square of age		Continuous	GEM
Number of household members	How many members make up your permanent household, including you?	Range from 1 to 90	Continuous	GEM
Level of education	Harmonised educational attainment	0 = None, 1 = Some secondary education, 2 = Secondary degree, 3 = Post-secondary education, 4 = Graduate experience	Categorical (dummy with base=0)	GEM
Household income	Income in thirds	0 = Lower 33%tile, 1 = Middle 33%tile, 2 = Upper 33%tile	Categorical (dummy with base=0)	GEM

APPENDIX C

Table C.1, Regression Models Hypotheses 1, 2a and 2b with Risk Tolerance with Positive Perceived Opportunities

Variables	1a (Coefficient)	1b (Odds ratio)	2a (Coefficient)	2b (Odds ratio)
<i>Young business entrepreneur</i>	1.153*** (0.066)	3.169*** (0.209)		
<i>YB solo entrepreneur</i>			1.102*** (0.050)	3.010*** (0.150)
<i>YB employer entrepreneur</i>			1.155*** (0.106)	3.173*** (0.336)
<i>Eastern Europe</i>				
<i>YB solo entrepreneur * Eastern Europe</i>				
<i>YB employer entrepreneur * Eastern Europe</i>				
<i>ln(UAI)</i>				
<i>ln(YCAP)</i>				
<i>YB * ln(YCAP)</i>				
<i>YB * ln(UAI)</i>				
<i>Male</i>	0.366*** (0.024)	1.442*** (0.034)	0.368*** (0.024)	1.445*** (0.034)
<i>Age</i>	-0.061*** (0.010)	0.941*** (0.009)	-0.061*** (0.010)	0.941*** (0.009)
<i>Age2</i>	0.0007*** (0.000)	1.001*** (0.000)	0.0007*** (0.000)	1.001*** (0.000)
<i>Number of household members</i>	-0.064*** (0.018)	0.938*** (0.017)	-0.064*** (0.018)	0.938*** (0.017)
<i>Level of education (Base = No education)</i>				
<i>Some secondary education</i>	0.054 (0.103)	1.056 (0.109)	0.054 (0.103)	1.056 (0.109)
<i>Secondary degree</i>	0.218* (0.127)	1.244* (0.158)	0.218* (0.127)	1.244* (0.158)
<i>Post-secondary education</i>	0.456*** (0.155)	1.577*** (0.245)	0.457*** (0.155)	1.580*** (0.245)
<i>Graduate experience</i>	0.491*** (0.176)	1.634*** (0.288)	0.494*** (0.176)	1.638*** (0.289)
<i>Household income (Base = Lowest 33%tile)</i>				
<i>Middle 33%tile</i>	0.137*** (0.037)	1.146*** (0.043)	0.137*** (0.037)	1.147*** (0.043)
<i>Upper 33%tile</i>	0.502*** (0.081)	1.652*** (0.134)	0.503*** (0.081)	1.654*** (0.134)
<i>Constant</i>	-0.987*** (0.180)	0.373*** (0.067)	-0.986*** (0.180)	0.373*** (0.067)
<i>Observations</i>	104,405	104,405	104,405	104,405

Note. Reference category for young business entrepreneurs, solo entrepreneurs and employer entrepreneurs is wage workers

Robust standard errors in parentheses clustered by country

***p<0.01, **p<0.05, *p<0.1

Table C.2, Regression Models Hypotheses 3a and 3b with Risk Tolerance with Positive Perceived Opportunities

