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The impact of entrepreneurial orientation on firm performance: a comparative study of Finnish and German SMEs

SME Business Management

Master's thesis

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Entrepreneurship
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Abstract

This thesis examines the impact of entrepreneurial orientation (EO) and its individual dimensions of innovativeness, risk-taking and proactiveness on the performance of small-to-medium sized enterprises (SMEs). It does this in a cross-cultural setting by comparing EO and its dimensions and their performance implications between Finnish and German firms. The cultural comparison is based on Hofstede's culture dimensions.

There are three main objectives in this paper. The first one is to determine, if the levels of EO and its individual dimensions differ between the SMEs of the two countries of interest. Second, the paper aims to find out, if EO and especially its individual dimensions positively influence SME performance. Third, the paper aims to determine if there are differences between the Finnish and German SMEs in how EO and its dimensions impact performance. The cross-cultural comparisons of EO are scarce, and this study answers for the call of several researchers to increase understanding in this field.

The literature review of the thesis combines the research of EO, its individual dimensions and their performance implications as well as culture. It also aims at creating an intersection of these different topics. Based the literature, a conceptual framework is created. This framework combines the concepts of culture, EO and its dimensions as well as firm performance.

The examination of the relationships based on the conceptual framework is done by means of quantitative methods such as factor analysis, comparison of means, and hierarchical multiple regression. The findings of the thesis based on these methods suggest that the SMEs of both countries exhibit rather high levels of all dimensions of EO. However, the Finnish SMEs exhibit higher levels of innovativeness, proactiveness and EO than their German counterparts, whereas there is no significant difference in the levels of risk-taking. Additionally, innovativeness emerges as the most significant contributor to firm performance in the SMEs of both countries, even so that the impact of innovativeness alone is higher than that of the combined EO concept. Finally, no significant difference between the strength of the impact on performance with any of the dimensions can be found between the Finnish and German firms.

Keywords: entrepreneurial orientation, cross-cultural comparison, SME performance

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Entrepreneurship
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Yrittäjäorientaation vaikutus yrityksen menestykseen: vertaileva tutkimus suomalaisten ja saksalaisten pk-yritysten välillä

Tiivistelmä

Tämä pro gradu – tutkielma tarkastelee yrittäjäorientaation ja sen yksittäisten dimensioiden (innovatiivisuus, riskinotto ja proaktiivisuus) vaikutusta pk-yritysten menestykseen. Tutkielma keskittyy tähän vaikutussuhteeseen maiden välisellä vertailevalla tutkimuksella tarkastelemalla yrittäjäorientaation ja sen dimensioiden suhdetta yritysten menestykseen suomalaisten ja saksalaisten yritysten välillä. Maiden vertailu perustuu kulttuuriin, ja se tehdään käyttämällä avuksi Hofsteden luomia kulttuurin ulottuvuuksia.

Tämän tutkielman tavoitteena on selvittää, eroavatko yrittäjäorientaation ja sen dimensioiden tasot yritysten välillä suomalaisissa ja saksalaisissa pk-yrityksissä. Lisäksi tavoitteena on selvittää, vaikuttavatko yrittäjäorientaatio ja sen dimensiot yritysten menestykseen. Tutkielma pyrkii myös vertailemaan suomalaisia ja saksalaisia yrityksiä, jotta voidaan päätellä, ovatko yrittäjäorientaation ja sen dimensioiden vaikutukset samankaltaiset molemmissa maissa. Yrittäjäorientaatioon liittyvät maiden väliset vertailevat tutkimukset ovat erittäin harvinaisia, joten tämä tutkielma pureutuu aiheeseen, johon monet tutkijat ovat kaivanneet lisäselvennystä.

Tutkielman kirjallisuuskatsaus yhdistää tutkimusta yrittäjäorientaatioon ja sen yksittäisiin dimensioihin liittyen, sekä kattaa näiden aspektien vaikutukset yritysten menestykseen yhdistettynä kulttuurillisiin tekijöihin. Kirjallisuuskatsauksen tavoitteena on myös yhdistää näitä jokseenkin erillisiä tutkimuskenttiä. Katsaus toimii pohjana luotavalle käsitteelliselle viitekehykselle. Tämä viitekehys yhdistää kulttuurin, yrittäjäorientaation dimensioineen, sekä yrityksen menestyksen.

Tutkimus perustuu luotuun käsitteelliseen viitekehykseen, ja analyysi tehdään kvantitatiivisin menetelmin perustuen faktorianalysiin, keskiarvojen vertaamiseen sekä hierarkkiseen monimuuttujaiseen regressioanalyysiin. Tutkielman tuloksista voidaan havaita, että molempien maiden pk-yritysten innovatiivisuuden, riskinoton ja proaktiivisuuden tasot ovat melko korkeita. Suomalaisten yritysten innovatiivisuuden, proaktiivisuuden ja yrittäjäorientaation tasot ovat korkeampia kuin saksalaisten, kun taas riskinoton suhteen maiden välillä ei ole eroa. Innovatiivisuus havaitaan merkittävimmäksi positiiviseksi tekijäksi yritysten menestyksen kannalta molemmissa maissa, jopa niin, että sen vaikutus on suurempi kuin yrittäjäorientaation vaikutus kokonaisuudessaan. Maiden väliltä ei löydetä merkittävää eroa siinä, miten suuresti nämä tekijät vaikuttavat yritysten menestykseen.

Avainsanat: yrittäjäorientaatio, maiden välinen vertaileva tutkimus, pk-yritysten menestys

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1 INTRODUCTION

1.1 BACKGROUND

My interest in and the choice of the research topic for this thesis was initiated during my exchange semester in the University of Cologne in spring 2011. I met there Junior Professor Thorsten Semrau from the corporate development department and he was involved in a project examining entrepreneurial orientation (EO) among other topics. This was interesting to me because I had considered concentrating on EO, and now got offered an opportunity to take part in this project, in which also some German students were involved. Additionally, I have specialized in international aspects in my studies, and additionally, Germany as a country and the German language have been of interest for me for a long time. Participating in this project allowed me to combine my two topics of interest: entrepreneurship and international business, and apply my previous knowledge from these fields as well as learn more about the specific features of such concepts as EO.

When it comes to the field of research relevant for this thesis, entrepreneurship is said to be one of the most important factors advancing economic growth (Suzuki, Kim and Bae, 2002) as it creates new opportunities of work, enlarges the range of goods and services provided, and increases national affluence and competitiveness (Zahra, 1999). Entrepreneurial small-to-medium sized enterprises (SMEs) have been for long recognized as the major engine of economic growth (Henderson and Weiler, 2010). Understanding the factors affecting the growth of these firms is of high relevance both politically as well as economically due to the major role of these firms both in job creation as well as in revenue generation (Valliere, 2006).

In order to grow and succeed in today's rapidly changing business environment, companies regardless of their size need to constantly seek for new opportunities, to which possessing an EO has been recognized as potentially beneficial (Wiklund and Shepherd, 2005). EO involves the willingness to innovate, take risks to try out new products, services and markets, and act more proactively than competitors when it comes to new opportunities in the marketplace (Covin and Slevin, 1991). Due to the potential benefits of EO, it has become a central concept in the field of entrepreneurship

and received a significant amount of attention both among researchers and practitioners (Covin, Green and Slevin, 2006).

As the usefulness of EO has been identified by academics, there has been a continuously increasing stream of literature concentrating on the concept and especially its impact on firm performance in companies of different sizes (e.g. Covin and Slevin, 1991; Wiklund, 1999; Keh, Nguyen and Ng, 2007; Stam and Elfring, 2008; De Clercq, Dimov and Thongpapanl, 2010). Many studies have been able to find a positive relationship between EO and performance, but the results are still mixed (Rauch, Wiklund, Lumpkin and Frese, 2009). As the results regarding the EO-performance relationship are not clear and because EO is a resource consuming strategy (Covin and Slevin, 1991), there is need for more studies that concentrate on firms of certain kind and try to achieve a better understanding about the effects of EO. This approach can provide more insight into when adopting an EO may actually be beneficial.

The researchers of entrepreneurship have also come to understand the value of culture for the research field. In the increasingly globalizing society of today, understanding the impacts of culture on entrepreneurship become more important because it is useful to understand whether same kinds of policies and approaches work in different countries and whether culture plays a key role in impacting the levels of entrepreneurship within a culture (Thomas and Mueller, 2000). Due to this, the inclusion of cultural factors in the study of entrepreneurship has been one of the trends in the field (e.g. Hyrsky and Tuunanen, 1999; Mitchell et al., 2002; Suzuki, Kim and Bae, 2002). However, when it comes to comparing EO across cultures, the research is very scarce. There is need for increasing the understanding of EO across cultures to track different impact mechanisms of EO and its implications on firm performance between countries. These kinds of studies may also help in separating factors that entrepreneurs possess regardless of their cultural background as opposed to those features that are culturally bound. This information may also be helpful for international companies operating in multiple countries because it may provide with guidance in whether same kinds of approaches towards EO are worthwhile in different countries or whether such an approach just consumes resources without adding value.

In the following chapters of this thesis, the concentration will be on the concept of EO, its dimensions and their implications on young SME performance in two countries: in Finland and in Germany. EO will be decomposed into its dimensions to more closely analyze the impacts of these single dimensions on performance. This approach also allows me to compare the scores of EO dimensions between the two countries to increase the understanding about the role of culture for EO. The comparison between the firms of the two countries will be based on Hofstede's culture dimensions that describe national cultures, because the firms are embedded in and thus impacted by their national cultures (Thomas and Mueller, 2000).

The purpose of this thesis is to determine what kind of a role culture plays in affecting the concept of EO and its dimensions and to see whether EO or any of its dimensions play a role in improving performance. Thus, this thesis will contribute to the discussion of the relationship between EO and performance in general and additionally add value to the scarce research in the area of combining culture and EO.

1.2 DEFINING CONCEPTS

As entrepreneurship creates the basis for understanding the essence of EO, defining it needs to be the starting point. In this thesis the definition best describing the essence of entrepreneurship is that of Shane (2003), in which he has combined the views of Venkataraman (1997) and Shane and Venkataraman (2000). Shane (2003, p. 4) defines entrepreneurship as "an activity that involves the discovery, evaluation, and exploitation of opportunities to introduce new goods and services, ways of organizing, markets, process, and raw materials through organizing efforts that previously had not existed". Entrepreneur, on the other hand, is here defined as an individual initiating an entrepreneurial event, starting a venture (Gartner, 1985; Brockhaus, 1987).

There are two popular ways of defining EO. The main difference is that according to Miller (1983) as well as Covin and Slevin (1988), EO consists of innovativeness, risk-taking and proactiveness, whereas Lumpkin and Dess (1996) regard EO as five-dimensional with two additional dimensions of autonomy and competitive aggressiveness. In this thesis the three-dimensional definition of Covin and Slevin (1988) will be adopted. According to Covin and Slevin (1988), "the entrepreneurial

orientation of a firm is demonstrated by the extent to which the top managers are inclined to take business-related risks (the risk-taking dimension), to favour change and innovation in order to obtain a competitive advantage for their firm (the innovation dimension), and to compete aggressively with other firms (the proactiveness dimension) (Miller, 1983)" (p. 218). The three-dimensional approach will be used in this thesis because it has been more widely adopted in the research field, which improves the comparability of this thesis to existing research. Furthermore, it has been suggested that the introduction of the two additional dimensions does not add much value to EO (Kreiser, Marino and Weaver, 2002) and that these dimensions do not contribute to improved performance (Hughes and Morgan, 2007). Additionally, EO will be perceived as a multi-dimensional concept, which means that its dimensions exist independently from each other and can thus also vary independently (Lumpkin and Dess, 1996).

When it comes to defining entrepreneurship and EO, it is also important to understand the difference between the two, because despite of being closely related, entrepreneurship and EO are still two separate concepts. Lumpkin and Dess (1996) define entrepreneurship as new entry that explains what entrepreneurship is composed of. EO, on the other hand, describes the way a new entry is undertaken (Lumpkin and Dess, 1996). Thus, entrepreneurship answers to the question "what entrepreneurship consists of", whereas EO describes "how new entry is undertaken" (Lumpkin and Dess, 1996, p. 136). Based on this distinction, EO is nowadays mostly treated as a process that describes how entrepreneurs behave in creating their new entry. This new entry can refer to a completely new firm, a new market, or to a new product or technology. (Miller, 2011)

The third central concept in this thesis is culture. In this thesis, similar to many other researchers interested in the impacts of culture in the entrepreneurship context (e.g. Lee and Peterson, 2000; Thomas and Mueller, 2000; Kemelgor, 2002; Kreiser, Marino and Weaver, 2010), Hofstede's (1980; 2001) dimensions of culture will be used in hypothesizing about differences between Finnish and German SMEs. Thus, it is also reasonable to adopt Hofstede's definition of culture. Hofstede (1981, p. 24) defines culture as "the collective programming of the human mind that distinguishes the members of one human group from those of another. Culture, in this sense, is a system

of collectively held values." People express culture through the values they have about life and the world surrounding them. These values affect their perceptions about the behavior most suitable and efficient for a certain situation. (Adler, 1997)

1.3 RESEARCH GAP AND PROBLEM

The impact of EO on firm performance is a widely studied topic within the field of entrepreneurship, but the results vary from a strong positive relationship to no significant direct relationship between the two (Rauch, Wiklund, Lumpkin and Frese, 2009). Due to the lack of consistency in the outcome of the previous studies, and especially because adopting an EO requires resources (Covin and Slevin, 1991; Hughes and Morgan, 2007), there is need for more studies to determine in which context an EO may be beneficial. Additionally, most of the studies with one identifiable exception (Hughes and Morgan, 2007) have only measured EO as a whole and have not tested the relationship of its individual dimensions and performance. Because it has, however, been suggested that all the dimensions of EO may not always be beneficial for firm performance (Lumpkin and Dess, 2001; Hughes and Morgan, 2007), value will be added by increasing the understanding of the effects of EO and its dimensions by also looking at the impact of the single dimensions on SME performance.

Despite of the fact that the impact of cultural factors on generating successful entrepreneurs has been recognized (e.g. Lee and Peterson, 2000), there are only few studies comparing entrepreneurship in different cultural settings and even fewer that actually concentrate on comparing EO across cultures. Only two studies have been identified (Kemelgor, 2002; Domke-Damonte, Fausltich and Woodson, 2008) that examine EO in more than one culture. Due to the scarce research in this area, Wiklund and Shepherd (2005) call for research of EO in different business cultures and Slevin and Terjesen (2011) encourage researchers to engage in cross-cultural comparative studies of EO. In addition, also Kemelgor (2002), who adopted a case approach in his study, calls for enlargening the sampling frame in future studies, which is what is goinf to be done in this study that is based on a larger survey.

The two existing comparative studies of EO are those of Kemelgor (2002) and Domke-Damonte, Faulstich and Woodson (2008), and only Kemelgor (2002) has concentrated

on the performance implications of EO as well. Based on the requirements of cross-cultural comparative research that will be discussed in the methodological chapter (Chapter 6), both of these studies seem to have deficiencies in the methodological approach or at least the description of it. These deficiencies are more significant in the case of Domke-Damonte, Faulstich and Woodson (2008), because they do not discuss the requirements of a cross-cultural comparison at all prior to the analysis of the results, and thus do not address the comparability of the cases chosen for the study. Thus, this thesis can contribute to the scarce research of cross-cultural comparison of EO both firstly by conducting a study of this nature and secondly by providing a thorough preview of the requirements of a cross-cultural study and following it through in the actual research process.

Comparing Finnish and German SMEs in the study is interesting because Germany is Finland's second biggest trading partner both in exports and imports (Statistics Finland, 2012b). Thus, the analysis of similarities and differences between the SMEs of the two countries may lead to improvements in the trading relationships between these two countries and especially help new ventures in understanding the mindset of the plausible future trading or cooperation partners. This may help in optimizing the cooperation and mutual learning.

On the other hand, the results of this thesis may also provide young internationalizing firms with more information about a foreign market place and increase understanding in whether those approaches working in the home country would also work in the foreign environment. It is also interesting to see, whether some true differences are revealed because based on Hofstede's (1980) culture dimensions, the cultural groundings of the two countries are not very far from each other and also the prerequisites of entrepreneurship seem to have many similar features based on the Global Entrepreneurship Monitor (GEM) (Kelley, Bosma and Amorós, 2011). Furthermore, if something significant and interesting can be found in the relationship between the Finnish and German SMEs, this may function as encouragement for others to conduct similar research in other country comparison settings.

In sum, considering how widely the general EO-performance relationship has been studied (Rauch, Wiklund, Lumpkin and Frese, 2009), this thesis can contribute to the literature of EO in three different ways. Firstly, more findings can be provided to the general EO-performance relationship discussion where the results heretofore have been mixed. Secondly, the approach of this thesis of also analyzing the relationship between the individual EO dimensions and performance is something close to unique (only the study of Hughes and Morgan (2007) seems to have adopted this approach before). Thus, this point of view can lead to interesting results concerning both the individual dimensions as well as EO as a whole. Thirdly, this thesis will contribute to a very scarce stream of literature by simultaneously looking at the cultural aspect and the EO-performance relationship, where Kemelgor (2002), Wiklund and Shepherd (2005) as well as Slevin and Terjesen (2011) have called for additional research.

Firstly, to advance the understanding of EO in cross-cultural settings and to provide insight into the trade between Finnish and German firms, the first research question is formulated as follows:

1) *How do Finnish and German SMEs differ when it comes to the EO and its individual dimensions?*

Secondly, to contribute to the discussion about the EO-performance relationship and to provide this field with some new perspectives through concentration on the individual EO dimensions, the second research question addresses the following:

2) *Can a general positive relationship between EO, its dimensions and performance be found?*

Thirdly, to bring a new angle to the cross-cultural research of EO, the third research question addresses the following issue:

3) *Are there differences between the SMEs of the two countries in how the EO dimensions impact performance?*

These research questions will guide the research and the approach to it through the following parts of this thesis.

1.4 OUTLINE OF THE STUDY

This thesis consists of eight chapters. This introductory Chapter 1 has provided with the general setting of the topic, the most central concepts of the study, the directions of previous research and the gabs in the field, as well as the research questions of interest. Chapter 2 concentrates on the previous literature and development of entrepreneurship and EO. In Chapter 3, the discussion moves on to the studies regarding the relationship between EO, its dimensions and firm performance, after which Chapter 4 concentrates on the relationship between culture and entrepreneurship as well as EO. Chapter 5 then summarizes all the preceding information and develops a conceptual as well as an analytical framework for the study. Chapter 6 describes the methodology of the study after which Chapter 7 includes the results and analysis. The final chapter returns to the key questions of the study and discusses the main findings, their implications and the theoretical contribution.

2 ENTREPRENEURSHIP AND ENTREPRENEURIAL ORIENTATION

This chapter gives an overview of the essence of entrepreneurship and EO. First, it describes entrepreneurship and its importance. It then moves on to EO and the different key features, such as the dimensions, of it. Finally, the chapter ends with a discussion about the comparative studies that have been conducted within the field of EO.

2.1 ENTREPRENEURSHIP

Entrepreneurship has become one of the most popular areas of research in management studies (Landström, 2005). As mentioned in the introduction, Shane's (2003, p. 4) definition of entrepreneurship as "an activity that involves the discovery, evaluation, and exploitation of opportunities to introduce new goods and services, ways of organizing, markets, processes, and raw materials through organizing efforts that previously had not existed" will be adopted. The reason for choosing this definition is that it can be regarded as supporting the concept and dimensions of EO. As Lumpkin, Brigham and Moss (2010) state, innovativeness can be linked to a firm's ability to discover potential opportunities, whereas proactiveness refers to the competency to evaluate and exploit them. The whole notion of organizing resources that have not existed before includes the idea of need for risk-taking (Lumpkin, Brigham and Moss, 2010). In addition, Shane´s (2003) definition also covers opportunities from discovery to exploitation, which can be seen as the starting point of utilizing the dimensions of EO that are on the focus of this study.

The concept of entrepreneurship has been studied both from an individual (e.g. Gimeno, Folta, Cooper and Woo, 1997) as well as from a corporate point of view (Covin and Slevin, 1991; Zahra and Garvis, 2000). In this thesis the focus is on the founders of the SME firms, who are also regarded as to represent the view of the firm (Wiklund, 1998; Frese, Friedrich and Unger, 2005). This level of analysis was chosen because it seems to be a common way of capturing the EO of the firm in young SMEs. This is because the actively involved founder is the key decision-maker in the business and thus represents the views and orientations of the company (e.g. Wiklund, 1998; Krauss, Frese, van Gelderen and Ombach, 2000; Wiklund and Shepherd, 2003; Frese Friedrich and Unger, 2005). Thus, this approach in a way combines the individual and corporate point of

view when the founder as an individual represents the orientations of the firm as a whole.

2.2 ENTREPRENEURIAL ORIENTATION

EO has been considered a valid concept in the field of entrepreneurship, because it is an efficient tool for acquiring evidence of entrepreneurial actions and decision-making across multiple organizational and geographic contexts (Kemelgor, 2002; Kreiser, Marino and Weaver, 2002). These features also make it an interesting concept for this comparative study between the SMEs of the 0two countries. EO as a driving force behind entrepreneurial activities has become a central theme of the discipline of entrepreneurship (Covin and Wales, 2011; Wales, Monsen and McKelvie, 2011). During the past 20 years it has become the most widely adopted measure of entrepreneurial behavior (Runyan, Ge, Dong and Swinney, 2011).

On a general level, EO demonstrates a firm's organizational processes, methods, and styles that it uses to act entrepreneurially (Lumpkin and Dess, 1996). Thus, the process of entrepreneurship is emphasized over the actors behind it, which puts entrepreneurship in a management framework (Wiklund, 1999). EO has been studied in different kinds of organizations ranging from micro firms to large multinationals and with different kinds of ownership structures (Covin and Wales, 2011). Many researchers argue that entrepreneurial behavior is crucial for the success of firms regardless of their size (Miller, 1983; Covin and Slevin, 1988; Lumpkin and Dess, 1996).

Lumpkin and Dess' (1996) argument that new entry, which is seen as an entrepreneurial action, is a firm-level event, also supports the general view of the usefulness of entrepreneurial behavior. However, also a single entrepreneur can be regarded as a firm, because that person is taking care of the new entry activities (Lumpkin and Dess, 1996). Similarly, Wiklund (1998) argues that in small firms the firm's strategic orientation reflects the strategic orientation of the CEO. Krauss, Frese, van Gelderen and Ombach (2000) support this view by stating that in the early stages of a business, the founder(s) decide on the new hires and have a huge impact on whether the firm will turn into a success or not.

EO has been studied from many different aspects. The most extensive stream of research is concentrated on the impact of EO on performance both directly under different strategies and environments as well as indirectly moderating or moderated by many other factors (e.g. Becherer and Maurer 1998; Jantunen, Puumalainen, Saarenketo and Kyläheiko, 2005; Wiklund and Shepherd, 2005; Rauch, Wiklund, Lumpkin and Frese, 2009). Additionally, there are studies for instance about the antecedents of EO examining the psychology of the founders and managers (e.g. Begley and Boyd, 1987; Stewart, Watson, Carland and Carland, 1999), environmental (e.g. Becherer and Maurer, 1997) as well as organizational influences (e.g.; Green, Covin and Slevin, 2008), and the origin of EO (e.g. Yang and Dess, 2007). Also the connection of EO to company resources and capabilities has been studied (Smart and Conant, 1994; Dess, Lumpkin and Covin, 1997).

Despite of the large amount of studies examining EO, there are still various debates about it, the forces driving it, its appearance and about the connection between EO and performance (Miller, 2011). One of the topics of the ongoing debates is the definition of EO. There is no one widely accepted conceptualization of this latent construct by the scholarly community, but rather different degrees of acceptance for certain conceptualizations (Covin and Lumpkin, 2011).

Different well-known definitions that have been used for EO are those of Miller (1983) or Covin and Slevin (1988) on one hand, and that of Lumpkin and Dess (1996) on the other hand. As discussed already in the definition section of Chapter 1, Covin and Slevin's (1988) definition of EO will be adopted. This definition is based on the aspects of innovativeness, risk-taking and proactiveness. Lumpkin and Dess (1996), on the other hand, describe EO as the "propensity to act autonomously, innovate, take risks, and act proactively when confronted with market opportunities" (p. 137). These definitions represent the two most widely used bases for perceiving an EO at least in terms of the relevant dimensions. Based on the views of Miller (1983) and Covin and Slevin (1988), EO consists of three dimensions, which are innovativeness, risk-taking, and proactiveness, whereas Lumpkin and Dess (1996) perceive EO to consist of five dimensions, which in addition to the ones of Miller (1983) are autonomy and competitive aggressiveness.

There are two fundamental reasons for why a definition of EO based on only the three initial dimensions of innovativeness, risk-taking and proactiveness was chosen to be used in this thesis. The first reason is that there are more studies, which have adopted only the three dimensions. Thus, using this definition improves the comparability of the results of this study. Moreover, in their analysis of the EO dimensions, Kreiser, Marino and Weaver (2002) suggest that the introduction of the two newer dimensions does not add much value to EO, which supports the three-dimensional approach. Additionally, when examining the different dimensions separately, the three initial ones have been shown to have the strongest link to firm performance (Hughes and Morgan, 2007), which also supports excluding autonomy and competitive aggressiveness.