Variables	3a (Coefficient)	3b (Odds ratio)
<i>Young business entrepreneur</i>		
<i>YB solo entrepreneur</i>	1.116*** (0.048)	3.053*** (0.147)
<i>YB employer entrepreneur</i>	1.242*** (0.104)	3.462*** (0.359)
<i>Eastern Europe</i>	-0.150 (0.159)	0.861 (0.137)
<i>YB solo entrepreneur * Eastern Europe</i>	-0.169 (0.136)	0.845 (0.115)
<i>YB employer entrepreneur * Eastern Europe</i>	-0.226* (0.135)	0.798* (0.108)
<i>ln(UAI)</i>		
<i>ln(YCAP)</i>		
<i>YB * ln(YCAP)</i>		
<i>YB * ln(UAI)</i>		
<i>Male</i>	0.365*** (0.023)	1.441*** (0.033)
<i>Age</i>	-0.062*** (0.010)	0.940*** (0.009)
<i>Age2</i>	0.001*** (0.000)	1.001*** (0.000)
<i>Number of household members</i>	-0.058*** (0.015)	0.943*** (0.014)
<i>Level of education (Base = No education)</i>		
<i>Some secondary education</i>	0.039 (0.107)	1.040 (0.111)
<i>Secondary degree</i>	0.210 (0.132)	1.233 (0.162)
<i>Post-secondary education</i>	0.444*** (0.155)	1.559*** (0.241)
<i>Graduate experience</i>	0.499*** (0.177)	1.647*** (0.291)
<i>Household income (Base = Lowest 33%tile)</i>		
<i>Middle 33%tile</i>	0.140*** (0.037)	1.150*** (0.042)
<i>Upper 33%tile</i>	0.498*** (0.080)	1.645*** (0.132)
<i>Constant</i>	-0.941*** (0.199)	0.390*** (0.078)
<i>Observations</i>	104,405	104,405

Note. Reference category for young business entrepreneurs, solo entrepreneurs and employer entrepreneurs is wage workers

Robust standard errors in parentheses clustered by country

***p<0.01, **p<0.05, *p<0.1

Table C.3, Regression Models Hypotheses 4 and 5 with Risk Tolerance with Positive Perceived Opportunities

Variables	4a (Coefficient)	4b (Odds ratio)	5a (Coefficient)	5b (Odds ratio)
<i>Young business entrepreneur</i>	-0.528 (0.745)	0.590 (0.439)	1.606*** (0.563)	4.981*** (2.803)
<i>YB solo entrepreneur</i>				
<i>YB employer entrepreneur</i>				
<i>Eastern Europe</i>				
<i>YB solo entrepreneur * Eastern Europe</i>				
<i>YB employer entrepreneur * Eastern Europe</i>				
<i>ln(UAI)</i>			-0.654*** (0.109)	0.520*** (0.057)
<i>ln(YCAP)</i>	0.356*** (0.131)	1.428*** (0.186)		
<i>YB * ln(YCAP)</i>	0.168** (0.071)	1.183** (0.083)		
<i>YB * ln(UAI)</i>			-0.102 (0.142)	0.903 (0.128)
<i>Male</i>	0.366*** (0.025)	1.442*** (0.036)	0.379*** (0.023)	1.461*** (0.034)
<i>Age</i>	-0.057*** (0.010)	0.945*** (0.010)	-0.042*** (0.009)	0.959*** (0.008)
<i>Age2</i>	0.0006*** (0.000)	1.001*** (0.000)	0.0004*** (0.000)	1.000*** (0.000)
<i>Number of household members</i>	-0.045*** (0.014)	0.956*** (0.014)	-0.047*** (0.016)	0.954*** (0.016)
<i>Level of education (Base = No education)</i>				
<i>Some secondary education</i>	0.047 (0.100)	1.048 (0.105)	0.098 (0.065)	1.103 (0.072)
<i>Secondary degree</i>	0.215* (0.124)	1.240* (0.154)	0.261*** (0.098)	1.298*** (0.127)
<i>Post-secondary education</i>	0.425*** (0.140)	1.530*** (0.215)	0.452*** (0.114)	1.572*** (0.180)
<i>Graduate experience</i>	0.472*** (0.168)	1.603*** (0.269)	0.498*** (0.150)	1.645*** (0.247)
<i>Household income (Base = Lowest 33%tile)</i>				
<i>Middle 33%tile</i>	0.134*** (0.031)	1.144*** (0.036)	0.141*** (0.031)	1.152*** (0.035)
<i>Upper 33%tile</i>	0.477*** (0.068)	1.612*** (0.109)	0.473*** (0.062)	1.605*** (0.100)
<i>Constant</i>	-4.751*** (1.415)	0.009*** (0.012)	1.342*** (0.465)	3.825*** (1.777)
<i>Observations</i>	104,405	104,405	104,405	104,405

Note. Reference category for young business entrepreneurs, solo entrepreneurs and employer entrepreneurs is wage workers

Robust standard errors in parentheses clustered by country

***p<0.01, **p<0.05, *p<0.1