2.2.1 Dimensions of entrepreneurial orientation

As stated in the previous section, Covin and Slevin's (1988) three-dimensional definition of EO is adopted and it is treated as a multi-dimensional construct. Thus, this subsection presents those dimensions of innovativeness, risk-taking and proactiveness in more detail after which it discusses the multi-dimensionality of EO.

Innovativeness

According to Lumpkin and Dess (1996), Schumpeter (1934; 1942) was one of the first to highlight the role of innovation in the entrepreneurial process. Schumpeter (1942) describes a process of "creative destruction" (p. 83), where wealth creation occurs through disruption of existing market structures due to introduction of new goods and/or services that cause resources to move away from existing firms to new ones thus allowing the growth of the new firms. Lumpkin and Dess (1996) argue that the process of creative destruction is initiated by an entrepreneur, which makes innovation an important success factor within EO. Furthermore, this link between entrepreneurship and innovativeness is supported by the results of Shane, Kolvereid and Westhead (1991), who found that innovation is among the key motives to start a business.

Lumpkin and Dess (1996) state that "innovativeness reflects a firm's tendency to engage in and support new ideas, novelty, experimentation, and creative processes that may result in new products, services, or technological processes" (p. 142). Innovativeness refers to willingness to move forward from existing technologies or practices and

explore beyond the current borders (Kimberly, 1981) and shows that a firm is putting effort into introducing new products to the market (Zahra, 1993). Thus, innovativeness is vital for maintaining a firm's viability because it is the source of ideas that lead to improvements and new products and thus helps in sustaining a thriving firm (Lumpkin, Brigham, and Moss, 2010).

Innovativeness is also of high importance because as the markets nowadays change in a rapid pace, maintaining competitive advantage is crucial. Innovativeness can be a key to this, because it can be a source of significant progress and growth for a firm. (Dess and Lumpkin, 2005)

As innovativeness plays a key role in the construct of EO, its importance in this study becomes even greater. This is due to the fact that, as will later be shown in this thesis, innovativeness is a culturally bound concept, which suggests that its levels and impacts across cultural barriers may differ. Thus, looking at innovativeness in two different cultural settings may reveal something new about its role and significance.

Risk-taking

Risk-taking entails the willingness to pursue opportunities that have a substantial likelihood of producing losses or significant performance discrepancies (Morris, Kuratko and Covin, 2008). Risk-taking is normally associated with entrepreneurship because the concept of entrepreneurship in its original form includes the assumption of personal risk-taking (Lumpkin and Dess, 1996). On firm level, risk-taking refers to the tendency to support projects with uncertain expected returns (Walter, Auer and Ritter, 2006).

According to Dess and Lumpkin (2005), organizations and their executives face three types of risk, which are business risk, financial risk, and personal risk. Business risk refers to the risk of entering untested markets, or committing to unproven technologies (Baird and Thomas, 1985; Dess and Lumpkin, 2005). Financial risk is related to heavy borrowing or committing a significant amount of resources for growth (Baird and Thomas, 1985; Dess and Lumpkin, 2005). Firms with an EO often engage in risky activities, such as high leveraging and large resource commitments in the desire of

gaining high returns by pursuing opportunities in the market (Lumpkin and Dess, 1996). Finally, personal risk is related to a person, normally an executive, who decides to favor a certain strategic course of action. The risk here stems from the influence the executive has on the direction of the company, which can in case of failure also lead to personal consequences. (Dess and Lumpkin, 2005)

In the context of business, in practice all business endeavors entail some degree of risk (Lumpkin and Dess, 1996). What, however, is important to remember, is that risk-taking is not gambling in the context of EO (Dess and Lumpkin, 2005), but moderated and calculated (Morris, Kuratko and Covin, 2008). Thus, it does not refer to extreme and completely uncontrolled risky endeavors (Morris, Kuratko and Covin, 2008) even though the consequences of an act cannot be known (Dess and Lumpkin, 2005). The consequences of different opportunities are examined and different scenarios created in order to decrease the level of risk (Dess and Lumpkin, 2005).

Similarly to innovativeness, also risk-taking seems to be affected by national culture (e.g. Morris, Davis and Allen, 1994). As it is an important dimension of EO, it is interesting to look at the levels and impacts of risk-taking in two different cultural settings. This chain of impact is something that previous studies have not widely discussed in a comparative sense and can thus contribute to the research.

Proactiveness

Liebermann and Montgomery (1988) state, that first-mover strategy is the best strategy for capitalizing on a market opportunity. If a firm spots an opportunity in the market and is the first to act upon it, it can make abnormal profits and benefit from brand recognition (Lumpkin and Dess, 1996). Thus, proactiveness, which refers to taking initiative, anticipating and carrying out new opportunities, and creating new markets or participating in emerging ones, is also associated with entrepreneurship, and is an important dimensions of EO (Entrialgo, Fernandéz and Vázquez, 2000; Walter, Auer and Ritter, 2006).

According to Lumpkin and Dess (1996), proactiveness is significant for EO because of its forward-looking perspective. A proactive firm is able to identify possible emerging

problems and find solutions for them (Dess and Lumpkin, 2005). Due to this, proactiveness can be key for competitive advantage, because competitors need to respond to the successful initiatives of the pioneer (Dess and Lumpkin, 2005). The pioneer may also succeed in locking in customers due to high switching costs (Smith, Ferries and Grimm, 2001).

According to Venkatraman (1989), proactiveness is not just about what is seen in the future in terms of new products and opportunities. Venkatraman (1989) proposes that proactiveness refers to processes aimed at foreseeing and acting on future needs by searching for new opportunities which may relate to present operations or differ from them. Thus proactiveness can refer to the introduction of completely new products and brands before competitors, and also to eliminating those operations which have turned or are turning unprofitable. Thus, based on Venkatraman's (1989) view, it is also a part of proactiveness to continuously critically evaluate the existing parts of the business.

How willing people are to take initiative and seek for new opportunities, is at least partially dependent on their cultural heritage. When it comes to proactiveness, there are not many studies discussing this feature among different cultures. Thus, it is interesting to see in this thesis, if the levels and impact of this dimension differ between the two country settings where the firms are studied.

2.2.2 Uni- vs. multi-dimensionality

There are two principal conceptualizations of EO in the past research (Covin and Lumpkin, 2011; George and Marino, 2011). These are the composite, uni-dimensional approach most commonly associated with the works of Miller (1983) and Covin and Slevin (1989), and the multi-dimensional approach associated with Lumpkin and Dess' (1996) work. These conceptualizations differ from each other in whether the EO dimensions vary independently or not (Covin, Green and Slevin, 2006).

The underlying idea behind the composite or uni-dimensional approach to EO is that in order to have an EO, a firm needs to simultaneously be risk-taking, innovative and proactive and all of these dimensions need to equally contribute to a firm's overall EO (Kreiser, Marino and Weaver, 2002). This indicates that when EO is considered uni-dimensional, its dimensions co-vary with each other, and an increase in EO requires an

increase in all of the dimensions (George and Marino, 2011). Furthermore, this means that the construct of EO cannot be decomposed to its dimensions, because if that would be done, EO would cease to exist (Covin, Green and Slevin, 2006).

According to the multi-dimensional view initially presented by Lumpkin and Dess (1996), on the other hand, the dimensions of EO exist independently from each other. Thus, they may also vary independently. Therefore, based on this view, EO exists either as a set of independent behavioral scores with a range from low to high across the dimensions, or as a collective profile or composition formed by these dimensions. (Covin and Lumpkin, 2011) According to Lumpkin and Dess (1996), even though all dimensions may be present in a new entry situation, a firm can have an EO when only some of the factors are operating. How well these dimensions explain the nature and success of a new entry, is affected by both internal and external factors, such as the business environment and organizational culture (Lumpkin and Dess, 1996).

The uni-dimensional view has been criticized as being too restrictive (Lumpkin and Dess, 1996) and it has been argued that the dimensions of EO may each have a differential influence on key outcome variables such as performance (Lumpkin and Dess, 2001). Thus, adopting a multi-dimensional view has been regarded as an opportunity to enhance theory building (Dess, Lumpkin and McGee, 1999) and allow drawing conclusions that are less limited in nature (Kreiser, Marino and Weaver, 2002). There is also empirical support for the claim that the EO dimensions can vary independently (Kreiser, Marino and Weaver, 2002; Runyan, Ge, Dong and Swinney, 2011). Thus, due to the support for the multi-dimensional construct of EO as well as due to the comparative nature of this study, the multi-dimensional view of EO will be adopted. As Kreiser, Marino and Weaver (2002) argue, utilization of separate measures may offer more precision in research. Thus, the possible differences between Finnish and German SMEs can be analyzed in more detail when each dimension and its impact on performance can be looked at separately.

2.3 COMPARATIVE RESEARCH OF ENTREPRENEURIAL ORIENTATION

Because this study is comparative in nature, it is important to look at the field of EO studies from the perspective of comparativeness. As mentioned in Chapter 1, only two

articles have been indentified where a cross-cultural comparison of EO has been conducted. These are Kemelgor's (2002) case-type comparison of selected firms in the Netherlands and USA, and Domke-Damonte, Faulstich and Woodson's (2008) analysis concerning students' self-perceptions about EO in Germany and USA. In addition, there is one study comparing entrepreneurship in Silicon Valley and Japan (Suzuki, Kim and Bae, 2002) and another one concentrating on the comparison of innovativeness and risk-taking of entrepreneurs and small business owners in the USA and in Finland (Hyrsky and Tuunanen, 1999). There are also studies discussing on a broader scale, how entrepreneurship can be measured and compared in different cultural settings (e.g. Kreiser, Marino and Weaver, 2002), but the nature of these studies differs from the approach and goals of this thesis.

The more comprehensive one of the two comparative studies of EO is that of Kemelgor (2002). He compared corporate EO in a case setting between four firms in the Netherlands that were matched with their major competitors in the USA. Kemelgor (2002) used, similar to the approach in this thesis, Hofstede's cultural dimensions, and selected Netherlands and USA due to their comparable value orientations, which indicate that the countries have similar cultural core values (Kemelgor, 2002). However, Kemelgor (2002) also discusses the most significant difference, namely, that USA is a doing-oriented culture whereas the Netherlands is a being-oriented one. He states that this may have an impact on EO because it is more likely that people from a being-oriented culture are not willing to engage in high levels of self-management.

When composing the theoretical framework of the study as a whole, Kemelgor (2002) names a firm's corporate culture as a critical contributing factor to its strategic management practices and states that the corporate culture is mediated by the societal culture within which the company operates. This approach is somewhat similar to this study in the sense that here the concentration is on the societal cultures as this that is where the firms are embedded. Based on this discussion, it can be stated that Kemelgor (2002) has paid some attention to the important aspects of comparative research when choosing the units of analysis.

In the research design part of his article, Kemelgor (2002) discusses the comparative study research frame to some extent. He describes how he chose a small sample size because it allows making an in-depth analysis. Furthermore, he also used the same survey approach in both countries and utilized back-translation for the survey questions. Finally, he ensured the equivalence of the measures as well as internal consistency in the two countries through factor analysis and by measuring the Cronbach's alphas. However, it can be regarded as a shortcoming in terms of the comparative study that Kemelgor (2002) does not hypothesize about the possible impacts of culture, but only discusses the possible reasons for the differences in cultural terms in the final analysis regarding the results. In the earlier parts of the study he only states that the Dutch and American cultures are mainly comparable and the biggest difference is that of doing- vs. being-orientation. Thus, Kemelgor (2002) gives some attention to the comparability of the cases by discussing it and making procedures to enhance the comparability of the results, but the approach is still not comprehensive.

Domke-Damonte, Faulstich and Woodson (2008), do not create a solid basis for the comparative research frame in their study. They made separate calculations for Germany and USA and then compared the results with each other. They set the ground with only a short discussion about Hofstede's cultural dimensions and some factors about the economic situation in the two countries. Furthermore, equivalence was to a large extent ignored, because Domke-Damonte, Faulstich and Woodson (2008) decided to only provide the survey in English regardless of the mother tongue of the respondent.

Not taking the special features of the comparative research frame into account leads to vagueness, because even if the actual comparison starts only after the data collection, it is important that the specific needs of a cross-cultural comparison are borne in mind once planning the research in terms of questionnaire development and other factors. (Leung, 2008) This is the only way to make sure that the results can actually be compared in a reliable manner. Due to this, it is peculiar that Domke-Damonte, Fausltich and Woodson (2008) spend almost no time on discussing the actual comparability of the results.

Based on the discussion of this section, the few existing comparative studies seem to be of varying quality, and especially based on Domke-Damonte, Faultich and Woodson's (2008) article, there is room for additional contribution. All in all it seems that Kemelgor's (2002) general approach to a comparative study can be used as a starting point in terms of how to generally approach a comparative study, what to analyze and what kinds of aspects to take into account. However, there is also room for more accurate discussion about the requirements of conducting cross-cultural research and Chapter 6 will cover literature regarding that issue.

In sum, as has been shown in this chapter, the definitions of entrepreneurship and EO are not straightforward and a researcher always needs to make choices. Furthermore, it clearly seems to that due to the scarcity of cross-cultural comparative studies in the EO field and due to their varying quality, there is need for comparative studies carried out with diligence in this field.

3 ENTREPRENEURIAL ORIENTATION AND PERFORMANCE

This chapter describes studies about the impact of EO on performance. First, it discusses the importance of studying this relationship. In the first section, it moves on to studies about the sustainability of the EO-performance relationship, after which it describes literature in which some moderating factors for the EO-performance relationship have been taken into account. In the following section, the chapter concentrates on the meta-analysis conducted regarding EO and its performance implications. In the final section the chapter discusses studies about the relationship between the individual dimensions of EO and their impact on performance.

Covin and Slevin (1991) suggest that the reason as to why there has been a growing interest in research in the area of entrepreneurship is because there is a belief that entrepreneurship can lead to improved performance in both new and established organizations. Due to rapid changes in the current business environment, where both product and business model life cycles get shorter and future profits from existing operations are uncertain, firms need to continuously look for new opportunities (Hamel, 2000; Rauch, Wiklund, Lumpkin and Frese, 2009) and develop more entrepreneurial strategies (Hitt, Ireland and Hoskisson, 2003). Thus, it may be beneficial to adopt an EO, because entrepreneurial strategies are regarded as being related to better firm performance (Kraus and Kauranen, 2009; Rauch, Wiklund, Lumpkin and Frese, 2009).

Hitt, Ireland, Camp and Sexton (2002) discuss how entrepreneurial strategies are based on the identification of opportunities and can help in developing opportunities into competitive advantages. The reason as to why an EO is seen as a possible positive force behind performance is related to the first-mover advantages as well as to the tendency to utilize emerging opportunities implied by EO (Wiklund, 1999). Zahra and Covin (1995) state that firms with an EO are able to target premium market segments, charge higher prices, and “skim” the market because they are ahead of their competitors. However, it is important that the impact of EO on performance is researched, since according to Covin and Slevin (1991), adopting an EO is a resource consuming strategy and requires significant investments.

3.1 SUSTAINABILITY OF THE ENTREPRENEURIAL ORIENTATION - PERFORMANCE RELATIONSHIP

One of the areas of interest within the EO-performance research has been the sustainability of this relationship. In these studies the scholars have concentrated on the direct relationship between EO and performance, which makes them relevant to this thesis study, where also the direct EO-performance relationship is of interest.

According to Zahra and Covin (1995), a proactive firm is able to introduce new products and services to the market ahead of its competitors, can get a dominant position in distribution channels due to first-mover advantages, and can establish industry standards. Therefore the firm should be able to gain a sustained rather than short-term competitive advantage and thus higher performance (Zahra and Covin, 1995). Furthermore, Zahra and Covin (1995) argue that because the learning from the product and market strategies accumulates over time, it might take some time to realize the full impact of EO on performance.

Zahra and Covin (1995) investigated the sustainability the EO-performance relationship over a seven-year period. They collected data from mature U.S.-based firms with size ranging from medium to large. The data collection was realized through interviews with the company executives as well as from secondary sources such as company publications and annual reports.

Zahra and Covin (1995) found a positive EO-performance relationship that increased over time thus supporting the assumption of the sustainability of this relationship. Based on this result, Zahra and Covin (1995) argue that the attitude towards EO should be patient because it takes some time to experience the full benefits of it. Thus, it should not be regarded as a quick fix, but rather as a long term strategy.

In addition to the positive general EO-performance relationship, Zahra and Covin (1995) also found that the benefits of adopting an EO are larger in hostile than benign environments and that EO and environmental hostility have a joint impact in determining financial performance. Thus, firms should also consider their business environment when deciding how many resources to put into adopting an EO.

Similar to Zahra and Covin (1995), Wiklund (1999) also investigated the sustainability of the EO-performance relationship. In his longitudinal panel study, Wiklund (1999) chose to look at a shorter time frame than that of Zahra and Covin (1995) by examining small Swedish firms from manufacturing, service and retail industries during three consecutive years. Data were collected through interviews and questionnaires that were sent to the firms' managing directors.

In line with Zahra and Covin (1995), also Wiklund (1999) found a positive impact of EO on performance that increased over time. Thus, he also argues for EO as a useful strategy and shows that it is not just a short-term means to improve performance. He further posits that because EO can have a positive impact on a long term, it is worthwhile also for SMEs to use their scarce resources in adopting it. There is, however, one shortcoming in Wiklund's (1999) study that requires attention. Namely, that the availability of financial capital had a stronger impact on performance than did EO, which suggests that, the role of resources is significant for an SME. However, as Wiklund (1999) investigated SMEs instead of large firms, the conclusions of this study may be generalizable to this thesis.

3.2 MODERATORS OF THE ENTREPRENEURIAL ORIENTATION - PERFORMANCE RELATIONSHIP

Lumpkin and Dess (1996) argue that the relationship between EO and performance is likely more complex than just a main-effect-only, and that there are other aspects internal and external to the company that help to better understand this relationship. The internal factors can be such as organizational structure and culture, whereas external factors can be related for instance to the industry, the life cycle stage of a product or market, and to governmental regulation (Zahra and Covin, 1995). Many scholars have followed Lumpkin and Dess's (1996) suggestion of more carefully investigating possible internal and external moderators and factors impacting the EO-performance relationship.

In this thesis any moderating factors are not directly taken into account, but the impact of national culture is considered to see, whether it works in explaining differences in EO and the EO-performance relationship. Thus, it is worthwhile having an understanding of

what different scholars have found when it comes to the moderating factors and to also see what kind of an impact these moderators may have. Because of this, the following sub-chapters will now cover some central studies of this specific topic and concentrate on those, where the investigated firms have some similar features to those in the focus of this study. Additionally, a larger amount of articles have been analyzed within this field to gain a broad understanding of the research field. The main findings about this research can be found in Figure 1, which covers the articles discussed in sections 3.2 and 3.3 as well as other articles that have been concentrated on during this research project, but which have not been covered in this thesis in more detail.

3.2.1 Single moderator approach

Wiklund and Shepherd (2003) examined the internal side of firms by looking at knowledge-based resources. The target companies were Swedish SMEs operating in manufacturing, wholesale/retail and service industries, and the data was collected from the CEOs of the companies with means of telephone interviews and mail questionnaires. As Wiklund and Shepherd (2003) studied SMEs from Finland's neighboring country, used a key informant approach and the industry concentration was similar, the generalizability of the results should be on an appropriate level.

The data for independent and control variables were collected in 1997, and the data for the dependent ones in 2000. The collection was executed this way firstly to give the performance effects of knowledge-based resources and EO some time to materialize, and secondly to reduce the problem of reverse causality.

Importantly to this thesis, Wiklund and Shepherd (2003) examined the direct EO-performance relationship first before proceeding to more complicated relationships. They found a positive direct relationship between EO and performance. In addition, based on their results, EO functions as a moderator between knowledge-based resources and firm performance. This indicates that EO can help explaining why some companies have managerial processes that enable them to better utilize their resources and forecast the changes in the market (Wiklund and Shepherd, 2003). Thus, the resources as such do not lead to better performance, but it is the ability to utilize these resources through an EO that is important in explaining firm performance.

Keh, Nguyen and Ng (2007) chose a different internal moderating factor as they examined the impact of EO and marketing information on SME financial performance among Singaporean firms with less than 100 employees. The firms represented different industries, but retail/ sales and service industries were dominant. Majority of the firms had less than 35 employees and the age was skewed towards more established firms. Thus, the size of the companies in Keh, Nguyen and Ng's (2007) study is quite close of that in this thesis, but the firms are more established.

Keh, Nguyen and Ng (2007), collected the data through a questionnaire, which was sent either via e-mail or regular mail to the business owners, who were the target respondents. Similar to e.g. Zahra and Covin (1995) and Wiklund (1999), Keh, Nguyen and Ng (2007) found a significant and positive direct relationship between EO and financial performance. Furthermore, they also found that acquisition and utilization of information about competitors and customers in terms of marketing mix decisions partially mediates the EO-performance relationship. This indicates that entrepreneurs with an EO can improve their firm financial performance by actively engaging in acquisition of information and utilizing this information in planning their marketing strategies. Acquiring and utilizing the information about customers can help in more efficient segmentation and in finding new segment markets. Combining information about customers' expectations and competitors' moves is useful in keeping the first-mover advantage, and the general acquisition and utilization of information can help in better risk-management by reducing uncertainty. Thus, information acquisition and utilization contribute to a more efficient use of all the three dimensions of EO. (Keh, Nguyen and Ng, 2007)

3.2.2 Configurational approach

Instead of concentrating on only one moderating factor at a time, there are also studies, which have taken a configurational approach and simultaneously considered multiple moderators of the EO-performance relationship. Wiklund and Shepherd (2005) did this when they investigated Swedish small businesses from knowledge-intensive manufacturing, labor-intensive manufacturing, professional services, and retail industry in a longitudinal study. The data were collected from the managers of the firms through telephone interviews. During the first year of study, the data collection comprised both

independent and control variables, and one year later the data concerning the dependent variable was collected.

Wiklund and Shepherd (2005) found a universal positive effect of EO on small business performance thus supporting the common understanding of the EO-performance relationship. However, they also found that, as suggested by e.g. Lumpkin and Dess (1996), relying on this direct relationship only does not provide the full picture of the relationship. Interestingly, as opposed to e.g. Zahra and Covin (1995), Wiklund and Shepherd (2005) were not able to find evidence for the claim that environmental dynamism moderates the EO-performance relationship in a contingency model. This relationship only turned significant when the configurational approach including access to capital was adopted. Wiklund and Shepherd (2005) found a three-way interaction between EO, access to capital, and environmental dynamism suggesting that the relationship between EO and performance can be best explained when all these factors are simultaneously taken into account.

The results of Wiklund and Shepherd (2005) indicate that EO can be used as means of overcoming environmental and resource constraints. However, the relationship found was different from that one expected. Even though EO had a positive impact on performance in all kinds of environments and regardless of the level of access to capital, the effect was biggest in firms that were operating in stable environments and had only limited access to capital. Thus Wiklund and Shepherd's (2005) finding is different from that of Zahra and Covin (1995), who found that EO works better in hostile environments. Wiklund and Shepherd (2005) argue that the reason for this somewhat surprising finding deviating from the traditional view may lie in the resource based logic. If the market conditions are stable, EO can better function as a differentiation mechanism between firms because it can provide with a competitive advantage. (Wiklund and Shepherd, 2005)

3.2.3 Summarizing meta-analysis of entrepreneurial orientation studies

As the number of studies about the EO-performance relationship had increased significantly, Rauch, Wiklund, Lumpkin and Frese (2009) advanced the research in the area by conducting a meta-analysis of previous studies. After an extensive screening

they identified 51 studies with sufficient information for the meta-analysis. The results support the assumption that EO has a positive moderately large impact on performance, as the corrected correlation between these two amounted to 0.242.

In addition to finding evidence for the EO-performance relationship, Rauch, Wiklund, Lumpkin and Frese (2009) found that as suggested by many researchers, there are some moderators for the EO-performance relationship. One of these moderators is the industry. The finding was that high-tech industries seem to benefit more from pursuing an EO than do firms in non-high-tech industries. This is a rather intuitive finding, as the changes in a high-tech business environment are likely to be more rapid than in a non-high-tech one, thus suggesting a higher need for an EO.

Another moderating factor that was somewhat supported based on the analysis, was the size of the firm. The impact of EO on performance was stronger in micro businesses with 1-49 employees than in small businesses with 50-499 employees, but there were no differences between micro and large firms or between small and large firms. Thus, any definite conclusion on the effect of size could be drawn based on the results of this study.

Figure 1 summarizes the discussion about the EO-performance relationship and as discussed in the beginning of section 3.3, it also covers the main findings of studies not discussed in more detail in this thesis to provide wider evidence regarding the EO-performance relationship. Overall, most of the researchers have been able to find a positive EO-performance relationship that gets stronger over time and many moderating factors have been found to strengthen the relationship. What makes the field of study and the interpretation of results highly challenging, is the fact that almost every study differs from another in terms of the moderating factors chosen. This makes it highly challenging to draw conclusions about what factors play the most significant role. Furthermore, also the operationalizations of performance and in some cases also of EO differ, which decreases consistency. EO is mainly treated as a uni-dimensional construct and measured only as a whole. This is what makes this study different from most of those presented, as here the dimensions are examined also individually.

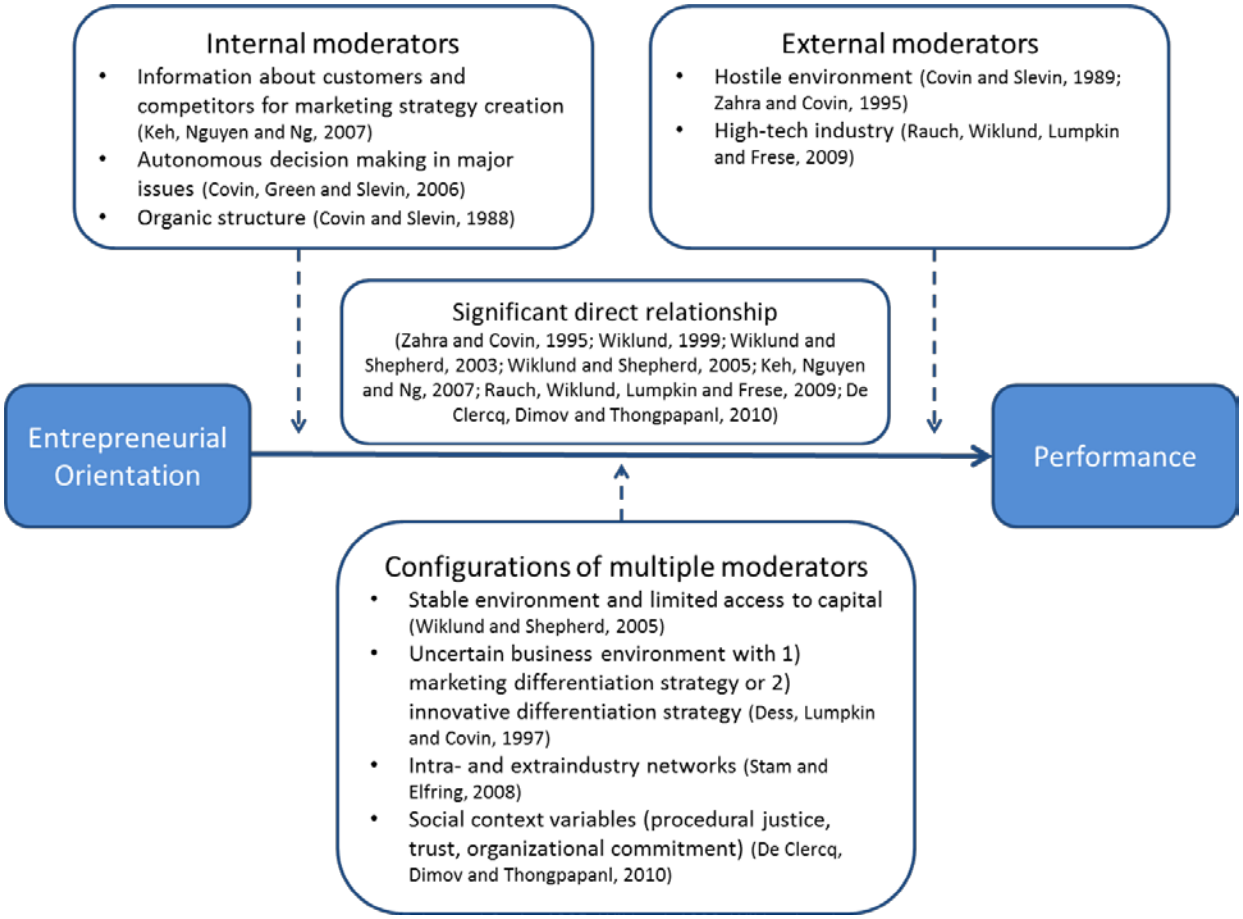

Figure 1: Summary of research results regarding the entrepreneurial orientation - performance relationship

The above-mentioned lack of multi-dimensional studies may cause problems in comparing the results of this thesis to other studies. Furthermore, due to this difference, the impacts each dimension may have on EO based on this literature, cannot be described in closer detail. To increase understanding about this topic, the next section will present different studies regarding the single impacts of the EO dimensions on performance. At this point, it can only be stated that as each of the dimensions have been proven to be valid parts of the EO construct, which has further been proven to have a positive impact on firm performance, each of the dimensions should also have a positive impact on firm performance. Because the research regarding the impacts of the single items is still scarce, this thesis can provide additional value and more insight into how the different dimensions impact the EO-performance relationship and also give more understanding about the country differences and their significance in this relationship.

3.3 THE IMPACT OF ENTREPRENEURIAL ORIENTATION DIMENSIONS ON PERFORMANCE

Because the EO studies presented in the preceding sections 3.2 and 3.3 measure the impact of EO on performance by considering EO as a uni-dimensional construct and thus do not take the individual impact of the dimensions into account, this needs to be covered separately. Considering the relationship of the individual dimensions and performance will help to more robustly justify the hypotheses that will follow. Thus, the following subsections will concentrate on the impacts of each EO dimension on performance separately.

3.3.1 Innovativeness and performance

Hughes and Morgan's (2007) study is the only one regarding the EO-performance relationship that has been identified, where the impacts of the single EO dimensions on performance have actually been measured. Hughes and Morgan (2007) collected data through a mail survey, where the managing directors of the firms were used as key informants. The data consisted of emerging young high-technology firms that were located at business incubators in the U.K. The median age of these firms was 2.5 years and they employed 6 people on average, which makes this study setting rather close to the one in this thesis, which is likely to increase comparability.

Hughes and Morgan (2007) measured innovativeness by asking about finding new ways of doing things, creativity in operation methods, and active introduction of innovations in the business. Business performance was operationalized through customer performance and product performance. Customer performance was measured by examining, how effective the firm had been at attracting, retaining and sustaining customers and gaining repeated orders. Product performance was evaluated based on the relative success of the firm's products in generating sales and achieving market share.

Hughes and Morgan (2007) found that innovativeness has a positive impact on product performance, but there was no significant relationship between innovativeness and customer performance. They argue that innovativeness is important for firms in their early stages of development, because it helps them to create novel competitive offerings and thus meet the needs of the market. By doing this, the firms are more likely to get a

foothold in the market, which is crucial in ensuring long-term success. (Hughes and Morgan, 2007)

Hult, Hurley and Knight (2004) used a sample of Fortune 500 industrial companies to investigate if innovativeness influences firm performance. The marketing managers of the firms were used as key informants, and approached with a mailed questionnaire. Hult, Hurley and Knight (2004) found a strong positive relationship between innovativeness and performance. They also hypothesized that there would be a difference in this relationship in markets with low and high turbulence, but were not able to find evidence for this. This suggests that innovativeness is among the key factors influencing firm performance despite of how turbulent the market is. Of course, it needs to be borne in mind that Hult, Hurley and Knight (2004) only investigated large industrial companies, so the results may not be directly applicable to other types of firms in other industries such as the ones in this study.

Verhees and Meulenberg (2004) investigated the innovativeness-performance relationship in small rose-growing firms in the Netherlands. A small firm was defined as being under the direct supervision and control of the owner. Because the control of the owner was used as a criterion for inclusion in the study, the owner was also the informant and this person's innovativeness represents the innovativeness of the firm. This is similar to the view taken in this thesis where the founders are used as key informants and their view is perceived to represent the view of the company.

Verhees and Meuleuberg (2004) used both archival and self-reported data. The self-reported data were collected through a questionnaire that was mailed to the rose growers. Innovation was measured based on two different categories. The first one of these was general innovativeness, which included questions about experimenting with new ways of doing things and trying new things in the company. The second category was domain-specific innovativeness, which was measured by asking about willingness to try new things compared to competitors. Both of these categories received high reliability measures. Performance was measured through such factors as relative product price and overall performance and profitability.

Based on their measures of innovativeness and performance, Verhees and Meulenberg (2004) found that the innovativeness of the small business owner has an impact on firm performance. However, the results are based on a very specific industry, which may restrict their generalizability. It may still be possible that the results hold in other small businesses, such as the firms of this study, where the owner is actively involved.

3.3.2 Risk-taking and performance

When it comes to the relationship between risk-taking and performance, researchers have found mixed evidence. Hughes and Morgan (2007) evaluated risk-taking based on perceptions towards the term risk-taking and calculated risk, as well as based on a statement about exploration in business activities. Surprisingly, Hughes and Morgan (2007) found that risk-taking had a negative impact on product performance and no impact on customer performance. They argue that the reason for this finding may be that because risk-taking is normally costly due to competitor responses, it may lead to drift and wastage of resources as firms in their early stages do not have the coordination mechanisms in place to direct the risk-taking behavior in the best possible way. They suggest that risk-taking may be beneficial for more mature companies, but do not see it as beneficial at the embryonic stage.

Aaker and Jacobson (1987) studied the role of risk in explaining differences in business unit profitability. They utilized the Profit Impact of Market Strategies (PIMS) data base and the final data consisted of strategic business units (SBUs) of well-established large firms. The SBU is defined as a business unit within a firm selling a distinct set of products to an identifiable group of customers and competing with a clearly identifiable set of competitors. Aaker and Jacobson (1987) divided risk into two parts: systematic and unsystematic risk. Systematic risk was measured by beta values, whereas unsystematic risk was measured by the standard error of unsystematic return. Performance was measured based on return on investment.

Aaker and Jacobson (1987) found that both systematic and unsystematic risk have a positive impact on return on investment. However, despite of both being significant, systematic risk had a stronger impact on return on investment than unsystematic risk. Even though these results may not be directly generalizable to SMEs, they may still

have some similarities as the measurement is done on the SBU level rather than on the corporation level. Of course these SBUs are still likely to have more resources available than SMEs.

In a more recent study, Gilley, Walters and Olson (2002) examined the impact of top management team (TMT) risk-taking propensity on firm performance. The data was collected through a mailed survey questionnaire answered by the top executives of small to large firms from 16 different industrial sectors. Risk-taking was measured by combining items to two factors of general risk-taking and product/process risk-taking. Performance was operationalized through a wide range of measures. These measures were then divided into three categories of financial performance, innovation performance and stakeholder performance.

Gilley, Walters and Olson (2002) found that a combined measure of product/ process and general risk-taking has a positive impact on all three performance categories. Thus, it can be argued that firms with TMTs that are willing to take risk are able to achieve superior levels of both financial and non-financial performance. (Gilley, Walters and Olson, 2002) The firms measured in this study are rather large in size, which may restrict the generalizability to SMEs. However, the fact that the TMTs were used as respondents may increase similarity with SMEs and this study, in which the founders and owners are used to represent the firm values.

All in all, it can be stated that there seem not to be much research when it comes to the impact of risk-taking on performance in small firms and it is challenging to evaluate how well the results concerning bigger entities can be generalized to smaller firms. Furthermore, the results seem to be highly contradictory. Thus, this thesis can shed some light on this area.

3.3.3 Proactiveness and performance

Hughes and Morgan (2007) measured proactiveness based on taking initiative, opportunity recognition, and initiating actions to which other organizations respond. They found that proactiveness has a positive impact on both customer performance and product performance. Hughes and Morgan (2007) posit that proactiveness plays an important role in firms at their embryonic stage because proactive behaviors are key in

securing future performance. Proactiveness helps firms in anticipating market changes and acting accordingly, which allows the firms to have a strong position in shaping the competition in the market over time. This will in turn lead to improved performance. (Hughes and Morgan, 2007)

Lumpkin and Dess (2001) investigated the impact of proactiveness on firm performance in non-diversified and non-affiliated firms in Southwestern USA. They measured proactiveness based on questions about the firm's tendency to lead rather than follow in the development of new procedures and technologies, the introduction of new products or services, and about the tendency to act in anticipation of future changes and needs. Performance was operationalized through sales growth, return on sales, firm performance over the last three years compared to competitors, and an average of net and gross profit.

Lumpkin and Dess (2001) found that proactiveness had a positive impact on each of the performance measures. Furthermore, they found that the positive impact was stronger in early stage industries, which suggests that proactiveness has an important role especially in the introduction and growth stage of an industry's life cycle. When taking the role of environment into account, Lumpkin and Dess (2001) further found that the proactiveness-performance relationship was strongest in a dynamic business environment, but that there was also a positive relationship in a hostile environment. When considering these results, however, it needs to be taken into account that the results are based on a $p<0.10$ significance level. Even though other studies before have used the same level, it still is not optimal as usually the level of $p<0.05$ is required.

When it comes to the relationship between proactiveness and performance, these two studies of Hughes and Morgan (2007) and Lumpkin and Dess (2001) were the only ones identified. Both of these studies have come into a conclusion that proactiveness positively impacts performance especially at the early stages of the firm development, but the evidence cannot be claimed to be extensive. Thus, this thesis can contribute to the scarce research in this specific matter as well.

As can be seen based on the literature in this chapter, the evidence about the impacts of the separate dimensions of EO on performance, at least as studied within one research

setting, is not abundant. It, however seems, that both the individual dimensions as well as the EO construct as a whole have a positive impact on performance and this impact can be explained to a larger extent when different moderators are taken into account.

4 IMPACTS OF CULTURE ON ENTREPRENEURSHIP AND ENTREPRENEURIAL ORIENTATION

This section discusses the link between culture, entrepreneurship and EO. It first addresses the question of why culture plays an important role in the research of entrepreneurship and EO. Secondly, it covers Hofstede's cultural dimensions after which it continues with their relation to the dimensions of EO. Finally, the chapter describes the levels of Hofstede's cultural dimensions in Finland and Germany.

4.1 LINK BETWEEN CULTURE AND ENTREPRENEURSHIP

As mentioned in the introductory part of the thesis, Hofstede's (1981) definition of culture is adopted. According to this definition culture is "the collective programming of the human mind that distinguishes the members of one human group from those of another. Culture, in this sense, is a system of collectively held values." (Hofstede, 1981, p. 24) It is important to consider culture when examining entrepreneurship and EO because as Lee and Peterson (2000) state, entrepreneurship develops in a manner, where culture gives rise to entrepreneurial potential. Cultural values indicate how a society responds to entrepreneurial behaviors such as risk-taking (Hayton, George and Zahra, 2002). It is important to know, what kinds of aspects have an impact on entrepreneurship and EO, because the cultural values of a nation are either a supportive or hindering factor for an EO (Lee and Peterson, 2000). Furthermore, because entrepreneurship is a significant source of economic growth (Birley, 1987), it is important to understand the impact of culture on it.

When considering the relationship between culture and entrepreneurship, the level of entrepreneurship within a country may not be directly related to the cultural foundations of that country. Entrepreneurship rather depends on the unique composite of cultural factors, such as attitudes, values, and behaviors, that together either foster or hinder EO. (Lee and Peterson, 2000) Due to this, in addition to an otherwise favorable environment to entrepreneurship and individuals who are motivated to work towards e.g. individual fulfillment, achievement and career, the national culture needs to be supportive and encouraging for entrepreneurial activity (Lee and Peterson, 2000; Mueller and Thomas,

2001). Thus, the national culture is used as a basis also in this study to consider the behavior of SMEs that are embedded in their cultures.

Hofstede (1991), Geletkanycz (1997), and Mueller and Thomas (2001) argue that the views and attitudes of key decision makers in firms reflect the assumptions and values inherent in a culture. In addition, literature has linked individual behavior to the formation of EO on firm level (Miller, 1983; Lumpkin and Dess, 1996). Such an influence applies especially to the field of entrepreneurship, because the firms are rather small and the key decision makers have a large impact on strategic decisions and the orientation of the company (Covin and Slevin, 1991; Lumpkin and Dess, 1996). Because entrepreneurship starts from a spotted opportunity, and opportunities are located in the environment (Morris, 1998), the supportiveness of external environment has a great impact on the formation of entrepreneurship and an EO (Lee and Peterson, 2000). Thus, especially when the EO in two different countries is compared, the results of this comparison will be less complete if the impact of culture is not considered.

4.2 HOFSTEDE'S DIMENSIONS OF CULTURE

Hofstede (1980) describes cultural values as an interactive combination of features that impacts how a group of people reacts to its environment and thus differentiates group membership. He has identified five independent dimensions of national culture. This section will describe the foundations of these dimensions and discuss each of them in more detail.

Four of the five dimensions of culture discovered by Hofstede (1980) were identified based on a large research project for which data were collected at IBM, a large multinational corporation, through an employee attitude survey conducted in the 1970's. Since then, the results of this project have been confirmed by testing them based on multiple other data sets (Søndergaard, 1994). The data describe questions that are related to values, and can thus be represent a more permanent "mental programming" of the respondents (Hofstede, 2001, p. 48). Every person's mental programming consists of parts that are unique, and on the other hand of such parts that are shared with other people (Hofstede, 2001).

Even though the IBM data was collected some time ago, this should not have a distorting impact on the results. This is because countries were given scores on different cultural values not in absolute sense, but relative to other countries, and drastic changes in culture have been proved to be extremely slow. The dimensions identified are 1) power distance, 2) uncertainty avoidance, 3) individualism versus collectivism, 4) masculinity versus femininity, and 5) long-term versus short-term orientation. The last one of these, the long-term versus short-term orientation, however, was not identified from the original IBM dataset, but later on, in 1985 from a Chinese Value Survey. It has also been tested in other settings and proven valid. (Hofstede, 2001) Because of its later discovery, there is not as much literature available on the influence of the time orientation on aspects essential to entrepreneurship.

Even though the work of Hofstede has been criticized for not being adequate for describing differences in entrepreneurial activity between different countries (Busenitz, Gómez and Spencer, 2000), his work still is the most widely adopted in the study of cultural values and entrepreneurship (Hayton, George and Zahra, 2002). Hofstede's cultural dimensions have been used as a basis for studying cultures impact on entrepreneurship by e.g. Lee and Peterson, (2000), Mueller and Thomas (2001) and Kemelgor (2002). Moreover, Hayton, George and Zahra (2002) state that Hofstede's work presents a concise classification of key cultural dimensions that explain people's behavioral preferences thus making it a valid basis for a cross-country comparison. The next paragraphs will introduce Hofstede's culture dimensions.

Power distance

Power distance is related to how (in)equal people are within a culture, and its score describes people's attitudes towards these inequalities (Hofstede, 2001; 2011). Thus, power distance can be defined as the extent to which organizational and institutional members with less power within a country expect and accept the fact that power is not distributed equally (Hofstede, 2011). In cultures with high power distance, structures are created to be hierarchical and authority is concentrated to the hands of few. On the other hand, in cultures with low power distance, every individual's personal ability of decision-making is appreciated. (Hofstede, 2001)

Uncertainty avoidance

Uncertainty avoidance can be defined as the extent to which people within a certain culture feel threatened by unknown or unclear situations and have created beliefs and institutions that attempt to avoid these (Hofstede, 2011). In countries with high uncertainty avoidance, clear structures and rules and standardized operating procedures are preferred because they bring stability. On the other hand, in low uncertainty avoidance cultures, people are better able to accept unfamiliar situations and different ideas and approaches. Additionally, when the level of uncertainty avoidance is low, people are less resistant to change. (Hofstede, 2001)

Individualism versus collectivism

Individualism versus collectivism is related to how people within a culture mainly define themselves: as a group or as individuals, and how they live together (Hofstede, 2001; 2011). Thus, this dimension is defined based on how interdependent the members of a society are. In individualistic cultures people are concerned about their own and their family's well-being, whereas in collectivistic cultures people are members of groups that take care of them in exchange for loyalty. (Hofstede, 2011) High individualism indicates that individual decision-making is preferred over group consensus (Hofstede, 2001). Furthermore, individualism is associated with an "emphasis on individual initiative and achievement" (Hofstede, 1980, p. 235).

Masculinity versus femininity

Societies cope differently with the distinctiveness of sexes and the implications these have on roles within the society. This is what masculinity versus femininity refers to. The underlying factor is that women almost universally put more value on social factors, whereas men appreciate ego goals, such as career and money. (Hofstede, 2001) These differences lead to a distinctive fundamental question of how people are motivated. In a feminine society the quality of life and caring for others are regarded as signs of success, whereas a masculine society is driven by competition and achievement. (Hofstede, 2011) In feminine cultures work is seen as a necessity for living, whereas in masculine cultures work is in the center of life. (Hofstede, 2001)

Long- versus short-term orientation

Long- versus short-term orientation concerns the focus in people's lives: the efforts are either focused on the present or the future (Hofstede, 2001). Thus, the long-term orientation can be defined as the extent to which a society has a pragmatic perspective, which has its orientation in the future as opposed to a conventional historical short-term stance (Hofstede, 2011). In short-term oriented cultures, the focus in business life is on the business itself and on short-term results. What matters the most, is the bottom line. (Hofstede, 2001) Furthermore, there is a tendency to look at the present and past, which leads to appreciation of stability and tradition (Hofstede, 1993). In long-term oriented cultures, on the other hand, building relationships is considered important in business life, and market position is more important than the bottom line. (Hofstede, 2001) Emphasis is on the future, perseverance is appreciated, and the economic situation is closely watched (Hofstede, 1993; 2001), and it is commonly assumed that success requires adjustment and changes because of the dynamic nature of the environment (Geletkanycz, 1997).

4.3 DIMENSIONS OF ENTREPRENEURIAL ORIENTATION AND HOFSTEDE'S CULTURE DIMENSIONS

In order to see, what kinds of cultural features best support entrepreneurship and EO, this section discusses each dimension of EO related to Hofstede's culture dimensions. By doing this, it is easier to form a clear picture of what a supportive culture is like.

4.3.1 Innovativeness and Hofstede's culture dimensions

According to Shane (1993), individualism is related to an outward orientation and a belief in freedom. These are features that have been found to be supportive for innovation (Shane, 1993). Furthermore, there is more appreciation of freedom in individualistic cultures than in collectivistic ones, and freedom is a necessity for creativity (Shane, 1992). Supporting these arguments, Shane (1992; 1993) found that more innovations are created in individualistic cultures than in collectivistic ones. Also Mueller and Thomas (2001) found in their cross-cultural study of students in nine countries, that innovation occurs more frequently in individualistic cultures than in collectivistic ones. They justified this finding by arguing that innovativeness requires willingness to deviate from group norms, which requires individualism.

Shane (1993) hypothesized that masculine societies would have higher levels of innovation than feminine ones, because there are generally more rewards and recognition for performance in masculine cultures. Shane (1993) assumed that these aspects would encourage innovation, but was not able to find empirical evidence for the relationship. However, Hyrsky and Tuunanen (1999) found in their study of American and Finnish entrepreneurs and small business owners that women were more innovative than men, which suggests that feminine qualities may actually be supportive for innovativeness.

Mueller and Thomas (2001) hypothesized that because people in low uncertainty avoidance cultures are more broad-minded towards deviant behavior, it is easier for entrepreneurs in these cultures to earn freedom and legitimacy than for the entrepreneurs in high uncertainty avoidance cultures. Mueller and Thomas (2001) were also able to find statistical evidence for this proposition. Also Hyrsky and Tuunanen (1999) found support for this, as their findings suggest that U.S. entrepreneurs and small business owners exhibit somewhat higher levels of innovativeness than do their Finnish counterparts, who come from a more uncertainty avoidant culture. Additionally, in a similar manner, Shane (1993) found in a cross-national study, that rate of innovation was higher in countries with low uncertainty avoidance compared to those with higher uncertainty avoidance scores.

Shane (1993) posits that power distance represents five beliefs that limit innovation. These are centralization of power, control over subordinates, importance of hierarchy, vertical communication patterns, and resistance to change in distribution of power (Shane, 1993, p. 61). These factors discourage innovation because they reduce equality within organizations (Shane, 1993) and discourage communication between different levels or organizations (Shane, 1992). Shane (1992; 1993) also found empirical evidence for this proposition. Similarly, Knight (1987) found than there is a belief in innovating firms that anyone can become an innovation champion, which refers to a low power distance, because people are given the opportunity to express their thoughts and ideas. Shane (1995) came into a similar conclusion in his later study, where he found that there is more support provided for innovativeness in cultures with lower power distance.

According to Lumpkin, Brigham and Moss (2010), the more radical an innovation, the more time it normally takes to pay off. Also Bhidé (2000) supports this view by stating that innovativeness typically necessitates significant investments of resources and a long time period before the outcomes of the creative efforts and experimentation can be evidenced. Thus, Lumpkin, Brigham and Moss (2010) propose that a long-term orientation may make firms more tolerant to experimentations that do not pay off immediately. Furthermore, they also argue that if more time is given for creativity, the gained benefits may turn out to be more lasting and supportive of long-term goals. Thus, Lumpkin, Brigham and Moss (2010) suggest that a long-term orientation is more supportive to innovativeness than a short-term one.

To conclude, it seems that innovativeness would be supported by an individualistic, feminine and uncertainty avoidant culture, where power distance is low and the focus is mainly on the long term. In section 4.4 it will be shown, whether the Finnish and German cultures exhibit such features and thus support innovativeness.

4.3.2 Risk-taking and Hofstede's culture dimensions

Managers coming from individualistic cultures are typically more independent and autonomous than those coming from collectivist cultures (Morris, Davis and Allen, 1994). Individualistic managers are willing to detach themselves from group norms and get involved in situations that others may perceive too risky (Morris, Avila and Allen, 1993). Furthermore, in individualistic cultures, managers tend to value individual accomplishments more than their counterparts in collectivist cultures (Hofstede, 1980). Because managers see their own effort in the final results, they tend to engage in high levels of risk-taking in the hopes of significant payoff (Morris, Avila and Allen, 1993).

Managers in cultures with high masculinity have been found to score high on McClelland's (1960) need for achievement (Hofstede, 1980), which indicates willingness to engage in risk-taking. According to Hofstede (1980), decision-making is more rapid and done with less careful consideration in masculine cultures than in feminine ones. This would also suggest that masculinity is supportive for entrepreneurship and EO.

According to Hofstede (1980), a low level of uncertainty avoidance tends to encourage managers in developing willingness towards risk-taking. Also Thomas and Mueller (2000) as well as Kreiser, Marino, Dickson and Weaver (2010) argue for a strong connection between uncertainty avoidance and risk-taking. According to Marino, Dickson and Weaver (2010), risk-taking causes high levels of uncertainty in the outcomes, and thus managers need to be able and willing to cope with this ambiguity in strategic situations. Therefore managers in cultures with low uncertainty avoidance are more willing to engage in risk-taking, which was also empirically supported (Kreiser, Marino, Dickson and Weaver, 2010).

In cultures with high power distance, emphasis is put on maintaining one's current status (Hofstede, 1980), whereas in low power distance cultures people are willing to improve their position (Kreiser, Marino, Dickson and Weaver, 2010). According to Shane (1993), managers in low power distance societies are more willing to take risks with regards to improving their firms' current position in the industry. Thus, these managers are more likely to engage in risky strategies that offend the other players in the industry (Kreiser, Marino, Dickson and Weaver, 2010). This positive relationship between low power distance and risk-taking was also confirmed by the results of Kreiser, Marino, Dickson and Weaver (2010).

Lumpkin, Brigham and Moss (2010) argue that a long-term orientation may prevent a firm from taking actions that might risk its financial position. Moreover, if long-term survival is appreciated over profitability and growth, it is likely that the firms do not engage in risky activities. Thus, it is likely that a short-term orientation supports risk-taking. (Lumpkin, Brigham and Moss, 2010)

In sum, it seems that risk-taking may be best supported by an individualistic, masculine and uncertainty avoidant culture, where power distance is on a low level and the orientation is on a short term. In section 4.4, it will be shown, if these are typical features of the Finnish and German cultures.

4.3.3 Proactiveness and Hofstede's culture dimensions

When examining proactiveness, Morris, Davis and Allen (1994) found that individualism may inhibit proactiveness because tasks are not completed due to the

inability of individuals in cooperating with others who possess the expertise and necessary resources for implementation of the entrepreneurial concept. This indicates that firms in cultures with high individualism may not be able or willing to cooperate sufficiently in order to get the business running optimally.

Kreiser, Marino, Dickson and Weaver (2010) posit that there is a tendency in masculine societies to emphasize proactive behaviors. This is in line with Hofstede (1980) who states that firms in masculine cultures are more willing to create proactive strategies than those in feminine cultures, because they have a tendency to rapidly address strategic issues rather than leave them unresolved. Firms in masculine cultures tend to implement strategic moves aiming at creating and exploiting opportunities ahead of their competitors, which makes them proactive. As opposed to firms in masculine cultures, firms in feminine cultures are considered to be more likely to adopt a reactive strategy. (Hofstede, 1980)

It has been suggested that firms in low uncertainty avoidance cultures are more likely to behave competitively than firms in high uncertainty avoidance societies (Hofstede, 1980). According to Mueller and Thomas (2001), in cultures with low uncertainty avoidance, the underlying idea is that competition and conflict are useful and can be used in a constructive manner, whereas in high uncertainty avoidance contexts competition and conflict can be harmful and should thus be avoided. Additionally, entrepreneurs in cultures with low uncertainty avoidance are better in spotting opportunities in the surrounding world than entrepreneurs in high uncertainty avoidance cultures (Mueller and Thomas, 2001). Furthermore, according to Lieberman and Montgomery (1988), a more open-minded attitude towards the environment in low uncertainty avoidance cultures also increases firms' willingness to engage in first-mover actions. This relation of low uncertainty avoidance to proactiveness was also confirmed by the results of Kreiser, Marino, Dickson and Weaver (2010).

As power in countries with low power distance needs to be considered legitimate (Hofstede, 2001), firms try to differentiate themselves from their competitors by putting effort into improving their industry standing (Kreiser, Marino, Dickson and Weaver, 2010). In order to succeed in this competition, firms need to create strategies that allow

them to spot and exploit opportunities (Lumpkin and Dess, 2001). Kreiser, Marino, Dickson and Weaver (2010) found empirical evidence for the supportiveness of low power distance on proactiveness. This finding is also supported by the fact typically people in high power distance cultures are given detailed instructions with little autonomy in their interpretation. Thus, it can be assumed that it is not natural for people in such cultures to actively observe their environment and try to stay ahead of everyone else. (Hofstede, 2001)

A long time frame is often required to successfully pursue opportunities ahead of competitors (Ward, Leong and Boyer, 1994). This is because it is often necessary to engage in environmental forecasting and scanning to identify changes in the business environment and to anticipate demand. Firms that engage in these kinds of activities are proactive and make an investment into the future (Lumpkin, Brigham and Moss, 2010). Lumpkin, Brigham and Moss (2010) also argue that the benefit of utilizing a long-time orientation rather than a short one in terms of proactiveness may encourage pioneering behavior rather than imitation, which can lead to larger benefits in the long run.

In sum, it can be concluded that an individualistic, masculine and low uncertainty avoidant culture with low power distance and a long-time orientation is most supportive for proactiveness. Section 4.4 will show, whether Finland and Germany exhibit these features.

4.3.4 Entrepreneurial orientation and Hofstede's culture dimensions

To complete the discussion regarding the relationship between Hofstede's culture dimensions and EO and its dimensions, this subchapter concentrates on the most supportive mix of Hofstede's culture dimensions regarding EO.

Hayton, George and Zahra (2002) analyzed 21 empirical studies about the relationship between culture and entrepreneurship and came to a conclusion about the most popular view of a supportive mix of cultural dimensions to entrepreneurship. This mix is one with high individualism and masculinity and with low uncertainty avoidance and power distance. This combination is also supported by the literature covered above about Hofstede's cultural dimensions and their links to EO, even though there is some contradiction with certain dimensions.

Due to its later discovery, long-term orientation has not been included in any studies looking at all the different dimensions of culture simultaneously. However, based on the discussion above, it would seem that a long-term orientation would be more supportive for EO as it seems to support innovativeness (Bhidé, 2000; Lumpkin, Brigham and Moss, 2010) and proactiveness (Lumpkin, Brigham and Moss, 2010). The most typical findings of the supportive levels of Hofstede's dimensions are shown in Table 1. Concerning these levels, Hayton, George and Zahra (2002) state that with all other factors being equal, the larger the difference of a culture from this ideal mix, the lower the aggregate levels of entrepreneurship.

Table 1: Ideal levels of Hofstede's cultural dimensions for entrepreneurship

Cultural dimension	Supportive level for entrepreneurship
Individualism	High
Masculinity	High
Uncertainty avoidance	Low
Power distance	Low
Long- vs. short-term orientation	High

Now that there is an indication of what kind of a culture actually supports entrepreneurship, it is of interest to next compare these levels to those of Finland and Germany to see, if the bases in these countries are favorable for entrepreneurship.

4.4 HOFSTEDE'S CULTURAL DIMENSIONS IN FINLAND AND GERMANY

The levels of Hofstede's cultural dimensions can be seen in Figure 2. This figure shows that the cultural dimensions of these two countries are somewhat similar, but some differences also exist. The similarity in Finland and Germany can be seen especially when it comes to power distance, individualism and uncertainty avoidance. On the other hand, the biggest difference stems from the dimension of masculinity because Finland is clearly a feminine culture as opposed to the masculine culture of Germany. In terms of time orientation, the difference between the countries is not large, but the Finnish culture is somewhat more long-term oriented than the German one. However, both of the countries still belong to the category of short-term oriented cultures.

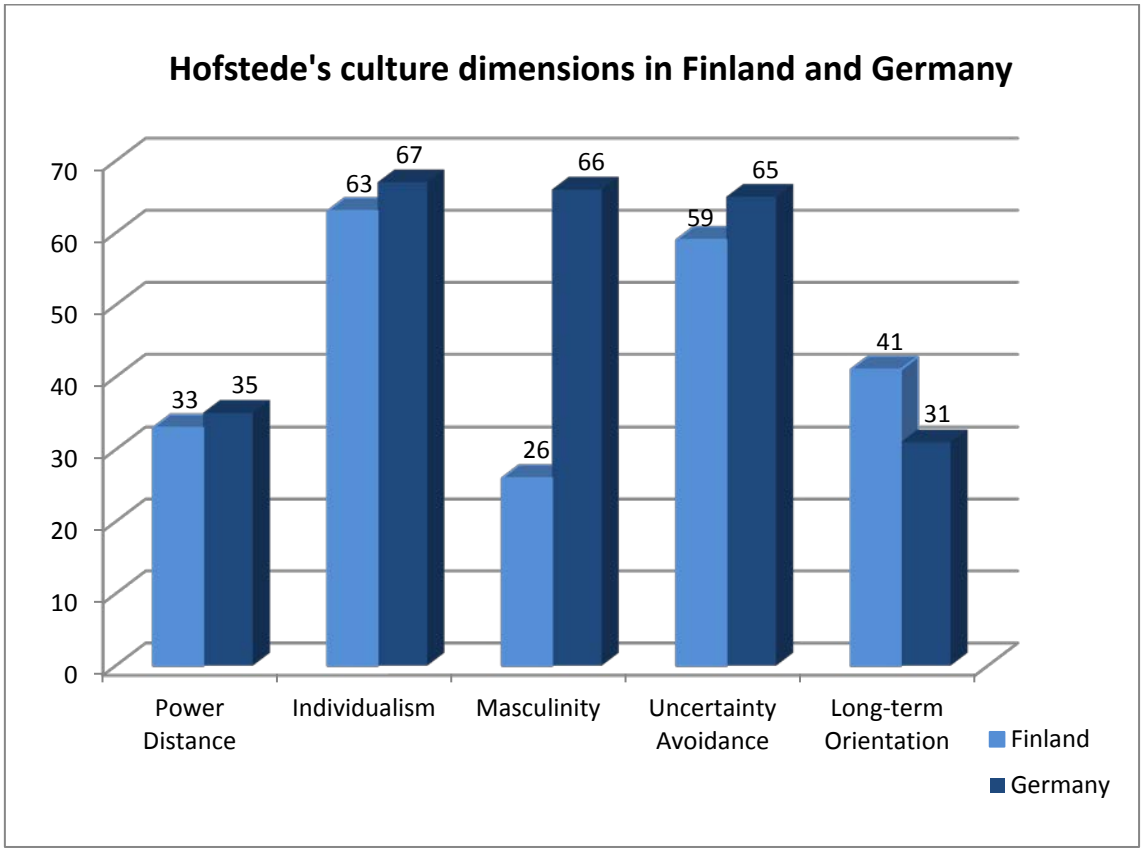

Figure 2: Hofstede's cultural dimension scores in Finland and Germany

Table 2 depicts the supportiveness of the Finnish and German cultures for entrepreneurship based on the levels of Hofstede's dimensions that were previously shown in Table 1. When the scores of Finland and Germany are compared to the ideal levels of Hofstede's dimensions concerning entrepreneurship, it can be seen that the levels of individualism and power distance are supportive for entrepreneurship in both countries. On the other hand, only Germany is a masculine culture, which is seen as a supportive quality for entrepreneurship. Finland scores medium high on uncertainty avoidance, which may be somewhat more supportive than the high level of Germany, even though the difference is not big. Finally, both cultures are short-term oriented, which seems not to be ideal.

Table 2: Hofstede's culture dimensions in Finland and Germany and their supportiveness for entrepreneurship

Cultural dimension	Finland	Germany
Individualism	High (63) **supportive**	High (67) **supportive**
Masculinity	Low (26) **not supportive**	High (66) **not supportive**
Uncertainty avoidance	Medium high (59)	High (65) **not supportive**
Power distance	Low (33) **supportive**	Low (35) **supportive**
Long- vs. short-term orientation	Short (45) **not supportive**	Short (31) **not supportive**

Based on the scores of both countries, it seems that neither of the cultures has the most ideal basis for an EO and that the countries are culturally quite close to each other. However, it also seems that there are differences that can lead to interesting findings in terms of EO, its dimensions, and performance.

4.5 ENTREPRENEURIAL ENVIRONMENT IN FINLAND AND GERMANY

In addition to discussing Hofstede's culture dimensions, it is also worth having a look at the general environment for entrepreneurship in the two countries of interest to gain a better understanding of the basis for entrepreneurship.

The underlying entrepreneurial environment in Finland and Germany is similar, as they both belong to the category of innovation-driven economies in the Global Entrepreneurship Monitor (GEM). In innovation-driven economies, entrepreneurial activities play a bigger role in advancing economic growth than do basic requirements of improving efficiency (Kelley, Bosma and Amorós, 2011). In addition to belonging to the same GEM category, Finland and Germany also seem to score quite similarly when it comes to entrepreneurial activities. According to GEM, in Finland 5.7% of the adult population was involved in early-stage entrepreneurial activities in 2010 (Stenholm, Heinonen, Kovalainen and Pukkinen, 2011) whereas the corresponding percentage in Germany amounted to 4.2 (Brixy, Hundt, Sternberg and Vorderwülbecke, 2011). Furthermore, the overall entrepreneurial activity in Finland and Germany amounted to 15.1% and 9.9% respectively in 2010 (Kelley, Bosma and Amorós, 2011).

In both countries, the image of entrepreneurship is positive. In Finland, according to 86.5% the respondents, successful entrepreneurs are respected and enjoy a good status within the society, and the corresponding number in Germany is 77.1%. Both of these

scores are high compared to the other innovation-driven economies such as the Nordic countries. (Kelley, Bosma and Amorós, 2011)

According to experts, both Finland and Germany have supportive conditions for entrepreneurship in terms of physical infrastructure and intellectual property rights (Brixy, Hundt, Sternberg and Vorderwülbecke, 2011; Stenholm, Heinonen, Kovalainen and Pukkinen, 2011). Additionally, supportiveness towards female entrepreneurship, existence of entrepreneurial opportunities, and innovation receptivity are mentioned in Finland (Stenholm, Heinonen, Kovalainen and Pukkinen, 2011). In Germany the conditions are supportive in terms of government support schemes and the availability of advisors and suppliers for new businesses (Brixy, Hundt, Sternberg and Vorderwülbecke, 2011). On the other hand, the school-based preparation for self-employment is named as the most negative aspect towards entrepreneurship in both countries (Brixy, Hundt, Sternberg and Vorderwülbecke, 2011; Stenholm, Heinonen, Kovalainen and Pukkinen, 2011).

The share of innovative early-stage entrepreneurial activity amounted to approximately 55% of all early-stage entrepreneurial activity in Finland and to approximately 51% in Germany in 2010 (Kelley, Bosma and Amorós, 2011). Both of these values are below the average among the innovation-driven economies (Kelley, Bosma and Amorós, 2011), which supports the earlier presented view that neither of the countries is ideally supportive for innovativeness from a cultural perspective.

When it comes to growth expectations, the German entrepreneurs seem to be more growth-oriented than their Finnish counterparts. When measured by the amount of jobs created within the next three years, in Finland 22% of the entrepreneurs expect to create at least 5 new jobs, whereas the corresponding number in Germany is 31%. Both of these numbers are below the average of the innovation-driven economies. However, in both countries the prospects to the future seem to be promising in the sense that the business environment is seen as more positive and with a rising curve after the recession. (Kelley, Bosma and Amorós, 2011)

When it comes to entrepreneurial exits, it seems that the economic recession has not had significant effect on them, as the business discontinuation rate is rather low in both of

the countries. In Finland the discontinuation rate was 1.8%, whereas in Germany it reached an even lower level of 1.5%. (Kelley, Bosma and Amorós, 2011)

To conclude, based on the entrepreneurial environments of the two countries, it can be stated that the overall situation for entrepreneurship in both countries is rather supportive. On the other hand, the biggest differences probably stem from the sizes of the home markets in these two countries as the Finnish population amounted to 5.4 million at the end of 2011 (Statistics Finland, 2012a) and the German population to 81.7 million (The World Bank, 2012).

In this chapter it has been described how culture sets the ground for people's behavior and thus needs to be considered in studying EO in a comparative setting. Hofstede's cultural dimensions have been covered to give a basis to the understanding about the comparative study conducted in this thesis. This understanding has then been deepened by creating links between these cultural dimensions and the dimensions of EO, after which some general information about the conditions of entrepreneurship in the two countries has been provided. By doing this, it has been possible to create an image of what kind of a cultural setting would best support EO and compare this to the scores of the two countries covered in this study.

5 FRAMEWORK OF THE STUDY

This chapter recapitulates the most central research regarding this thesis and forms hypotheses based on those research findings. The hypothesis formation is done in a separate chapter because this enables the best logical flow of hypotheses when findings regarding the general issues of Hofstede's culture dimensions impacting EO on one hand and EO's and its dimensions' relationship to performance on the other hand need to be combined. To clarify the setting of the research, the chapter first presents a conceptual framework for the study, and after having discussed the hypotheses and their reasoning, it will adapt this conceptual framework to an analytical framework that contains all the hypotheses in their cross-cultural form.

5.1 CONCEPTUAL FRAMEWORK

The conceptual framework is presented in Figure 3. It draws together the main concepts of this thesis: culture, EO, the dimensions of EO, as well as performance. The framework indicates that culture is expected to contribute to the demonstration of EO and its dimensions. The demonstration of these concepts is then further expected to have implications of firm performance.

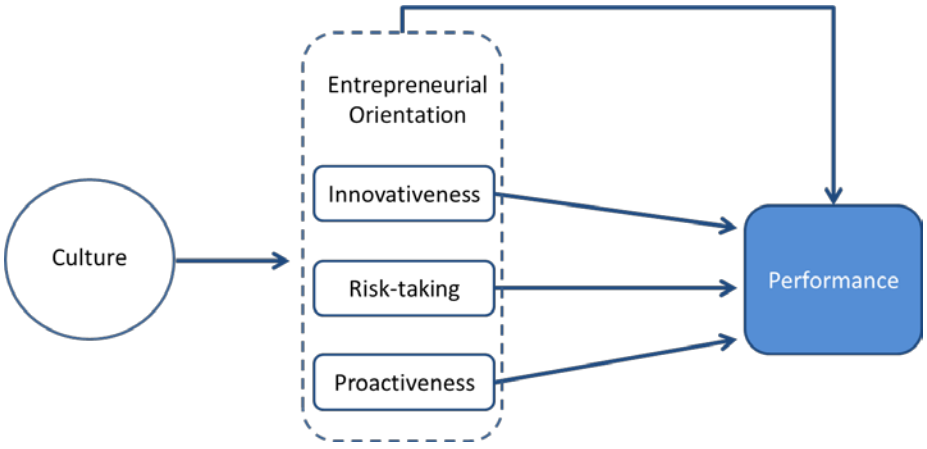

Figure 3: The conceptual framework of the study

This conceptual framework also works as a basis for the following building of hypotheses and forms the basis of the analytical framework, which will be developed to exhibit some of the more specific features of this study.

5.2 HYPOTHESIS BUILDING

The first hypothesis addresses the levels of innovation in Finnish and German SMEs. As was discussed in section 4.3, there is evidence for how Hofstede's culture dimensions support innovativeness.

First of all, Shane (1992; 1993) as well as Mueller and Thomas (2001) have found in their studies that more innovation occurs in individualistic cultures than in collectivistic ones. This is because individualism is related to a belief in freedom and an outward orientation, which have been found to be supportive features for innovation (Shane, 1993). Secondly, Hyrsky and Tuunanen's (1999) results about innovativeness suggest that femininity supports innovativeness. Thirdly, several researchers (Shane, 1993; Hyrsky and Tuunanen, 1999; Mueller and Thomas, 2001) have found evidence for the supportiveness of an uncertainty avoidant culture to innovativeness. This is because the broad-mindedness of uncertainty avoidant cultures allows entrepreneurs to innovate more freely (Mueller and Thomas, 2001). Fourthly, Knight (1987) and Shane (1992; 1993; 1995) have found that low power distance cultures are more supportive for innovativeness than high power distance ones, because the hierarchical structures in high power distance cultures reduce equality and thus limit innovation. Finally, it is suggested that a long-term orientation supports innovativeness (Bhidé, 2000; Lumpkin, Brigham and Moss, 2010) because innovative projects necessitate resources and require time before they pay off (Bhidé, 2000). Thus, a long-term orientation is expected to support innovativeness.

Based on the discussion above about the connections between Hofstede's culture dimensions and the innovativeness, innovativeness seems to be supported by a mix of individualism, femininity, low uncertainty avoidance, low power distance and a long-term orientation. As was shown in section 4.4, except for masculinity versus femininity, the differences of Finland and Germany on these measures are rather small. However, Finland scores only medium high in uncertainty avoidance and is less short-term oriented than Germany. When the clearly more feminine culture of Finland is added to these, it is hypothesized that:

H1: The level of innovativeness in Finnish SMEs is higher than the level of innovativeness in German SMEs.

The second hypothesis is related to the levels of the second dimension of EO, risk-taking. Based on the discussion in section 4.3, Hofstede's culture dimensions can guide assumptions on how well a culture supports risk-taking behavior.

Firstly, because there is more appreciation towards individual accomplishments in individual cultures than in collectivistic ones (Hofstede, 1980), people in individualistic cultures tend to engage in more risk-taking in order to gain results (Morris, Avila and Allen, 1993). Thus, individualism can be regarded as supportive for risk-taking. Secondly, in masculine cultures the pace of decision-making is faster than in collectivistic cultures, and thus there is not an extensive amount time for consideration (Hofstede, 1980). Thus, masculinity seems to support risk-taking. Thirdly, Kreiser, Marino, Dickson and Weaver's (2010) results indicate that there is more willingness for risk-taking behavior in uncertainty avoidant cultures than in those with high uncertainty avoidance. This is because risk-taking causes uncertainty, and if managers engage in risky actions, they need to be able to cope with the ambiguity caused (Kreiser, Marino, Dickson and Weaver, 2010). Fourthly, people in cultures with low power distance are interested in improving their own position as well as the position of their company in the market more than people in high power distance cultures (Shane, 1993; Kreiser, Marino, Dickson and Weaver, 2010). This willingness for improvement in low power distance cultures has been found to lead more risk-taking (Kreiser, Marino, Dickson and Weaver, 2010). Finally, Lumpkin, Brigham and Moss (2010) argue that if firms have a long-term orientation on their business, they may be reluctant to take risks. This is because the risk-taking may endanger their financial position in the long term. Thus, it is suggested that a short-term orientation supports risk-taking. (Lumpkin, Brigham and Moss, 2010)

As has been shown in the discussion regarding the relationship between Hofstede's culture dimensions and risk-taking, scholars have found risk-taking to be supported by high levels of individualism and masculinity, by low uncertainty avoidance and power

distance and by a short-term orientation. As Germany scores significantly higher in masculinity and is also more short-term oriented than Finland, it is hypothesized that:

H2: The level of risk-taking in Finnish SMEs is lower than the level of risk-taking in German SMEs.

As the discussion about the connection of culture and EO has shown, Hofstede's culture dimensions have also been linked to proactiveness. Firstly, Morris, Davis and Allen (1994) concluded that individualism may inhibit proactiveness because of people's unwillingness to cooperation that is necessary for entrepreneurship. Thus, a collectivistic culture is suggested to support proactiveness. Secondly, firms in masculine cultures tend to address and implement strategic issues more rapidly than their counterparts in feminine cultures, which often gives them an advantage of being ahead of competition (Hofstede, 1980). Thus, proactiveness seems to be supported by a masculine culture. Thirdly, it has been suggested that the general attitude towards the environment is more open in low uncertainty avoidant cultures, which in turn improves the possibilities of spotting opportunities (Lieberman and Montgomery, 1988). This argument was empirically confirmed by Kreiser, Marino, Dickson and Weaver (2010) who found that low uncertainty avoidance supports proactiveness. Fourthly, because people in high power distance cultures are used to following detailed instructions in their work, they tend not to be highly alert to the surrounding world, which decreases the chances of spotting opportunities (Hofstede, 2001). Supporting this, Kreiser, Marino, Dickson and Weaver (2010) found that low power distance supports proactiveness. Finally, it has been suggested that if firms take a long-term orientation into their business, they are more likely to engage in pioneering behavior rather than imitation (Lumpkin, Brigham and Moss, 2010). Similarly, Ward, Leong and Boyer (1994) argue that it often requires a long time frame to successfully spot opportunities and act on them ahead of competitors. Thus, it is suggested that a long-time orientation is supportive for proactiveness.

Based on the discussion above, proactiveness seems to be supported by collectivism, masculinity, low uncertainty avoidance and power distance as well as by a long-term orientation. Because both Finland and Germany are individualistic cultures with rather

high levels of uncertainty avoidance, they may not be supportive for proactiveness in an ideal manner. However, Germany is a masculine culture whereas Finland is a feminine one, which is the most significant difference between the two countries. Thus, it is hypothesized that:

H3: The level of proactiveness in Finnish SMEs is lower than the level of proactiveness in German SMEs.

Similar to the approach of Krauss, Frese, Friedrich and Unger (2007), after considering each dimension of EO separately, EO will now be considered as a whole. Based on the discussion in 4.3.4 regarding how Hofstede's culture dimensions support entrepreneurship, Hayton, George and Zahra's (2002) meta-analysis and the results of the other subsections of 4.3 show, EO seems to be best supported by a combination of individualism, masculinity, low uncertainty avoidance and power distance, as well as a long-term orientation. In addition to this, as has been shown in the previous hypotheses, the Finnish SMEs are expected to score higher in innovativeness and their German counterparts to have higher levels of risk-taking and proactiveness. Similar to the previous hypotheses, also here the more masculine culture of Germany plays a major role. Thus, in line of the research as well as the previous hypotheses, it is hypothesized that:

H4: The level of EO in Finnish SMEs is lower than the level or EO in German SMEs.

The fifth hypothesis addresses the relationship between innovativeness and performance in the SMEs of the two countries. First of all, as was discussed in 3.4.1, based on the findings of Hult, Hurley and Knight (2004), Verhees and Meulenberg (2004) as well as Hughes and Morgan (2007), innovativeness has a positive impact on performance. Secondly, Roper (1997) studied the influence of product innovation on productivity in German, Irish and English SMEs. He found that the German firms that scored higher in product innovation than their Irish and English counterparts also experienced a higher relative impact of product innovation on productivity. Thus, because as was shown in Hypothesis 1, the level of innovativeness is expected to be higher in the Finnish SMEs than in the German ones due to a more supportive cultural basis, it can also be argued that similar to the findings of Roper (1997), the impact of innovativeness on firm

performance should be stronger in the Finnish SMEs than in the German ones. Thus, it is hypothesized that:

H5: The positive impact of innovativeness on performance in Finnish SMEs is stronger than the positive impact of innovativeness on performance in German SMEs.

Hypothesis 6 is related to the most contradictory dimension of EO regarding the performance implications – risk-taking. As was shown in 3.4.2, Hughes and Morgan (2007) found that risk-taking has a negative impact on product performance, but on the other hand, Aaker and Jacobson (1987) and Gilley, Walters and Olson (2002) have found a positive relationship between risk-taking and performance. Because there is evidence for a positive relationship between risk-taking and performance, and because risk-taking is considered a legitimate part of EO, it is expected to have a positive impact on SME performance. Furthermore, similar to the reasoning in Hypothesis 2, as the level of risk-taking is expected to be higher in the German SMEs than in the Finnish ones, this may lead to risk-taking having a higher impact on SME performance in Germany than in Finland. This assumption is also supported by the findings of Josien (2012), whose results show that entrepreneurs were more willing to take risk than microentrepreneurs, and also had more positive performance implications on this. Thus, because if the German firms have a stronger willingness for risk-taking, this should also influence SME performance more than it would in the Finnish firms. Thus, it is hypothesized that:

H6: The positive impact of risk-taking on performance in Finnish SMEs is weaker than the positive impact of risk-taking on performance in German SMEs.

Hypothesis 7 is related to the proactiveness-performance relationship. As was evidenced in subsection 3.4.3, Lumpkin and Dess (2001) as well as Hughes and Morgan (2007) have found a positive proactiveness-performance relationship. In addition to this, the higher score of proactiveness is expected to also lead to a stronger relative impact on performance. Avlonitis and Salavou (2007) found in their comparative study of active and passive entrepreneurs that the active entrepreneurs scored higher on proactiveness and that proactiveness also had a higher positive impact on their product performance than it had on the product performance of the passive entrepreneurs. Thus, even though

it seems that neither of the cultures of Finland and Germany is the best platform for proactiveness, there still seems to be a better setting for it in Germany mostly due to a more masculine culture. When this more favorable setting is combined with the finding of Avlonitis and Salavou (2007), it can be assumed that the higher score of proactiveness also leads to a stronger performance implication. Thus, it is hypothesized that:

H7: The positive impact of proactiveness on performance in Finnish SMEs is weaker than the positive impact of proactiveness on performance in German SMEs.

Hypothesis 8 considers the EO-performance relationship. As was widely discussed in sections 3.2 and 3.3, multiple scholars (e.g. Zahra and Covin, 1995; Wiklund, 1999; Wiklund and Shepherd, 2003; Keh, Nguyen and Ng, 2007) have found a positive relationship between EO and performance. Additionally, Covin (1991) as well as Kemelgor (2002) have found that in a comparative setting the group possessing higher levels of EO also experienced a higher performance impact. Thus, as it is assumed in Hypothesis 4 that the level of EO is higher in German SMEs than in the Finnish ones, the impact of EO on performance can also expected to be stronger in the German SMEs than in their Finnish counterparts. Thus, it is hypothesized that:

H8: The positive impact of EO on performance in Finnish SMEs is weaker than the positive impact of EO on performance in German SMEs.

Figure 4 exhibits the analytical framework of this thesis from the basis of the conceptual framework presented in the first section of this chapter. This analytical framework summarizes all the hypotheses of this thesis. It implies that the Finnish and German cultures impact the SMEs and their EO because the SMEs are embedded in their cultures which affect underlying attitudes and orientations. Additionally, as has already shown based on the literature, there are both common and specific parts to culture in these two countries.

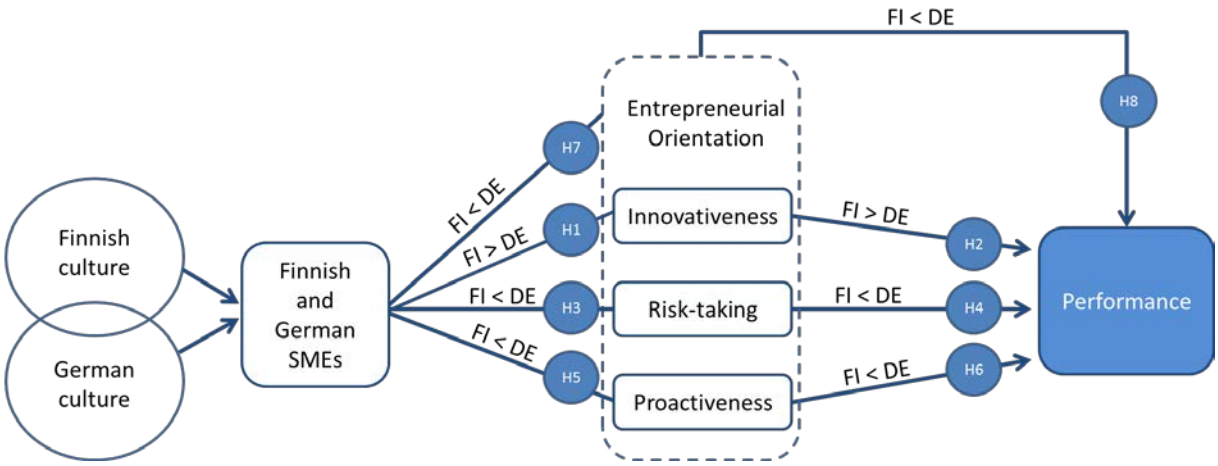

Figure 4: The analytical framework comprising all the hypotheses

This analytical framework forms the basis for data collection and analysis that are discussed in the following chapters of this thesis and guides all the choices made.

6 METHODOLOGY

The methodological part of this thesis starts with a justification of the chosen research method, after which it covers comparative research as a research approach and its benefits and challenges in a cross-cultural setting. The chapter then describes the criteria used for choosing the companies for the study and explains the data collection methods, after which it describes how the variables of the study were operationalized. In the final three sections, the chapter discusses the data analysis methods that were used in this thesis. It starts with factor analysis, then describes the comparison of means, and finally covers regression analysis.

6.1 CHOICE OF RESEARCH METHOD

A comparative research approach for this thesis was chosen, because as was shown already in the introduction, the goal is to determine if there are differences between Finnish and German SMEs when it comes to EO, its dimensions and their impact on firm performance. A comparative approach has been also the choice of method for those few researchers (Hyrsky and Tuunanen, 1999; Kemelgor, 2002; Suzuki, Kim and Bae, 2002; Domke-Damonte, Faulstich and Woodson, 2008) that have studied EO simultaneously in different contexts. As Mills, van de Bunt and de Bruijn (2006) state, the fundamental goal of comparative analysis is to search for similarity and variance. Because the goal of this thesis is to identify differences and similarities between Finnish and German SMEs when it comes to EO, comparative analysis seems to be the right method.

There would have been different approaches to how to compare the countries of interest including a survey, case study as well as ethnography. Ethnography can be used for collecting information on how people interact in their daily life and it requires the researcher to get involved and observe the behavior of groups in their environment. This approach allows the researcher to gain a deep understanding about the values and attitudes of the groups of interest. Thus, this approach would have required going to the companies of interest and observing people in there, which would have been a time-consuming approach that also requires a trust-building phase before the actual start of

the study. (Kolb, 2008) Due to these reasons and probably also because of the difficulty of arranging ethnography especially in a cross-cultural study, surveys and the case study have been the methods of choice in comparative EO research.

Hyrsky and Tuunanen (1999), Domke-Damonte, Faulstich and Woodson (2008) as well as Su, Xie and Li (2011) similar to the approach in this thesis, used a survey research method, whereas Kemelgor (2002) based his analysis on cases. Case studies can provide with a close understanding of specific entities because they allow the collection of detailed information and thus also detailed analysis (Hammersley and Gomm, 2009). However, Ragin (2006) posits that when cross-national comparative research is done with a case study approach, the selection of cases tends to function in favor of what is going to be studied and how the research questions have been formulated. Taking this into account, a survey method that is used in this thesis can provide with more objective results. Furthermore, Kemelgor (2002) calls for enlargening the sampling frame in future studies. This is suitable for this thesis, because the goal is not to find out about a specific set of companies in a specific industry, but rather to collect more general findings regarding the SMEs in Finland and Germany.

6.2 COMPARATIVE RESEARCH

The key purpose of comparative research is to identify differences and similarities between social entities (Sasaki, 2003). According to Hantrais (2009), in social sciences and humanities, comparative research is used for describing "studies of societies, countries, cultures, systems, institutions, social structures and change over time and space, when they are carried out with the intention of using the same research tools to compare systematically the manifestations of phenomena in more than one temporal or spatial sociocultural setting" (p. 2). This comparison can be both quantitative and qualitative in nature (Mills, van de Bunt and de Bruijn, 2006).

When discussing international comparative research, the requirement of comparison in two or more countries, societies, or cultures needs to be added (Hantrais, 2009). More specifically, Hantrais (2009) refers to the term cross-national comparative research, and defines it as comparisons that are made across legally specified and administratively

implemented national boundaries. In this thesis, the cross-national comparison comprises SMEs in two different countries: Finland and Germany.

6.3 BENEFITS AND CHALLENGES OF CROSS-CULTURAL COMPARISONS - OVERCOMING CHALLENGES

There are some key problems in comparative research in general, and especially in cross-cultural settings, that need to be borne in mind when engaging in comparisons. Completely overcoming all of these issues can be considered close to impossible. Therefore it is important to remember that if there are problems or limitations to the study that cannot be overcome during the research process, the researcher needs to discuss these limitations and analyze the possible impacts as well as to justify any changes in orientation that have been made along the way of conducting research (Armer, 1973).

The first key problem for a comparative study is the selection of unit, level, and scale of analysis (Lijphart, 1975; Mills, van de Bunt and de Bruijn, 2006; Peterson, 2009). It is challenging to identify comparable entities from different country culture settings and comparing relatively dissimilar societies often causes practical problems (Lijphart, 1975; Ragin, 1987; Mills, van de Bunt and de Bruijn, 2006). The ultimate reason behind this difficulty is the fact that countries have their historical backgrounds and own identities that complicate the comparison, because the countries cannot be handled as anonymous units of analysis (Ragin, 1987). Moreover, when comparable entities are found, they tend to be similar also in terms of the operative variables, not just with regard to potentially confounding background variables that should be controlled (Lijphart, 1975).

As has been shown in section 4.4 of this thesis, Finland and Germany score similarly on Hofstede's culture dimensions in general (Hofstede, 2011), but some differences are present as well, the most significant being between the femininity of the Finnish culture and the masculinity of the German one. Thus, it should not be a cause of concern in this study to have two countries of origin too different from or too similar to each other for meaningful comparison.

In terms of quantitative comparative cross-cultural research, the data itself can be problematic for making comparisons. Even though the availability of data as such has largely improved in many countries, data measurement, adequacy, and comparability still often remain as challenges (Hantrais, 2009). In more detail, the problems can be related to such factors as missing data, time series that are not comparable between the countries or the problem of not having corresponding categories (Hantrais, 2009). There probably is no such situation, where the possibility of problems regarding these factors would not be present. However, because in this thesis the data collection in both countries was made for the purposes of a specific research project, there is no risk of having wrong or lacking measures.

Another key problem in cross-cultural comparative research arises from construct equivalence (Mills, van de Bunt and de Bruijn, 2006; Leung, 2008; Peterson, 2009). If a construct is conceptually equivalent (Leung, 2008), the instrument measures the same latent trait across all groups or cultures (Mills, van de Bunt and de Bruijn, 2006). Achieving construct equivalence is not an easy task, since there may be a lack of common understanding about the central concepts and the societal context within which the measured phenomena are located (Leung, 2008; Hantrais, 2009). Peterson (2009, p. 329) argues that the problem is that once a researcher wants to compare one phenomenon between cultures and this phenomenon has some kind of a link to attitudes, the researchers cannot avoid the impact of languages, thought patterns, social norms, regulatory environments, and other issues that cannot even be clearly defined. Due to this, people from different national cultures often simply see the world through a different lens, which affects their perceptions about the surrounding world (Adler, 1997).

Due to the problem of construct equivalence, Jowell, Roberts, Fitzgerald and Eva (2007) state that the quality of questionnaire translations is a crucial factor in determining the comparability of results based on collected data. According to Brislin (1976) and Knight (1997), this problem can be reduced by using back-translation, where the researcher develops a questionnaire in one language and asks another person, who is bilingual, to translate it to the other language. After this, another bilingual is asked to translate the text back to its original language and these two versions are compared with

each other (Brislin, 1976; Knight, 1997). It is also not enough to find someone bilingual, but the translator also needs to have understanding of the field in which the translation is made (Hofstede, 2001).

Due to these above-mentioned challenges of conceptual construct equivalence, it is important to select only a few phenomena in a limited amount of countries for comparison, so that the degree of precision in the results can be maintained (Leung, 2008). Leung's (2008) suggestion is followed in this thesis, since only Finnish and German firms have been selected for the study, so it should be within limits to gain some control over the measurement and equivalence. There were also people taking care of the back-translation to ensure the congruence of the questionnaires in both countries. This was necessary since the original language of the items adopted was English, so translation had to be done both into Finnish and German.

Carefully choosing the scope of the comparison alone is not enough, since in countries such as Finland and Germany, where the languages differ from each other, the issues of language equivalency and the cultural links of communication can also affect how responses are situated in the measurement scale (Smith, 2004). This form of equivalence is called scalar equivalence (Leung, 2008) and it indicates that there may be limitations to the comparability of results between countries.

According to Smith (2004), country differences can be to some extent explained through differences in Hofstede's (2001) power distance. The relation has been found to be such that average responses in countries with higher power distance are generally more positive than in countries with lower power distance (Smith, 2004). The levels of Finland and Germany on this power distance dimension are highly similar to each other as Finland has a score of 33 on a scale from 0 to 100, whereas Germany scores only two points higher with 35 (Hofstede, 2011). Thus, based on the power distance measure, scalar equivalence should not be an issue, and the differences in responses between Finnish and German firms should not be caused by different perceptions about the scale, but rather by real some reasons that are in the interest of the study.

Finally, there is also the problem of methodological equivalence in cross-cultural comparisons. To ensure the comparability of the data, the used methods and procedures

also need to be equivalent. If methods are not equivalent, this may lead to biased results which make the cross-cultural comparison invalid. Therefore, to ensure the equivalency of the samples, the participants of the study from different cultural groups need to have equivalent background characteristics. Thus a commonly adopted approach for ensuring comparability is to match the samples in terms of their demographic characteristics. (Leung, 2008) This was done in this thesis by defining the profile for the respondent firms, and the same requirements were applied in both countries. These will be described in more detail in the next section of this methodological chapter.

In addition to taking care of the demographics of the respondents, it is also of high importance that the procedures followed in the study are equivalent across cultural groups. If the survey procedures vary across cultures, this may lead to drastically different results. The risk of having varying procedures is high, because the data is often collected by different people in different countries. (Leung, 2008) Effort has been put on avoiding these problems of methodological equivalence by making sure that data is collected from similar settings in both countries. This has required that the definition of an incubator and a technology park is the same in both countries. Thus, it has been ensured that the researched firms are provided with the same kinds of services to support growth and success.

Furthermore, all the phases of the data collection were also discussed with the German cooperation partners, and it was made sure that the firms were contacted the same way in both countries and that the procedure worked the same way. By committing to the procedures agreed on together, it was possible to reduce the risk of distorting the results due to problems caused by methodological equivalence.

All in all it can be stated that culture plays a crucial part in cross-cultural comparisons. When the EOs of two countries are compared with each other, it is important to recognize, which cultural factors are similar and which differ. By understanding the similarities and differences, the right kinds of conclusions about the results can be drawn. However, to come to a point where meaningful comparisons can be made, there needs be significant consideration about the selection of the case, the unit, level, as well as scale of analysis. Thus, the specific needs of a comparison need to be borne in mind

from the very beginning of a research process. Furthermore, it also needs to be considered that people's perceptions of concepts in different cultures may differ, which indicates the importance of ensuring construct equivalence and thus the comparability of the results. However, when all the procedures for making meaningful comparisons are borne in mind, the comparative research frame works well in interpreting the specific cases and understanding the similarities and differences of the compared units in more detail. Therefore, as will be shown in the following sections of this chapter, when the requirements of cross-cultural comparisons have been taken into account in this study, the results can be regarded as reliable to increase understanding about the topic of interest.

6.4 INCLUSION CRITERIA FOR THE STUDY

The identification of a sample that is suitable for the study, for the methods used, and for the representation of the whole population, is a methodological challenge in an empirical analysis of entrepreneurship research (Markman, Baron and Balkin, 2005). To find the companies suitable for this study, several criteria were used in the selection process. Industry was not limited, so the companies of the final sample represent many different industries.

The first criterion of inclusion was age, which had to be between one and 10 years. Timmons and Spinelli (2009, pp. 309-310) discuss venture development and divide it into five stages, which are research and development, start-up, high growth, maturity, and stability. They argue that a new venture can be defined as a firm that is in any of the phases preceding maturity. Furthermore, Timmons and Spinelli (2009) posit that the high growth phase lasts approximately up to ten years of age and until the firm has grown to a size of maximum 75 employees. This age range is similar to that adopted by e.g. Hansen (1995) and Lechner, Dowling and Welpe (2006) and is according to Covin, Slevin and Covin (1990), consistent with research measuring entrepreneurial firms.

Secondly, the companies selected had to be independent, so spin-offs of other companies and companies with parent corporations were excluded already in the selection phase (Lumpkin and Dess, 2001; Wiklund and Shepherd, 2005). Thirdly, the firms had to be located at an incubator, or business or technology park/ village. This

criterion is motivated by the fact that the companies located at these kinds of environments are usually entrepreneurial and surrounded by other firms with same kinds of interests, which can motivate them towards putting extra effort into being entrepreneurial (Kambil, Eselius and Monteiro, 2000). Furthermore, in these environments the firms are encouraged towards best practices, which may help them in moving forward (Rice, 2002). Start-ups that are clients of institutions like this, declare the institution to have an impact on the start-ups success (Lawrence, et al., 1997). However, as Hughes and Morgan (2007) remind, being incubated does not inevitably or path-dependently lead to success, but performance rather depends on practices, activities and actions of the firm.

There are many kinds of definitions of incubators and the current trend seems to be that more and more are required from these organizations. For the purpose of this thesis, incubator organizations are defined as organized facilities that offer office space, support services, technical and business development assistance, and provide the opportunity to get in contact with other entrepreneurs (Low and MacMillan, 1988; Allen and McCluskey, 1990). Thus, similar to Smilor and Gill (1986), the term incubator is used for covering business and technology parks and villages as well. This definition does thus indicate that all the firms included in this study are located at same premises with other firms thus enabling networking and information sharing. They also have basic services and space available and have the chance to use assistance services to support their business.

The final, fourth, criterion for the inclusion in the study was that at least one of the founders was still actively involved in the business. Similarly to various other researchers (e.g. Covin and Slevin, 1989; Wiklund, 1999; Jantunen, Puumalainen, Saarenketo and Kyläheiko, 2005; Hughes and Morgan, 2007) the study relied on single key informants. The reason for choosing the founders as informants was made because these people have the experience of the whole founding process and they are highly involved in the business (Brush and Vanderwerf, 1992; Lechner, Dowling and Welpe, 2006) thus also having the best knowledge about it. The most common titles of these people were such as CEO, managing director, and CTO. Furthermore, using the founder as key informant should work well in representing the views and EO of the firms, since

many scholars (e.g. Wiklund, 1998; Krauss, Frese, van Gelderen and Ombach, 2000; Wiklund and Shepherd, 2003; Frese Friedrich and Unger, 2005) argue that in small and young firms, the founder and /or CEO has a huge impact on the orientations of the company and the way things are done.

6.5 DATA COLLECTION

This section regarding the collection of data gives a detailed description of the data collection methods used. In the subsections it covers the determination of the sample size as well as the limitations of data to provide with a full picture of this collection process.

The team responsible for data collection in Germany consisted of 5 students, whereas in Finland the data collection was taken care of by two people. In Germany the data collection was made between July and September 2011, whereas in Finland the collection took place later, in April-May 2012. The time period differed because the project as a whole was initiated in Germany and thus also started earlier. This also means that in Germany the founders were answering the questions regarding year 2010 as the last year of operations, whereas in Finland 2011 was considered the last full year of operations. Thus, the companies in the German data have been founded between 2000 and 2009, whereas in Finland the founding year ranges from 2001 to 2010. This can of course cause difficulties with comparability. However, it seemed better not to ask about year 2010 in year 2012 from the Finnish founders, because this could have caused a risk in terms of getting the right answers due to the time cap between the events and the moment of answering. Thus choosing different years was considered to be less harmful for the final results than risking the quality of the answers. Even though it is not optimal that there are differences in the time frame of which the answers are based on, this seems to exist in other studies as well. Su, Xie and Li (2011) for instance seem to have been comparing the EO-performance relationship in Chinese new ventures and established firms based on data that has been collected during two different years.

The data collection process started with the identification of suitable candidates based on information collected over the Internet. The homepages of incubators, technology and business parks and villages were used to find firms located at these environments.

In some cases the firms were not listed on the webpages of the incubators in which case the incubators were sent an e-mail where the names of the companies were asked for.

In Germany a full list of all the possible companies belonging to the population was not identified. In the scope of the study, this would have been almost an impossible task due to the size of the country and thus the huge number of businesses. However, from those firms identified, the contacted ones were randomly selected. In Finland a somewhat closer identification was made. All the incubators, technology and business parks and villages that were found over the Internet were included, which led to a population of approximately 750 firms. This of course is not the exact number of the population, but is the closest that could be gotten with the resources in use.

The second phase of the data collection process was a telephone call to the founders of the firms who were asked for their willingness to participate in the study. Eligibility and the identity of the most suitable key informants were ascertained during the telephone conversation (Jantunen, Puumalainen, Saarenketo and Kyläheiko, 2005) since the information about the founder(s) was not always available at the firm website. The founders were also informed about the scope and purpose of the study as well as about the confidentiality of the responses.

The decision for an initial telephone call was made because this method can have a significant positive impact on the response rate of an online questionnaire (Brush and Vanderwerf, 1992; Dennis, 2003). This was also the feedback the founders gave over the phone, as many of them said that they are only going to respond because a phone call was made before sending the questionnaire.

After agreeing to participate in the survey, the founders were immediately sent a link to the online questionnaire via e-mail. Thus they were able to fill in the questionnaire at the most convenient time for themselves. This e-mail included information about confidentiality and university sponsorship for the project, which should improve the response rate (Dillman, 2000). The letter can be found in English in Appendix I. There were no monetary or material incentives given for the founders to participate, but the participation was solicited by means of incentives such as the offer of a summary report of the results, and by assuring confidentiality of the responses (Jantunen, Puumalainen,

Saarenketo and Kyläheiko, 2005). Reminders were sent after one and two weeks to those founders who had not responded to the questionnaire within that time. Also the reminder included the basic information about the project and its confidentiality.

The advantages of online questionnaires are flexibility, availability at all times, and easy accessibility from every location (Ilieva, Baron and Healey, 2002). The costs for collecting data with means of an online questionnaire are lower and the responses are available faster compared to traditional mail surveys (Deutskens, de Ruyter and Wetzels, 2006). The average time to fill in the questionnaire was 12-15 minutes, which was tested by a couple of people not familiar with the questionnaire. This questionnaire was a self-report survey where founders were asked to directly fill in the required information that was needed for data collection (Brush and Vanderwerf, 1992). The questionnaire was built so that a respondent was not able to move to the next page of questions before filling in all the answers on the previous site. Thus there was no problem of missing data.

6.5.1 Sample definition

The sample for both countries was defined by using simple random sampling. In a simple random sample each target respondent has an equally high chance of being selected to the sample (Fink, 2009) because the members of the target population are selected one at a time and only have one chance of being selected (Fink, 2003). The advantages of this method are that it is simple to use, relatively unbiased due to the selection method of target population, and the sample can be chosen by using a random-number feature in excel (Fink, 2003; 2009).

When the population in Finland had been defined, the next step was to define the sample size that would be representative for this population. The sample size was defined by using Cochran's (1977) formula for continuous data presented in Equation 1, cited in Bartlett, Kotrlik and Higgins (2001):

$$n_0 = \frac{t^2 * s^2}{d^2}$$, where (1)

n_0 is the required return sample size

t is the t-value for the selected level of alpha

s is the estimate of standard deviation in the population, and
d is the acceptable margin of error

In this formula, there are two key factors where the acceptable level needs to be decided before the use of the actual formula. The first one of these factors is the margin of error represented by d in the formula. The margin of error describes the precision of the results. It does this by defining how much the real result can deviate from the result calculated by using a sample. (Bartlett, Kotrlik and Higgins, 2001) The general rule in educational and social research is that a margin of error of 3% can be used for continuous data (Krejcie and Morgan, 1970). Thus, this value of 3% was also used in defining the suitable sample size for the Finnish data.

The second key factor is the level of alpha. Alpha level refers to the acceptable level of risk that the true margin of error is actually bigger than the acceptable margin of error. The most commonly used alpha level in determining sample size is either 0.05 or 0.01 (Ary, Jacobs and Razavieh, 1996). In this study, alpha level of 0.05 was used, and 1.96, which is the corresponding t-value for a 0.05 alpha, was incorporated to the formula. (Bartlett, Kotrlik and Higgins, 2001)

Because the central information for this study was collected through statements and questions on a seven-point Likert scale, this needed to be taken into account in the definition of the variance and thus the calculation of the sample size. The basic assumption is that six standard deviations, three on each side of the mean, would capture 98% of all the responses. Because the inclusive range of the seven-point Likert measurement scale is seven, this number needs to be divided by the number of standard deviations. (Bartlett, Kotrlik and Higgins, 2001) Thus, standard deviation (*s*) was determined by Equation 2:

$$s = \frac{7\ (\text{number of points on the scale})}{6\ (\text{number of standard deviations})} \approx 1{,}167 \qquad (2)$$

Based on this information, the calculation of the required return sample size was as follows in Equation 3:

$$n_0 = \frac{1.96^2 * 1.167^2}{7 * 0.03^2} = 118 \quad (3)$$

According to this formula, a sample size of 118 would be suitable. However, because this sample size of 118 exceeds 5% of the population of 750 firms, a correction formula was used for calculating the final sample size (Bartlett, Kotrlik and Higgins, 2001). The formula for the correction was of the form following in Equation 4:

$$n = \frac{n_0}{(1+\frac{n_0}{population})} = \frac{118}{(1+\frac{118}{750})} \approx 102, \text{ where} \quad (4)$$

population size is 750
n_0 is the required return sample size according to Cochran's formula
n is the required return sample size because sample > 5% of the population

Thus, based on this information, the minimum return sample size for the Finnish data was 102. However, as has been explained earlier, the same kind of procedure of sample size determination was not possible in Germany due to the difficulty of determining the population as well as the collection of such big data set for the purposes of the research project.

In Finland 192 founders agreed on taking part in the survey and 124 of these actually completed the questionnaire. Of the 124 completed questionnaires 110 were usable for the data analysis thus leading to a response rate of 57.3%. In Germany, 408 founders agreed on answering the questionnaire of which 137 completed it. However, 112 of these 137 questionnaires were usable for the final analysis, which lead to a response rate of 27.5%. These response rates are satisfactory for a study that is subjected to executives of firms, as Cycyota and Harrison (2006) as well as Baruch and Holtom (2008) report levels exceeding 17% to be sufficient.

With 110 and 112 usable responses the data sets are almost identical in size, which makes comparing them to each other easier. When considering the representativeness in Finland, this sample size exceeds the minimum required sample size of 102, whereas in Germany the sample is rather small considering the size of the country. The small sample size in Germany may thus limit the generalizability of the results. These sample

sizes seem to also be normal for the research of entrepreneurship, since many researchers (e.g. Covin and Slevin, 1988; Zahra and Covin, 1995; Stam and Eflring, 2008) have studied EO based on samples just around 100.

6.5.2 Data limitations

There are two main limitations caused by the data and its collection. Firstly, because the data was collected during different years in Finland and Germany, this may cause problems with the comparability. The financial situation in the two countries may have been different, which could, however, have been true for the same point in time as well. However, in terms of cultural factors this should not be an issue, because as Hofstede (1993) argues, culture changes very slowly. Thus, at least from cultural point of view, the two consecutive years should not make a difference in cultural terms.

Another limitation to data is the fact that the German population was not defined as a whole and thus the sample is likely not to be large enough. Thus, this may limit the generalizability of the results and thus also make the comparability of the results regarding the Finnish and German firms more difficult.

6.6 OPERATIONALIZATION OF THE VARIABLES

This chapter describes the basic measurement of the most important variables for this study. In the following subsections the operationalization of each of the key variables is discussed in more detail.

All the questions and statements related to EO and performance were answered on a seven-point Likert scale. The statements ranged from “strongly disagree” to “strongly agree”. A seven-point Likert scale is an effective way of collecting data because it minimizes the response time and effort and thus increases the chances of getting enough completed questionnaires (Knight and Cavusgil, 2004). Furthermore, to get the most truthful answers and to minimize misunderstandings, the questionnaire was available in the mother tongue of the respondents. The original questions were in English and back-translation (Brislin, 1976; Knight, 1997) was done both to Finnish and German to ensure construct equivalence (Jowell, Roberts, Fitzgerald and Eva, 2007). This was made to improve the comparability of results between countries. Additionally, because

there were also English-speaking respondents involved in Finland, the questionnaire was also available in English.

6.6.1 Performance

Performance is the dependent variable in this study and self-reported measures were adopted for measuring it. This has been a common approach in EO research and has been used by e.g. Dess, Lumpkin and Covin (1997), Jantunen, Puumalainen, Saarenketo and Kyläheiko (2005) and Wiklund and Shepherd (2005). The use of self-reported data does not seem to produce severe problems with regards to the reliability of the data, as it has been shown by many researchers (e.g. Venkatraman and Ramanujam, 1987; Chandler and Hanks, 1993; Dess, Lumpkin and Covin, 1997) that self-reported data correlates highly with objective data.

Performance was measured through four different items, which were then combined into one construct. Using different kinds of measures creates a comprehensive picture of the firm performance (Wiklund, 1999). Performance was measured based on relative measures where the respondents were asked to compare their firms' performance to that of competitors. This is a widely adopted way of measuring performance in EO studies and has been applied by e.g. Wiklund (1999), Wiklund and Shepherd, (2005), and Keh, Nguyen and Ng (2007).

Performance was measured based on growth because as Wiklund and Shepherd (2005) argue, growth is likely to be more accurate and accessible in measuring performance than accounting measures. This is especially the case with young unlisted SMEs. The questions were related to sales and profit growth (Wiklund, 1999), growth in the number of employees (Wiklund and Shepherd, 2005), and to the growth of market share (Keh, Nguyen and Ng, 2007). The questions in their exact form can be found in Appendix II.

6.6.2 Entrepreneurial orientation and its dimensions

EO is the independent variable in this study and was treated as a multi-dimensional construct indicating that each of its dimensions can have an individual influence on the firm performance despite of the level or existence of the other dimensions (Lumpkin and Dess, 1996). Even though treating EO as multi-dimensional is against the

mainstream in studies that have somehow addressed the EO-performance relationship, for example Hughes and Morgan (2007) chose this multi-dimensional approach. Treating EO as multi-dimensional is also a more sensible solution in this study, because more can be revealed about the differences between the two countries when EO can be decomposed to its dimensions (Covin, Green and Slevin, 2006). By doing this, each dimension can be analyzed separately without EO ceasing to exist. As Kreiser, Marino and Weaver (2002) argue, if each dimension individually contributes to EO, adopting a multi-dimensional view is the best way to derive conclusions and results that are not limited in nature. EO, however, was also studied as a whole, which means that the simultaneous impact of the three dimensions was also measured.

As mentioned earlier, EO was similar to many other researchers (e.g. Covin and Slevin, 1989; Wiklund, 1999, and Wiklund and Shepherd, 2003) treated as a three-dimensional construct consisting of innovativeness, risk-taking and proactiveness. A scale created by Eggers, Kraus, Laraway and Snycerski (in press) was used. This scale consists of 5 items measuring both innovativeness and proactiveness and of 4 items measuring risk-taking. Eggers, Kraus, Laraway and Snycerski (in press) created the scale based on the work of several well-known researchers in the field of EO. They factor analyzed a large amount of different EO measures and reduced the number of scale items to only include those with the strongest factor loadings. All the items used in this study can be found from Appendix II.

Innovativeness was operationalized through statements about appreciation towards new products and ways of solving problems, the company's innovativeness position compared to that of competitors, as well as through how innovative the firm was perceived to be. Risk-taking was measured based on the firm's perception towards risky actions and willingness to engage in such actions. Furthermore, it was measured, whether the firm was bringing this positive attitude towards risk-taking through to their employees as well. The measurement of proactiveness comprised statements about attitudes towards looking for new opportunities, new targets in terms of both customers and markets and unveiling new customer needs.

Because the questionnaire had not been developed for the specific needs of this thesis only, it also included some other questions that were on the interest of others utilizing the same questionnaire. In addition to questions about EO and performance, the questionnaire contained questions about the company itself, the start-up network, and network success. The survey was pre-tested by seeking comments from some German researchers, who have a broad knowledge about the topics of new ventures, EO and networks. The Finnish questionnaire was pretested with some individuals to ensure the clarity of the questions and to evaluate the real time answering the questionnaire would take.

6.6.3 Control variables

Similar to most studies regarding the relationship between EO and performance, firm size, age and industry were controlled. Firms of different size and age may be in different stages of development and may thus have different kinds of organizational and environmental characteristics, which may impact on performance. This applies to also firms operating in different industries. (Wiklund and Shepherd, 2005) Due to these reasons, these variables were controlled.

Firm size was determined based on the number of employees (e.g. Wiklund and Shepherd, 2005; Covin, Green and Slevin, 2006), firm age was directly asked in the questionnaire, and industry was determined based on a question whether a firm was operating in manufacturing, trading or services (Wiklund and Shepherd, 2005).

The variables introduced in this section were used in the data analysis that was executed with different methods. These methods are going to be discussed in more detail in the following sections of this chapter.

6.7 FACTOR ANALYSIS

Factor analysis is a technique for identifying groups or clusters of variables and can thus be used for trying to understand the structure of a latent variable (Field, 2009). By doing this, factor analysis helps in evaluating construct validity (Nunnally, 1978). When some variables correlate highly with each other, this suggests that these variables could be measuring characteristics of the same underlying dimension. These underlying dimensions are called factors. When a data set is reduced from a group of interrelated

variables to a smaller amount of factors, parsimony is achieved with the use of the smallest number of explanatory constructs. (Field, 2009)

The general linear factor model can be presented as is shown in Equation 5:

$$Y_i = b_1X_{1i} + b_2X_{2i} + \cdots + b_nX_{ni} + \varepsilon_i \text{ , where} \quad (5)$$

Y_i is the i:th factor
b_1 to b_n are the factor loadings from 1 to n
X_{1i} to X_{ni} are the values of the variable X for the i:th observation, and
ε_i is the residual

A factor can be described based on the variables it measures and on the relative importance of those variables to that factor shown by the *b* value. In a general form, the assumption in this thesis was that EO consists of three dimensions and there should be specific variables measuring each of those. As will be shown in 7.2, some stages of factor analysis were required before this condition was achieved for both countries. However, the models of the three dimensions of EO were finally formed in the following general form shown in Equation 6.

$$Innovativeness_i = b_1Innovativeness_{3i} + b_2Innovativeness_{4i} + b_3Innovativeness_{5i} + \varepsilon_i$$

$$Risk\text{-}taking_i = b_1Risk\text{-}taking_{1i} + b_2Risk\text{-}taking_{3i} + b_3Risk\text{-}taking_{4i} + \varepsilon_i \quad (6)$$

$$Proactiveness_i = b_1Proactiveness_{1i} + b_2Proactiveness_{3i} + \varepsilon_i$$

Because as was discussed in 6.6.1, it is also typical in EO research to measure performance with multiple items, the performance variables were also factor analyzed to see if they loaded on the same factor. The general form can be seen in Equation 7:

$$Performance_i = b_1Performance_{1i} + b_2Performance_{2i} + b_3Performance_{3i} + b_4Performance_{4i} + \varepsilon_i \quad (7)$$

The whole process of factor analysis for the specific data sets of this thesis will be shown in section 7.2.

6.8 COMPARISON OF MEANS

As discussed in Chapter 5, some of the hypotheses of this thesis concern the level of EO and its dimensions between SMEs of the two countries. To test this, the mean values of the countries had to be compared to each other and it had to be determined, whether the means differed significantly from each other.

The comparison was performed according to the guidelines of Field (2009). This is the same method that Kemelgor (2002) adopted in his cross-cultural study when comparing the levels of EO between two countries. According to Field (2009), a t-test can be adopted for testing whether two group means are significantly different from each other. In case of two countries studied, the independent-means t-test needs to be adopted, because it applies to situations when there are two completely separate groups that are compared with each other. This t-test produces two different output options, namely "equal variances assumed" and "equal variances not assumed". To decide, which one to choose, Levene's test can be used to see, whether variances differ between the groups. Levene's test tests the hypothesis that the variances of the two groups are equal, and thus if the test is significant at $p \leq 0.05$, this indicates that the variances are different and the results need to be analyzed based on "equal variances not assumed". (Field, 2009)

Once it has been decided based on the Levene's test results, which results of the t-test to use, the value is analyzed in terms of whether it is below or above $p=0.05$. A value below this indicates that the difference between the compared means is significant whereas in case of $p>0.05$, it has to be concluded that the difference between the means is not significant.

The calculations and results regarding the comparisons of means are conducted in section 7.4, and the implications of these results are discussed in 7.5 in more detail.

6.9 REGRESSION ANALYSIS

When the impact of EO on firm performance has been studied, regression analysis has been used as means to do so (see e.g. Covin and Slevin, 1989; Wiklund, 1999;

Kemelgor, 2002; Wiklund and Shepherd, 2003; 2005). Regression analysis is a way to predict an outcome variable based on either one or several predictor variables (Field, 2009). This section consists of three subsections, from which the first concentrates on the regression method used in this thesis. The second subsection then describes how the quality of the created regression models can be evaluated, and the final subsection shows, how the correlation coefficients between models can be compared.

6.9.1 Hierarchical multiple regression

Similar to e.g. Covin, Green and Slevin (2006), hierarchical multiple regression analysis was used to analyze the impact of EO and its dimensions on SME performance. Multiple regression measures the relationship between a dependent variable and two or more independent variables (Malhotra and Birks, 2006). In hierarchical regression, variables are entered cumulatively to the model based on some specified hierarchy according to the purpose and logic of the research (Cohen, Cohen, West and Aiken, 2003). In this thesis the logic was similar to that of Covin, Green and Slevin (2006), where the control variables of firm size, age and industry were entered first, after which the independent variable was entered. Thus there were two hierarchical steps in the process. Such a hierarchical approach makes it easier to spot the real influence of the independent variables that are in the center of interest (Covin, Green and Slevin, 2006). The general multiple linear regression presented in Equation 8 is of the following general form:

$$Y_i = b_0 + b_1X_{i1} + b_2X_{i2} + \cdots + b_nX_n + \varepsilon_i \text{ , where} \quad (8)$$

Y_i is the i:th observation of the dependent variable Y
b_0 is a constant presenting the point where the regression line intercepts Y axis
b_1 to b_n are the slope coefficients for the predictors from 1 to n
X_{i1} to X_n are the values of the independent variable X for the i:th observation, and
ε_i is the residual

When the general multiple linear regression formula for the first model of the thesis covering the control variables was adopted, the formula was as presented in Equation 9:

$$Performance = b_0 + b_1Firm_size_i + b_2Firm_age_i + b_3Industry_i + \varepsilon_i \quad (9)$$

After this, three additional models were built for the SMEs of both countries to reflect each of the EO dimensions separately. The formula for the second model measuring innovation and relating to hypothesis two was as shown in Equation 10:

$$Performance = b_0 + b_1 Innovativeness_i + b_2 Firm_size_i + b_3 Firm_age_i + b_4 Industry_i + \varepsilon_i \quad (10)$$

The third model shown in Equation 11 was the one measuring risk-taking addressed in Hypothesis 6, and was of the following form:

$$Performance = b_0 + b_1 Risk\text{-}taking_i + b_2 Firm_size_i + b_3 Firm_age_i + b_4 Industry_i + \varepsilon_i \quad (11)$$

The last, fourth, model concentrating on only one dimension of EO was that of proactiveness relating to hypothesis six. It is presented in Equation 12:

$$Performance = b_0 + b_1 Proactiveness_i + b_2 Firm_size_i + b_3 Firm_age_i + b_4 Industry_i + \varepsilon_i \quad (12)$$

Finally, Equation 13 presents the fifth model, which is related to Hypothesis 8. In this model EO was concentrated on as a whole:

$$Performance = b_0 + b_1 EO_i + b_2 Firm_size_i + b_3 Firm_age_i + b_4 Industry_i + \varepsilon_i \quad (13)$$

The results based on these five regression models will be shown in the next chapter (section 7.4) and the implications of these results will be discussed in further detail in section 7.5 as well as in the concluding chapter.

6.9.2 Assessment of accuracy of the regression models

When a regression model has been produced, there are two important aspects that need to be assessed. The first aspect is to determine whether the model fits the observed data or is influenced by a small number of cases. The second aspect is to analyze whether the model can generalize to other samples. (Field, 2009)

The means of evaluating the model fit are to look for outliers and influential cases. An outlier is a case that is significantly different from the main trend of the data and can thus cause bias in the data. Outliers can be detected by analyzing the standardized residuals of the regression model. The general rules of finding outliers are derived from the z-scores of a normally distributed sample. The recommendation is that standardized residuals with a value greater than 3.29 are a cause of concern. Additionally, if there are more than 1% of values with standardized residuals exceeding 2.58, or alternatively more than 5% of the cases with a standardized residual greater than 1.96 there may be a problem concerning outliers. If these conditions are fulfilled by the data, it indicates that the model represents the data poorly. (Field, 2009)

When it comes to checking for influential cases that can have an overly large impact on the model as a whole, the existence of such values can be assessed based on Cook's distance. Cook's distance measures the overall impact of a case on the model, and the values should remain on a level below one not to cause concerns regarding the model. (Field, 2009)

Field (2009) lists nine assumptions that need to hold for the model to generalize. These assumptions are as follows: 1) all predictor variables need to be quantitative or categorical in nature, and the outcome variable must be quantitative, continuous and unbounded. 2) All predictors should have some variation in value. 3) There should be no perfect multicollinearity, which exists when one or more predictors of a model correlate strongly with each other. Multicollinearity decreases the trustworthiness of the regression coefficients and makes it difficult to assess the importance of a predictor. It can be assessed based on the variance inflation factor (VIF). 4) The predictors of the regression model need to be uncorrelated with external variables, because otherwise the reliability of the model is compromised. 5) The variance residual terms need to be homoscedastic, which means that the variance of the residuals is constant at each level of the predictor variable(s). Homoscedasticity can be checked by plotting the standardized residuals against the standardized predicted values in a model. If the assumption of homoscedasticity is not violated, the points should be randomly and evenly dispersed throughout the plot. 6) The residual terms of any two observations should be uncorrelated, so there should be no autocorrelation. 7) The residuals of a

model need to be random, normally distributed variables with a mean value of zero. 8) All values of the outcome variable need to come from a separate entity and thus be independent. 9) The modeled relationship needs to be a linear one for linear regression to be the right approach. (Field, 2009)

The results of the tests regarding both model fit and the model generalizability will be shown in 7.1.2.

6.9.3 Comparison of regression coefficients between countries

To depict if the regression coefficients of two different data sets differ significantly from each other, the following null hypothesis shown in Equation 14 needs to be tested (Hardy, 1993):

$$b_X = b_{Y,} \text{ where} \quad (14)$$

b_X is the correlation coefficient of model *X* and

b_Y is the correlation coefficient of model *Y*

This null hypothesis suggests that the correlation coefficients for *X* and *Y* do not significantly differ from each other.

In this thesis, the general formulae for testing these differences are shown in Equation 15 for all the models:

$$b_{\text{Innovativeness_FI}} = b_{\text{Innovativeness_DE}}$$
$$b_{\text{Risk-taking_FI}} = b_{\text{Risk-taking_DE}} \quad (15)$$
$$b_{\text{Proactiveness_FI}} = b_{\text{Proactiveness_DE}}$$
$$b_{\text{EO_FI}} = b_{\text{EO_DE}}$$

Thus, in these models the null hypothesis assumed that the levels of for instance innovativeness would not differ between the Finnish and German SMEs. To test these null hypotheses, the data sets of the countries had to be combined and a dummy variable for the countries needed to be created. After this, an interaction term was created for each model. This interaction term consisted of the dimension variable as well as of the

dummy variable for the country. (Hardy, 1993) The different interaction terms for the different models are shown in Table 3.

Table 3: Interaction terms for measuring coefficient differences

Model	Interaction term
2	Innovativeness*Country
3	Risk-taking*Country
4	Proactiveness*Country
5	EO*Country

After creating these interaction terms, new linear multiple regressions were run with a combined data set of both countries including the interaction term as well as the dummy variable for the country. Based on the significance of the new interaction term in the models, it was possible to determine, whether the differences of the regression coefficients for innovativeness, risk-taking, proactiveness, and EO were significant. (Hardy, 1993) The results of these tests can be seen in section 7.2.

7 ANALYSIS AND RESULTS

This chapter concentrates on describing and analyzing the results of the study. It starts with the descriptive statistics of the analyzed firms and the fit and generalizability of the regression models. Next, it gives a stage-by-stage description of the factor analyses of EO and its dimensions on one hand, and performance on the other hand. These factor analyses lead to the final model adopted for the analysis. After the factor analysis, the chapter covers the correlations of the main concepts and then moves on to the actual hypothesis testing and finally to the discussion of the results.

7.1 DESCRIPTIVE STATISTICS

The descriptive statistics of the results are two-fold. The first section covers the basic features of the firms surveyed for this study. The second chapter describes the tests regarding the regression models to determine the fit of the models as well as their generalizability for the population.

7.1.1 General features of the surveyed companies

Table 5 includes the descriptive statistics of the companies that were surveyed for this thesis both in Finland and in Germany. The median age of the firms was five years in Finland and four years in Germany, and the median number of founders amounted to two in both countries. The number of employees ranged from zero to 60 in Finland and to 35 in Germany with a median of two in both countries. Thus, there were many entrepreneurs taking part in the study that had not hired anyone else to work for the company. The median turnover in both countries was in the category of 125 000 to 250 000 euros. On the basis of this information, all these companies can be called young SMEs based on the SME definition of the European Commission (2003) according to which an SME has less than 250 employees and a turnover of maximum 50 million euros.

Table 4: Descriptive statistics of surveyed firms

Company characteristics	Frequency		Percentage (%)	
	FI	DE	FI	DE
Age (yrs)				
1	9	23	8,2	20,5
2	22	20	20,0	17,9
3	8	11	7,3	9,8
4	13	9	11,8	8,0
5	15	8	13,6	7,1
6	9	14	8,2	12,5
7	6	4	5,5	3,6
8	11	10	10,0	8,9
9	5	8	4,5	7,1
10	12	5	10,9	4,5
Number of founders				
1	38	44	34,5	39,3
2	37	34	33,0	38,4
3	13	16	11,6	30,4
4-6	19	15	17,3	13,4
more than 6	3	3	2,7	2,7
Number of employees				
0	27	28	24,5	25,0
1-5	58	60	52,8	53,6
6-10	8	8	31,7	7,1
11-15	7	9	6,4	8,0
16-20	5	2	4,6	1,8
21-25	2	2	1,8	1,8
26-30	0	2	0	1,8
31-35	0	1	0	0,9
More than 35	3	0	2,7	0,0
Annual turnover (€)				
0 - 10 000	5	9	4,5	8,0
10 000€ - 25 000	10	9	9,1	8,0
25 000€ - 50 000	11	12	10,0	10,7
50 000€ - 125 000	21	25	19,1	22,3
125 000€ - 250 000	17	14	15,5	12,5
250 000€ - 500 000	17	20	15,5	17,9
500 000€ - 2 000 000	21	17	19,1	15,2
over 2 000 000	8	6	7,3	5,4
Industry				
Services	78	86	70,9	76,8
Trading	12	8	10,9	7,1
Manufacturing	20	18	18,2	16,1

As has been mentioned before, the industry of the companies chosen for the study was not limited. Similar to the approach of Wiklund and Shepherd (2005), the firms were divided into three different categories of services, trading and manufacturing. The dominating industry in both countries was that of services with 78 companies in Finland and 86 in Germany and the overall division of companies between different industries was very similar in both countries.

7.1.2 Fit and generalizability of the regression models

To analyze the quality of the regression models produced, the data was analyzed and tests for the regression models were run based on the guidelines of Field (2009) discussed in subsection 6.9.2. The thorough results of this analysis can be found in Appendices III through IX.

The analysis was started by looking for possible outliers. This was done by choosing the case-wise diagnostics to track outliers outside of 2 standard deviations (a convenient form of 1.96 discussed in 6.9.2). Based on the results that can be seen in detail in Appendix III, the largest amount of standardized residuals (5) exceeding the level of two were tracked in the Finnish models regarding the relationship of innovativeness and EO on performance. None of these values, however, exceeded the level of 2.58, so the outliers did not compromise any of the models.

As the second step, to check for influential cases, Cook's distance was measured for all the models. The Cook's distance values of the models can be found in Appendix IV. All the values remained clearly below one, so no influential cases that would compromise the model fits were found.

Considering the nine assumptions described in 6.9.2 regarding the generalization of the model for the population, some of these assumptions can be assessed without a certain measure. Assumption 1) of all predictor variables needing to be quantitative or categorical was met, and the same applies to a quantitative, continuous and unbounded outcome variable. Assumption 2) of all predictors having to have some variation in value was also met. Regarding assumption 3) of the predictors of the model not correlating with external variables can also be regarded as to having been met as the items were chosen based on previous studies and factor analyzed. According to

assumption 8), the values of the outcome variable need to come from a separate entity, which was the case as each value of performance was generated for a different firm. Finally, regarding assumption 9), the modeled relationships seem to be linear in nature.

When it comes to those assumptions that required testing, the first one of these was assumption 3), namely multicollinearity, which can be evaluated based on VIF. According to Field (2009), values that get close to ten become worrying. The VIFs of the different models can be seen in Appendix V, and these factors clearly show that multicollinearity is not an issue since the values for both countries stay below three in case of all the models.

Assumption 5) was the requirement of homoscedasticity, which can be checked based on the plot of standardized residuals against standardized predicted values of the model. Based on the plots of the model that can be seen in Appendix VI, the points are rather randomly and evenly distributed throughout the plots, so homoscedasticity is met.

Based on assumption 6), there should be no autocorrelation. Autocorrelation becomes relevant in time series analysis, when data has been collected about the same entities over time. Thus, as this study does not include a time series analysis, autocorrelation is not relevant for this study (Hardy, 1993; Backhaus, Erichson, Plinke, Weiber, 2006).

Assumption 7) is that the residuals of a model are random, normally distributed variables with a mean of zero. The distribution of the residuals was evaluated based on histograms that are shown in Appendix VII. In case of the histograms for the Finnish model, the residuals seemed to be quite close to a normal distribution with a mean close to zero, but there were more problems with the histograms regarding the German models. Thus, the Kolmogorov-Smirnov test was run for all the models to determine whether the residuals deviate significantly from normality. This test compares the scores in a sample to a normally distributed set of scores with the same mean and standard deviation. (Field, 2009)

The results of the Kolmogorov-Smirnov test can be found in Appendix IX. A significant value of the test (i.e. $p<0.05$) suggests that the distribution of the residuals deviates from normality (Field, 2009). Thus, based on the results, as was expected, all the residuals

regarding the models for Finland were normally distributed. For Germany, the normality of the residuals was confirmed for the models of innovativeness and EO, but not for risk-taking (p=0.02) and proactiveness (p=0.03). These kinds of results that violate the assumption of normally distributed residuals questions the validity of t-tests and F-tests regarding the models (Field, 2009). However, there are authors (e.g. Backhaus, Erichson, Plinke and Weiber, 2006; Field, 2009) who argue that when the data set is large enough, the violation of normally distributed residuals does not have a significant effect on the regression analysis. Backhaus, Erichson, Plinke and Weiber (2006) consider a sample larger than 40 to be a sufficient size for the residuals not to have an impact on the validity of the tests. Thus the t-test and F-tests can be regarded as significant for all the models of both countries.

To conclude, it can thus be confirmed that all the regression models used in this thesis have an appropriate fit with the data and seem to also be generalizable to the population.

7.2 FACTOR ANALYSIS

The data for both countries was factor analyzed by using the principal components method with varimax rotation (Field, 2009) to determine whether the items created to measure EO and its dimensions as well as performance actually were representative of these concepts (Long, 1983). Similar to other researchers (e.g. Kemelgor, 2002; Baron and Tang, 2009), the rotated factor solutions were used for analysis. Rotation maximizes the loading of each variable on one of the extracted factors and at the same time minimizes the loadings on other factors (Field, 2009). Following the Kaiser criterion of selecting factors with eigenvalues larger than one as suggested by Field (2009), the initial rotated factor solutions of both countries for the EO dimensions can be seen in Table 5.

Table 5: Initial factor analyses with all entrepreneurial orientation items included

Rotated Component Matrix Finland[a]

	Component			
	1	2	3	4
Innovativeness 1	,706			
Innovativeness 2	,778			
Innovativeness 3	,762			
Innovativeness 4	,788			
Innovativeness 5	,679			
Risk-taking 1		,687		
Risk-taking 2				,652
Risk-taking 3		,892		
Risk-taking 4		,774		
Proactiveness 1				,791
Proactiveness 2			,594	
Proactiveness 3				,775
Proactiveness 4			,751	
Proactiveness 5			,792	

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.
a. Rotation converged in 9 iterations.

Rotated Component Matrix Germany[a]

	Component			
	1	2	3	4
Innovativeness 1		,647		
Innovativeness 2		,831		
Innovativeness 3	,643			
Innovativeness 4	,761			
Innovativeness 5	,777			
Risk-taking 1			,613	
Risk-taking 2			,575	
Risk-taking 3			,709	
Risk-taking 4			,724	
Proactiveness 1				,906
Proactiveness 2	,648			
Proactiveness 3				,909
Proactiveness 4	,516	,543		
Proactiveness 5	,591			

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.
a. Rotation converged in 5 iterations.

Consistent with Lumpkin and Dess (2001) as well as based on the recommendation of Stevens (2009) regarding a sample size of around 100, a factor loading level of 0.5 was regarded as significant, and thus Table 5 only shows the loadings that exceed this level. These kinds of loadings can be considered consistent with a conservative criterion (Kim and Mueller, 1978). After the initial analysis, there was one item (Proactiveness 4) with a cross-loading higher than 0.5 on two different factors in the German data set. Thus, similarly to e.g. Kreiser, Marino and Weaver (2002) as well as Baron and Tang (2009), this item was removed. Dropping problematic loadings is also a procedure suggested by e.g. Osborne (2008). This was done for both the Finnish and the German data set to maintain comparability and validity of the results (Netemeyer, Durvasula and Lichtenstein, 1991).

After removing the cross-loading item (Proactiveness 4), the factor analyses were run again for both countries in order to see the changes in the data. The combined results of the rotated factor solutions without the removed item can be seen in Table 6. After having the solutions for both countries, these were compared with each other, because as Knight (1997) argues, for the scale to be applicable in both countries, the factor

structure and pattern of factor loadings should be equivalent across the cultures. This comparison can also be seen in table 6, which indicates the consistent factor loadings across the countries with a grey color. The items with consistent factor loadings in both countries were Innovativeness 3, 4, 5, Risk-taking 1, 3, 4, as well as Proactiveness 1 and 3. These items with consistent loadings across countries where then chosen for the final analysis.

Table 6: Comparison of rotated factor loadings of entrepreneurial orientation dimensions in Finnish and German SMEs

Item	Component							
	1		2		3		4	
	FI	DE	FI	DE	FI	DE	FI	DE
Innovativeness 1	,702							,693
Innovativeness 2	,794							,842
Innovativeness 3	,964	,638						
Innovativeness 4	,789	,775						
Innovativeness 5	,663	,774						
Risk-taking 1			,686	,637				
Risk-taking 2				,599	,640			
Risk-taking 3			,900	,691				
Risk-taking 4			,784	,707				
Proactiveness 1					,805	,906		
Proactiveness 2		,673					,708	
Proactiveness 3					,779	,903		
Proactiveness 5		,600					,730	

Based on the consistency of factor analysis in both countries, the final EO scale consists of eight items, three of them measuring innovativeness and risk-taking respectively and two measuring proactiveness. Having a scale consisting of eight items seems to have been a general approach in settings where cultures other than the American one have been investigated, as an eight-item scale has been adopted by e.g. Kreiser, Marino and Weaver (2002), Wiklud and Shepherd (2005) Tang, Tang, Zhang and Li (2007) and by Baker and Sinkula (2009). Additionally, e.g. Zahra and Neubaum (1998) adopted an EO scale with only seven items.

After finding the items with consistent factor loadings across countries, factor analyses were run with the final eight items. The results reported based on the guidelines of Field (2009) can be found in Table 7. The Kaiser-Meyer-Olkin (KMO) measure of sampling

adequacy was calculated for both countries to determine whether the dimensionality of the data could be determined by means of factor analysis (Foster, Barkus and Yavorsky, 2006). The score needs to reach a level of 0.60 to support the reliable use of factor analysis for analyzing data (Foster, Barkus and Yavorsky, 2006). The KMO amounted to 0.72 for Finland and 0.67 for Germany, so factor analysis was an appropriate means of analyzing the dimensions.

Table 7: Results of the final factor analysis for entrepreneurial orientation dimensions

Item	Component					
	1		2		3	
	FI	DE	FI	DE	FI	DE
Innovativeness 3	,898	,730				
Innovativeness 4	,907	,839				
Innovativeness 5	,810	,802				
Risk-taking 1			,657	,652		
Risk-taking 3			,900	,754		
Risk-taking 4			,817	,794		
Proactiveness 1					,902	,918
Proactiveness 3					,894	,906
Eigenvalue	2,42	1,974	2,02	1,886	1,828	1,704
% of variance explained	30,254	24,676	25,244	23,58	22,849	21,299
Cumul var explained	30,254	24,676	55,497	48,256	78,374	69,555
Cronbach's alpha	,867	,727	,760	,623	,799	,862
Cronbach's alpha FI	,776					
Cronbach's alpha DE		,734				
KMO FI	,719					
KMO DE		,669				
N FI	110					
N DE		112				

Based on the Kaiser criterion of eigenvalues greater than one as suggested by Field (2009), the three-dimensionality of EO was confirmed with factor loadings ranging from 0.652 to 0.918. Together these factors accounted for 78.4% of the variance in Finland and 69.6% in Germany. Overall, the pattern of factor loadings is consistent in both settings. The Cronbach's alphas measuring reliability were also above the satisfactory level of 0.7 defined by Nunnally (1978) with 0.776 in Finland and 0.734 in Germany.

Cronbach's alphas were also calculated for the different dimensions of EO as suggested by Covin and Wales (2011) when EO is defined as a multi-dimensional construct. The Cronbach's alphas for the Finnish data were 0.87 for innovativeness, 0.76 for risk-taking and 0.80 for proactiveness, all well above the level of 0.7. The values for the German data were 0.73 for innovativeness, 0.62 for risk-taking and 0.86 for proactiveness. Thus, the Cronbach's alpha for risk-taking in the German data is somewhat too low. However, there are other studies (e.g. Dess, Lumpkin and Covin, 1997; Wiklund, 1999; Wiklund and Shepherd, 2005) reporting a similar overall Cronbach's alpha for EO, so this is not an exception in the research of EO. Also Kreiser, Marino and Weaver (2002) report a Cronbach's alpha below 0.7 to one of their items.

Because the performance measures were also combined into one construct for the final analysis, they were also factor analyzed. These results can be seen in Table 8. All of the four items loaded on one factor in both of the countries, and the factor loadings were rather high ranging from 0.807 to 0.982 in Finland and from 0.800 to 0.918 in Germany. The KMO amounted to 0.814 in Finland and 0.776 in Germany and the Cronbach's alphas of 0.898 and 0.896 for Finland and Germany respectively also indicated a high reliability of the performance measure.

Table 8: Results of the factor analysis for performance

Item	Component	
	FI	DE
Performance 1	,982	,917
Performance 2	,807	,800
Performance 3	,853	,860
Performance 4	,910	,918
Eigenvalue	3,069	3,064
% of variance explained	76,716	76,605
Cronbach's alpha	,898	,896
KMO	,814	,776
N	110	112

Now that it has been shown, how the final constructs of the study have been formed, the focus can be moved to the findings regarding the data and these constructs.

7.3 CORRELATIONS OF VARIABLES

The correlation matrix of the hypothesized independent and dependent variables is shown in Table 9. The correlation matrix reveals that innovativeness is positively associated with performance in both countries. It also seems that companies with higher innovativeness tend to be larger in size and more mature in both countries. Risk-taking seems to be positively associated with performance only in Germany whereas in Finland no significant correlation exists. Firm age and risk-taking are negatively associated with each other in Germany implying that more mature firms would take less risk as their younger counterparts. Similar to performance, no significant correlation is found in Finland between firm age and risk-taking. However, in Finland there is a positive significant association between firm size and risk-taking whereas no significant correlation exists in Germany.

Table 9: Correlation matrix

Variable	2.		3.		4.		5.		6.		7.		8.		9.		10.	
	FI	DE	FI	DE	FI	DE	FI	DE	FI	DE	FI	DE	FI	DE	FI	DE	FI	DE
1. Innovativeness	,426***	,329***	,192**	,226**	,768***	,694**	,254***	,300***	-,144	-,212**	,205**	,254***	,196**	,306***	-,123	,-130	,170*	-,024
2. Risk-taking			,098	,310***	,744***	,679***	,089	,223**	,016	-,244***	,271***	,118	,364***	,068	-,286***	-,004	-,014	,014
3. Proactiveness					,563***	,761***	,157*	,061	-,129	-,086	,101	,132	-,025	-,191**	,089	-,062	,019	,284***
4. EO							,254***	,261***	-,137	-,218**	,268***	,248**	,278***	,078	-,170*	-,116	,086	,130
5. Performance									,145	,122	,484***	,338***	,055	-,013	,064	-,051	-,128	,038
6. Firm age											,424***	,311***	,110	-,123	-,028	,029	-,110	,007
7. Firm size													,224**	-,014	-,045	,025	-,155	,041
8. Manufacturing															-,554***	-,626***	-,057	-,150
9. Service																	-,473***	-,397***
10. Trade																		

*** Correlation significant at the 0.01 level (2-tailed).

** Correlation significant at the 0.05 level (2-tailed).

* Correlation significant at the 0.1 level (2-tailed).

Proactiveness has a weak association to performance in Finland ($p<0.1$ level) and no significant association in Germany. Higher level of EO seems to indicate better performance and a bigger size of the firm in both countries. On the other hand, EO seems to be negatively associated with firm age, but this correlation is significant only in Germany. Finally, better performance seems to indicate larger firm size and a more mature age in both countries. This seems natural, as firms normally need some time to get the business running in an optimal way, which has an impact on performance. All the industry types seem to have some significant correlation at least with one of the EO dimensions in at least one country and because of that, they were all included in the following regression analysis.

Additionally, the correlations between different dimensions of EO are interesting. According to Thorndike (1978) and Kachigan (1982) (cited in Kreiser, Marino and Weaver, 2002), correlations below 0.50 are a sign of a weak relationship between variables. As can be seen in Table 8, the correlations between the EO dimensions are below of this 0.50 level, which justifies looking at EO as a multi-dimensional construct.

All in all, the correlations suggest that it is likely to find some significant relationships between EO, its dimensions and performance in regression analysis, but not all dimensions are going to be proven significant. Furthermore, the correlations justify the examination of EO as a multi-dimensional concept.

7.4 HYPOTHESIS TESTING

The conceptual framework consists of two kinds of hypotheses: the hypotheses one through four address the levels of EO and its dimensions in the two countries, whereas the following hypotheses five through eight are related to the relationship between EO and its dimensions with performance.

Following the method used by Kemelgor (2002), the first four hypotheses were tested based on the mean scores of EO and its dimensions and the levels between the SMEs of the two countries were compared. In case of the hypotheses five through eight, similar to e.g. Covin, Green and Slevin (2006), the testing was based on multiple hierarchical regression analysis. The split into two methods was necessary to capture the specific

features of the data. The reporting of the results is based on the guidelines provided by Field (2009).

Following the method adopted by Kemelgor (2002) in his cross-cultural comparison, the mean scores of the two countries for innovativeness, risk-taking, proactiveness, and EO as a whole were compared. Levene's test was first run to decide whether it was appropriate to use the values based on equal or inequal variances. The results of Levene's test can be seen in Appendix X. Based on the results, p was greater than 0.05 in all other cases except for that of proactiveness (p=0.01). Thus, unequal variances were assumed for proactiveness and equal variances for all the other models. The results of the actual mean comparison can be seen in Table 10.

Table 10: The levels of entrepreneurial orientation and its dimensions in Finnish and German SMEs

Dimension	Mean		t-value	Significance	Std. Error
	FI	DE			
Innovativeness	5,000	4,652	1,959	0,049	0,178
Risk-taking	4,379	4,146	1,418	0,158	0,164
Proactiveness	5,428	4,956	2,483	0,014	0,190
EO	4,935	4,584	2,793	0,006	0,126

The first hypothesis addresses the levels of innovativeness in SMEs of the two countries stating that the level is expected to be higher in the Finnish firms than in their German counterparts. When comparing the mean values of the two countries shown in Table 10, it can be seen that the level of innovativeness in Finnish SMEs is somewhat higher than in the German ones (5.000 vs. 4.652), and that this difference is significant (p=0.049). Thus, Hypothesis 1 is supported.

Hypothesis 2 is related to the levels of risk-taking, suggesting that risk-taking is on a higher level in the German SMEs than in the Finnish ones. Table 10 shows that the level of risk-taking actually seems to be a little higher in the Finnish SMEs, but the difference is not statistically significant (p=0,158). Thus, Hypothesis 2 is not supported.

In Hypothesis 3, it was assumed that proactiveness in Finnish SMEs is on a lower level than in their German counterparts. Based on the means exhibited in Table 10, however, there is a significant difference (p=0.014) in the levels of proactiveness, but the Finnish

SMEs seem to be more proactive than the German ones (5.428 vs. 4.956). Thus, Hypothesis 3 is not supported.

Hypothesis 4 states that the EO score of the Finnish SMEs is lower than in the German SMEs. Similar to proactiveness, there is a significant difference ($p=0.006$) in the levels of EO, but the Finnish SMEs seem to be somewhat more entrepreneurially oriented than their German counterparts (4.935 vs. 4.584). Thus, hypothesis 4 is not supported.

After having tested the hypotheses regarding the levels of EO and its dimension in the SMEs of the two countries, the next step was the examination of hypotheses five through eight considering the relationship between EO, its dimensions and performance. Similar to e.g. Covin, Green and Slevin (2006), the method of hierarchical multiple linear regression was used. Thus, the base model with only the control variables was investigated as the first level of hierarchy. In the second level the independent variable of each model was added.

The results of the regression analyses can be found in Table 11. Based on the regression of the base model shown in column two of the table (named “Control variables”), only firm size emerges as a significant control variable with its coefficient ranging around 0.3 ($P<0.01$). However, because the R^2 value of the models as a whole increased when the other control variables were also retained, despite of them not reaching significance, they were used in the final analysis. Wiklund (1999), for instance, used the same kind of an approach in his study.

Table 11: Regression results

Variables	Control variables				Model, control variables			
	β		Std. Error		β		Std. Error	
	FI	DE	FI	DE	FI	DE	FI	DE
Constant (B)	3,120	3,516	,562	,648	1,546	2,255	,727	,782
Firm age	,008	,036	,562	,049	,064	,089	,048	,048
Firm size	,305**	,350**	,015	,021	,300**	,287**	,015	,021
Manufacturing	,068	-,139	,436	,548	-,026	-,244	,430	,553
Service	,104	-,150	,486	,576	,062	-,192	,467	,562
Trading	-,056	-,053	,530	,630	-,125	-,085	,517	,615
Innovativeness					,302**	,264**	,103	,113
R^2	,118	,136			,199	,193		
Constant (B)					2,406	2,313	,775	,816
Firm age					,008	,103	,050	,050
Firm size					,310**	,308**	,015	,021
Manufacturing					,032	-,158	,445	,537
Service					,127	-,171	,487	,565
Trading					-,045	-,068	,529	,618
Risk-taking					,132	,220*	,115	,121
R^2					,133	,179		
Constant (B)					2,413	3,467	,811	,867
Firm age					,024	,038	,015	,050
Firm size					,295**	,348**	,050	,021
Manufacturing					,055	-,136	,437	,567
Service					,085	-,148	,488	,585
Trading					-,068	-,054	,530	,637
Proactiveness					,113	,009	,114	,094
R^2					,130	,136		
Constant (B)					,989	1,943	,932	,962
Firm age					,050	,099	,049	,050
Firm size					,296**	,294**	,015	,021
Manufacturing					-,022	-,143	,437	,538
Service					,086	-,147	,471	,566
Trading					-,089	-,085	,516	,624
EO					,267**	,210*	,156	,149
R^2					,181	,174		

Standardized regression coefficients are displayed in the table.

** P< 0.01

* P< 0.05

Because the hypotheses five through eight were built to also assume that the strength of impact of EO and its dimensions on performance would differ between the firms of the two countries, this had to be tested. This was done by tracking, if there were significant differences between the regression coefficients of the Finnish and German SMEs. This approach was discussed in 6.9.3, and Table 12 shows the results.

Table 12: Significance of the difference of regression coefficients

Variable	t-value	Significance
Innovativeness*Country	,406	,685
Risk-taking*Country	-,801	,424
Proactiveness*Country	,634	,527
EO*Country	,452	,652

The first hypothesis regarding the relationship of EO dimensions on performance is Hypothesis 5. It states that innovativeness has a positive impact on SME performance and that this effect is larger in the Finnish SMEs than in the German ones. As Table 11 shows, the correlation coefficients are significant in both countries ($p<0.01$) indicating that innovativeness is positively associated with SME performance in both countries. However, based on Table 12, the interaction term indicating the difference between the country regression coefficients for innovativeness is not significant. Thus, even though the impact of innovativeness on performance is positive in both countries, and there seems to be a difference (0.302 vs. 0.264), the lack of significant difference in the correlation coefficients indicates that Hypothesis 5 is only partially supported.

Hypothesis 6 states that the positive impact of risk-taking on performance is higher in German SMEs than in their Finnish counterparts. The relationship between risk-taking and performance is positive in both countries, but only significant ($p<0.05$) in Germany. Furthermore, based on the result in Table 12, there is no significant difference in the regression scores between the SMEs of the two countries. Thus, because risk-taking only seems to significantly impact risk-taking in German SMEs and the coefficient difference between the countries is not significant, Hypothesis 6 is not supported.

Hypothesis 7 addresses proactiveness and its positive impact on performance stating that this positive relationship is stronger in German SMEs than in the Finnish ones. Based on the results of Table 11, the relationship between proactiveness and performance is positive but insignificant in both countries. Furthermore, there is no significant difference between the regression coefficients. There results indicate that Hypothesis 7 is not supported.

According to Hypothesis 8, the positive impact of EO on performance is stronger in German SMEs than in their Finnish counterparts. There is a significant relationship between EO and performance in both countries ($p<0.01$ in Finnish SMEs and $p<0.05$ in German SMEs), but the relationship seems to be stronger in the Finnish SMEs than in their German counterparts (0.267 vs.0.210). However, based on the results of Table 12, the difference of the regression coefficients is not significant and thus it cannot be stated that the positive impact of EO on performance would be higher in the Finnish SMEs. Thus, Hypothesis 8 is only partially supported: the positive relationship exists in both countries, but there is no significant difference between the SMEs of the two countries.

Table 13 summarizes the findings discussed above regarding the hypotheses. In conclusion, it can be stated that only Hypothesis 1 is fully supported, whereas Hypotheses 5 and 8 gain partial support. The rest of the hypotheses are not supported by the data, but this lack of support does not indicate that there are no findings regarding these hypotheses, quite on the contrary. These unexpected findings just require more discussion and analysis.

Table 13: Summary of the results of the hypotheses

Hypothesis	Result
H1: The level of innovativeness in Finnish SMEs is higher than the level of innovativeness in German SMEs.	Supported
H2: The level of risk-taking in Finnish SMEs is lower than the level of risk-taking in German SMEs.	Not supported
H3: The level of proactiveness in Finnish SMEs is lower than the level of proactiveness in German SMEs.	Not supported
H4: The level of EO in Finnish SMEs is lower than the level or EO in German SMEs.	Not supported
H5: The positive impact of innovativeness on performance in Finnish SMEs is stronger than the positive impact of innovativeness on performance in German SMEs.	Partially supported
H6: The positive impact of risk-taking on performance in Finnish SMEs is weaker than the positive impact of risk-taking on performance in German SMEs.	Not supported
H7: The positive impact of proactiveness on performance in Finnish SMEs is weaker than the positive impact of proactiveness on performance in German SMEs.	Not supported
H8: The positive impact of EO on performance in Finnish SMEs is weaker than the positive impact of EO on performance in German SMEs.	Partially supported

To identify the possible reasons behind the findings that differ from those expected, the first section will discuss the findings and the possible reasons behind them in more detail.

7.5 DISCUSSION

The results of this thesis suggest that first of all, the young SMEs of both countries included in this study do in general score rather high in all the dimensions of EO. Secondly, it can be stated that there are differences in the levels of EO and its dimensions in the Finnish and German SMEs, and thirdly that EO and its dimensions impact the performance of young SMEs at least to some extent. The findings also signal, that as suggested by Lumpkin and Dess (1996), in the early developmental phases of firms, not all EO dimensions are equally or necessarily associated with business performance.

When it comes to the mean scores of the dimensions of EO, the lowest mean score is that of German SMEs in risk-taking with a value of 4.146 (on a scale from 1 to 7) and the highest is the proactivenss of Finnish SMEs (5.428). These are satisfactory levels since the cultural setting in either of the countries is not the most optimal for entrepreneurship and EO (Hayton, George and Zahra, 2002). Furthermore, the levels are similar to those found by Hughes and Morgan (2007) in their study of young U.K. high technology firms located at incubators.

Interestingly, only one of the dimensions of EO, innovativeness, emerges as a clear dominating contributor to firm performance in both countries. As expected, most strongly based on the clearly more feminine culture in Finland, the innovativeness score in Finnish SMEs is higher than in their German counterparts. Innovativeness, however, does not have a significantly stronger impact on performance in the Finnish firms even though the absolute size of the impact for innovativeness is higher for the Finnish firms than for the German ones. This result may be caused by the fact that the absolute difference in the regression coefficients is not large (0.302 vs. 0.264) as such, and the samples are not big in size. Thus, there is variation in the levels of performance in the data of both countries and the differences do not reach significance. However, the positive innovativeness-performance relationship in both countries suggests that the entrepreneurs are able to utilize their innovativeness in such ways that it also affects perfomance. This finding is in line with the conclusions of Hult, Hurley and Knight (2004), Verhees and Meulenberg (2004) and Hughes and Morgan (2007), who all found that innovativeness is positively associated with firm performance.

The variance explained by the model of innovativeness-performance relationship is in both countries higher than the variance explained by the model that considers the relationship between EO and performance. In the model of innovativeness-performance relationship, the R^2 value for Finnish firms amounts to 0.199 and for German SMEs to 0.193 indicating that innovativeness explains more than 19% of the variation in SME performance. The corresponding values for the EO-performance models are 0.181 in Finnish firms and 0.174 in the German ones. Thus, this suggests that innovativeness alone contributes more positively to firm performance than does EO as a whole. Such a result further emphasizes the importance of innovative behavior for the young SMEs and their success. Due to the lack of EO studies where the dimensions have also been treated separately, there is not much previous evidence regarding this kind of a finding. However, Hughes and Morgan (2007) found that only innovativeness and proactiveness contributed to firm performance, whereas risk-taking did not support performance thus suggesting that the influence of the EO dimensions on performance may be context specific.

All in all, the findings of this study regarding the variance explained by the model are rather similar to the findings of other studies in the field. Wiklund's (1999) model regarding the EO-performance relationship in Swedish SMEs produced a rather high R^2 value of 0.26, whereas Wiklund and Shepherd (2005) reported a value of 0.18 and Covin, Green and Slevin a value of 0.21 for the models regarding the direct EO-performance relationship. These are quite close especially to the variances explained by the innovativeness-performance models of both country settings in this study. In this context it is again not possible to say, how significant a role innovativeness has played in those results mentioned in this paragraph because EO has only been measured as a uni-dimensional construct.

In addition, contrary to what was expected based on Hofstede's cultural values, the level of EO is higher in Finnish SMEs than in their German counterparts, but there is no significant difference in the strenght of the impact on performance even though the absolute value of the Finnish regression cofficient is higher (0.267 vs. 0.210). The higher level of EO in the Finnish firms is likely to be explained by the afore-mentioned fact that innovativeness emerges as the only significant force behind performance in

both countries. In line with what was expected, the level of innovativeness is higher in the Finnish firms than in the German ones, and as it has such a huge impact of EO as a whole, this also results to a higher level of EO in the Finnsih firms, when the impact of the other dimensions is not as high. Similar to the case of innovativeness, as the regression coefficient difference is not large in absolute values and the sample size is modest, the variation in values leads to insignificant differences.

When the level of risk-taking is compared between the two countries, as opposed to what was hypothesized, no significant difference exists. This differs from previous findings in the sense that Mueller and Thomas (2000) for instance found that, as the cultural distance from USA (low power distance, individualistic, masculine and uncertainty avoidant) grows, the levels of risk-taking decrease. They posit that this is mainly due to changes in the level of uncertainty avoidance, which does not differ much between Finland (59) and Germany (65). Thus, the similar level of uncertainty avoidance may explain why no significant difference exists between the levels of risk-taking.

On the other hand, a significant difference in proactiveness emerges, but the order is counterintuitive, as the Finnish firms score higher than the German ones. As discussed before, the most significant difference in the cultural values of these two countries is that the German national culture is remarkably more masculine than the Finnish one. This was also the biggest reason as to why the German SMEs were expected to score higher in both risk-taking and proactiveness, because masculinity has been considered to be supportive for both of these dimensions (Hofstede, 1980). Even though the finding is counterintuitive to the main stream results in the field (Hayton, George and Zahra, 2002), there, is also a study by Kreiser, Marino, Dickson and Weaver (2010) where masculinity was not found to impact the levels of neither risk-taking nor proactiveness. This finding would explain why the results of the levels of risk-taking and proactiveness in this study are not as was hypothesized.

Another reason as to why the levels of risk-taking and proactiveness are not as was expected, may be that entrepreneurs do not necessarily represent a typical person within a culture. Many studies have shown (e.g. McGrath, MacMillan and Scheinberg, 1992;

Palich and Bagby, 1995; Mitchell et al., 2002) that entrepreneurs are generally more alike with each other across cultures, when it comes to attitudes towards such aspects as the dimensions of EO, than they are similar to the non-entrepreneurs in their own culture. Thus, even though culture may play some role also among entrepreneurs from different countries due to the embeddedness of the firms in their national cultures (Thomas and Mueller, 2000), the differences may at least not be as large as among non-entrepreneurs, because entrepreneurs seem to share some universal characteristics. This may especially be the case when it comes to Finland and Germany because the countries are not very far from each other to begin with when it comes to cultural differences (Hofstede, 1980). Thus, the combination of shared characteristics among entrepreneurs and the similarity of the national cultures may explain why the levels of risk-taking and proactiveness between the two countries are not as was hypothesized.

As discussed in chapter 3 of this thesis, the results of studies regarding the relationship between risk-taking and firm performance have been mixed. Furthermore, Hughes and Morgan (2007) seem to be the only ones having studied this relationship in an SME context before this thesis study, so drawing conclusions is challenging. Hughes and Morgan (2007) found no relationship between risk-taking and customer performance and a negative one between risk-taking and product performance. The case seems to be similar in this study as well, because risk-taking has a positive impact on performance in the SMEs of both countries, but this relationship is only significant in the German firms. As the levels of risk-taking in the firms of the two countries are not significantly different from each other, it is interesting that risk-taking is positively associated with firm performance only in the German context.

The reason for the significant association of risk-taking for performance only in the German SMEs may lie in growth-orientation. Based on the GEM report, entrepreneurs in Germany are more growth-oriented than Finnish entrepreneurs (Kelley, Bosma and Amorós, 2011). Even though there is no significant difference in the levels of risk-taking between the two countries as such, the more growth-oriented attitude of the Germans may explain why risk-taking positively impacts firm performance in the German SMEs, but does not have an effect on it in the Finnish firms. This may be because the Germans' growth orientation may direct their risk-taking to such projects

that create growth and this growth in turn positively effects performance. Thus, even though the Finnish entrepreneurs are as willing to take risk, they may not be able to direct their risk-taking as efficiently towards productive projects as the German entrepreneurs. Thus, this finding also suggests that a certain kind of quality as such does not directly lead to better results, but as Wiklund and Shepherd (2003) argue, gaining better performance also requires competence to utilize these qualities in the best possible way.

Lumpkin and Dess (2001) found that proactiveness has the most impact on firm performance in companies that operate in industries that are in early stages of their development. Furthermore, also Hughes and Morgan (2007) found a positive proactiveness-performance relationship in the high technology industry that can be considered to be in early stages of its development in the sense that the changes are rapid and the development is fast. This supportiveness of an early stage industry for proactiveness may be one of the explaining factors as to why contrary to e.g. Lumpkin and Dess (2001) and Hughes and Morgan (2007), no significant relationship between proactiveness and performance was found in this study. If the majority of the firms in this study operate in more mature industries, a proactive behavior may not be such a useful tool for improving performance, because activities such as scanning and experimentation may become very costly in an environment where the market is mature and performance needs to be gained by winning market share from an existing competitor (Lumpkin and Dess, 2001). Unfortunately, confirming this assumption based on the data and knowledge about the firms included in this study is not possible.

All in all, Lumpkin and Dess' (1996) argument concerning the dimensionality and significance of EO can provide an explanation as to why no significant relationship between proactiveness and performance was found in either of the countries and between risk-taking and performance in the Finnish context. Namely, Lumpkin and Dess (1996) argue that both internal and external factors such as business environment and organizational culture affect how well the EO dimensions explain the nature and success of a new entry. This suggests that there is no one universal best mix of the levels of EO dimensions that would always provide with an ideal positive performance implication, but rather the final result is dependent on such factors as the operating

environment, internal culture and the business life cycle (Lumpkin and Dess, 1996; Hughes and Morgan, 2007).

As was discussed in section 7.3, the correlations between different EO dimensions are well below the level of 0.5, which indicates a weak relationship between these dimensions (Thorndike (1978) and Kachigan (1982) cited in Kreiser, Marino and Weaver, 2002). Actually the highest correlation can be found between innovativeness and risk-taking in the Finnish SMEs (0.426) whereas risk-taking and proactiveness are not even significantly correlated in the Finnish context. In the German data, innovativeness and risk-taking have similar to the Finnish context the highest correlation (0.329) and the correlation between innovativeness and proactiveness (0.192) is the lowest. This gives strong support for Lumpkin and Dess' (1996) view of defining EO as a multi-dimensional concept, where its dimensions do not necessarily need to co-vary.

The strong support for the multi-dimensionality of EO justifies studying the relationship of the EO dimensions and performance also separately. These results also confirm the statement of Kreiser, Marino and Weaver (2002) that the adoption of a uni-dimensional construct may limit the conclusions and results in many research settings. If EO would have only been treated as a uni-dimensional concept in this study, a positive EO-performance relationship would have been found, but the contribution of innovativeness on it would have remained more unclear.

Thus, similar to Hughes and Morgan (2007), little evidence is found for the widely accepted belief that EO has a universally positive impact on firm performance. Similar to the findings of Hughes and Morgan (2007), the results of this thesis suggest that all the dimensions of EO seem not to be of equal importance for firm performance at least in young SMEs. The usefulness of EO and its dimensions may differ depending on the developmental phase of the company as well as its industry (Lumpkin and Dess, 1996; 2001), and adopting an EO should be done with consideration of the specific situation and setting of the firm (Hughes and Morgan, 2007). This is because implementing EO as all its dimensions does not necessarily guarantee improved performance (Hughes and Morgan, 2007) and the implementation of it can be rather costly (Covin and Slevin,

1991). Therefore these results question the approach of unconditionally accepting and appreciating the positive value of EO.

Finally, in addition to manifesting the significance of innovativeness on SME performance and providing support for the multi-dimensionality of EO, the results of this study also show that national culture may have some impact on the levels of entrepreneurship within a country. However, the differences may not be as clear between entrepreneurs across countries, because these people seem to possess some similar qualities regardless of their country of origin that separate them from non-entrepreneurs.

8 CONCLUSION

This final chapter summarizes the findings of this study. It then discusses the theoretical contribution of this thesis and provides with some managerial implications based on the results. As the following step it describes the limitations of the study, and finally gives some suggestions for studies to be conducted in the future.

8.1 MAIN FINDINGS

The main findings of this thesis are two-fold when it comes to the hypotheses tested. They relate to the levels of EO and its dimensions in the two countries on one hand, and to the impact of these on firm performance on the other hand. Additionally, there is one more key finding outside of the scope of the research questions as such that relates to the construct of EO.

Firstly, it was found that despite of the fact that neither the national culture of Finland nor the national culture of Germany is most ideally supportive for entrepreneurship, the scores of EO and its dimensions reach a level of above four on a scale from one to seven in all the dimensions. This suggests a satisfactory level of EO in both countries (Hughes and Morgan, 2007). Secondly, in all the dimensions, except for risk-taking, there is a significant difference between the SMEs of the two countries, but the differences are not large in size. This is likely to be explained by the fact that as has been shown, the national cultures of the two countries are not far from each other.

An interesting finding of this study is that Finnish SMEs score higher in all the dimensions of EO where a significant difference exists. This suggests that even though culture may be able to explain certain differences between countries, entrepreneurs still seem to share some general features. Thus simply drawing conclusions based on the national culture, in which the entrepreneurs are embedded, may lead to misleading results.

Innovativeness is the only EO dimension that alone has a significant positive impact on performance in the SMEs of both countries. Even though a positive relationship between EO and performance was also found in both countries, the explanatory power

of the innovativeness-performance model is higher. This finding contributes to previous research regarding the value of innovativeness for firms.

There seems to be no significant relationship between proactiveness and performance in the SMEs of either of the countries, and risk-taking only affects performance in the German firms. These results suggest that the possession of a certain orientation or quality as such does not automatically lead to performance implications, but it rather is the ability and competence of utilizing it that matters. In case of the risk-taking of the German firms, this ability may stem from the better competence of investing in projects that produce growth, because based on the GEM results the German entrepreneurs are more growth-oriented than their Finnish counterparts. As Hughes and Morgan (2007) suggest, the young firms included in this study may not always be able to make a full and effective use of EO because they do not have enough resources and knowledge in utilizing this resource intensive orientation.

These results about the influences of EO and its dimensions on performance, as well as the fact that most variance is explained by the innovativeness-performance model, support the view of Lumpkin and Dess (1996) as well as Hughes and Morgan (2007) in that all dimensions of EO do not contribute to firm performance at least in every situation and setting. Thus, young firms must carefully consider the application of EO so that it truly adds value and contributes to performance, because a blind adoption of EO may lead to wastage of resources (Hughes and Morgan, 2007) especially because EO is a resource consuming strategy (Covin and Slevin, 1991).

The results of this thesis also provide support for the multi-dimensional view of EO and show that separately studying the performance implications of the EO dimensions reveals more information about the value of these dimensions. Based on the results of this study, it can be stated that innovativeness plays a significant role in staying competitive and succeeding. It seems to be the single most important factor for young firms. Furthermore, based on these findings, there is support for the view of Hughes and Morgan (2007) that studying EO as a gestalt concept potentially hides weaknesses in its real value to firms.

In sum, if the focus is turned back to the research questions posed in the introductory part of this thesis, the answer to the first research question is that Finnish and German SMEs exhibit rather similar levels of EO and its dimensions, but there is still a significant difference between the countries. The Finnish firms exhibit higher levels of innovativeness, proactiveness and EO than their German counterparts. With risk-taking the scores of the firms do not differ from each other. In terms of the second research question, it can be stated that a general positive relationship between EO and performance can be found in the SMEs of both countries. Innovativeness alone, however, has a higher impact on performance in the firms of both countries, whereas proactiveness does not influence performance. In terms of risk-taking, a positive performance implication can only be found for the German SMEs. Finally, when it comes to the third research question, it can be stated, that even though it seems that there are differences in the strengths of performance influences between countries, these are not statistically significant. Thus, the impact of the EO dimensions is equally strong in the SMEs of both countries.

8.2 THEORETICAL CONTRIBUTION

This thesis examines the levels of EO in Finnish and German SMEs and analyzes whether EO and its dimensions have differing impacts on firm performance in the firms of these two countries. It contributes to the field by answering the call of Kemelgor (2002), Wiklund and Shepherd (2005) as well as Slevin and Terjesen (2011) for increasing understanding about EO and its performance implications in other cultural contexts than the U.S. and in comparing the EO-performance relationship in cross-cultural sense. This study adds a cross-cultural study to the very scarce research in this specific field. It also seems to be the first study in the field that thoroughly concentrates on the requirements of a cross-cultural study through the whole research process. Thus, it may function as a guideline for further future cross-cultural research in the field.

This study seems to be the only one in addition to that of Hughes and Morgan (2007) to separately look at the performance implications of EO and its all three dimensions, and further, as the first one does this in a cross-cultural setting. The study results confirm the previous findings of e.g. Hult, Hurley and Knight (2004), Verhees and Meulenberg (2004) as well as Hughes and Morgan (2007) about the positive association between

innovativeness and performance. It also similar to other studies (e.g. Covin and Slevin, 1988; Zahra and Covin, 1995; Wiklund, 1999; Wiklund and Shepherd, 2005) finds a positive EO-performance relationship. On the other hand, this study does not find a clear positive implication of risk-taking and performance thus adding to the contradictory results of this relationship ranging from positive (Gilley, Walters and Olson, 2002) via no significant relationship (Avlonitis and Salavou, 2007) to a negative association (Bromiley, 1991). Finally, the results of this study do not support the previous results of e.g. Lumpkin and Dess (2001) and Hughes and Morgan (2007) about the positive impact of proactiveness on performance. Thus, all in all, this study sheds more light on the impact mechanisms of EO and confirms Lumpkin and Dess' (1996) as well as Hughes and Morgan's (2007) view that different EO dimensions do not at least always mutually influence firm performance even though that may seem to be the case when EO is analyzed as a uni-dimensional concept. The usefulness of EO in all its dimensions seems to be context specific.

The results of this thesis contribute to the discussion about the definition of the EO concept as uni- versus multi-dimensional by confirming Lumpkin and Dess' (1996) view that not all the EO dimensions play an equal role in affecting firm performance. Thus, it functions as a proof and encouragement for future studies to adopt a multi-dimensional view of EO against the mainstream approach and to analyze where the positive implications actually stem from.

This thesis is the first one to extensively combine the information from various different studies regarding the connections between EO, its dimensions, firm performance and Hofstede's culture dimensions. This was necessary for the hypothesis development and summarizes much of the research that has previously been dispersed. Thus, this thesis can serve as a basis for future cross-cultural studies in the field of EO.

8.3 MANAGERIAL IMPLICATIONS

Because the results of this study clearly show that adopting an EO does not necessarily lead to the ideal level of improved performance, the founder managers of SMEs should have a closer look at their capabilities and analyze whether these capabilities and orientations add value, and on the other hand, how resource consuming maintaining

them is. The founders should then only concentrate on those aspects that truly contribute to the success of the firm.

Uniformly investing in all the EO dimensions is not an advantageous approach to improving performance and creating value, because as has been shown in this study, the mere concentration on innovativeness seems to lead to better performance for young SMEs than adopting EO as a whole. Thus improving innovativeness and the possibilities of realizing new ideas and approaches may lead to better results. This also indicates investment in people within the company as innovativeness highly stems from the human resources of the company (Hughes and Morgan, 2007). Thus it is important to consider what kind of training and other motivating factors can be offered to people.

Finally, it seems that at early stages of the development, founder managers should carefully consider whether undertaking proactiveness pays off because it does not seem to have a positive implication on performance, but may still be resource consuming to maintain. Thus, it is worth close analysis to determine whether the existing proactiveness can be put to better use or if it should be decreased.

It is also likely to be useful to keep analyzing the development of the company as well as the business environment in order to see, whether for instance a more proactive approach may become a source of improved performance at a later stage of the firm development. The same applies to risk-taking, since as has been discussed, the most beneficial mix of entrepreneurial features may change from one situation to another, so staying alert to possible changes that may require adjustments is likely to be a reasonable strategy.

8.4 LIMITATIONS

As in any study, there are also limitations to this thesis study, and the main cause for limitations stems from the cross-cultural comparative approach.

The questionnaire used for data collection had not been developed for the specific needs of this thesis only, but to measure a larger amount of different aspects of interest in the whole research project. Thus, it also included questions that were not of interest for this thesis, but of others utilizing the same questionnaire. The larger amount of questions

extended the answering time, which may have caused some people not to fully concentrate until the end of the questionnaire or quit answering. This, however, should not be a significant limitation, since the answering time amounted to only 12-15 minutes.

The data collection in both countries was realized with same kinds of methods, but considering the larger size of the German market, the German data set is likely to be somewhat too small in size, which indicates that the data is not necessarily fully representative of the population. In Finland, on the other hand, this should not be a problem, as based on the approximation of the population size, the sample size exceeded the requirements. Additionally, the due to the earlier start of the research project in Germany, the German firms were answering questions regarding the year 2010 whereas in Finland the last full year of operations was 2011. This may have caused some distortions in the data. However, it is not uncommon to have data from different years, as Su, Xie and Li (2011) also utilized a data set in which the data was collected during two different years. Furthermore, the possible lack of construct equivalence is always present in cross-cultural studies (Leung, 2008), but as back-translation (Knight, 1997) was used in both countries, this should not be a cause of concern.

When it comes to the survey methodology of the study, this may also have caused some limitations. Self-administered online surveys have a tendency to lead to low response rates (Kolb, 2008), but this cannot be regarded as a serious limitation in this study, because the response rates were satisfactory for a survey subjected to the founders of the firms (Cycyota and Harrison, 2006; Baruch and Holtom, 2008). Also surveying a large population does not allow such a strict control over the process and variables as for example does a case approach (Kolb, 2008).

Due to the comparative nature of the study, some item reduction was required based on the factor analysis to ensure the comparability of EO and its dimensions between the two countries. This indicates that it may have been possible to derive some more information based on the data, if the countries would have been kept completely separate from each other. Thus some results may not be as clear or significant in this

cross-cultural setting than they might have been if the countries would have been studied alone.

Due to the item reduction, only two items measuring proactiveness emerged with consistent loadings for both of the countries. According to Kim and Mueller (1978), there should be at least three items loading on each factor, which does not make the two-item solution of proactiveness ideal. However, Kim and Mueller (1978) also state that having a variable with high loadings is often of higher importance than just having many items with moderate loadings. As in this case the lowest proactiveness item loading amounts to 0.894, this should not cause problems for the construct validity.

Finally, culture was the only contextual factor taken into account in a broad sense, while also considering some environmental factors. There, however, may be also other factors affecting the level of EO in these countries, such as educational system, that are outside of the scope of this thesis. Furthermore, against the current trend in the studies regarding the EO-performance relationship, culture was not used as an actual moderating factor. This is not a weakness as such, but if some moderators would have been taken into account, the explanatory power of the models may have increased.

8.5 SUGGESTIONS FOR FUTURE RESEARCH

In this study questions regarding culture were not included into the questionnaire, which limits the empirical tests that could be run. Thus, the next step would be to conduct a comparative study with cultural measures included in the regression analyses to more closely understand where the possible differences between countries stem from.

Because the cross-cultural research in the field of EO as a whole is scarce, there is space for different kinds of country comparisons. A beneficial starting point in this field may be a larger research setting with more than just two countries to see, whether some further patterns can be revealed. It would be fruitful to compare on the other hand countries such as the U.S., where entrepreneurship is already highly developed to some countries where the development is still on its way.

The results of this study suggest that it is not actually the concept of EO that has a positive impact on performance, but rather the strongest simple impact stems from

innovativeness. Because previous studies have not comprehensively studied the relationship between performance and the single dimensions of EO as well as the concept as a whole in one study, it may be that the other dimensions have been given too much credit for positively impacting performance. Thus, future studies should do similar analysis to the one made in this study, but with larger data sets to see, whether innovativeness arises as the most significant dimension when it comes to improving performance.

In addition to conducting comparisons among a wider set of countries, the cross-country comparisons even between two countries could be done among young SMEs similar to the ones in this study to see, whether the role of innovativeness would be as dominating in those settings than in the firms included in this study. On the other hand, the same kind of an approach could also be adopted in larger firms to possibly reveal the significance of the other EO dimensions. As has been mentioned previously in this study, adopting an EO does not come without costs and thus managers should know whether trying to be innovative, risk-taking and proactive at the same time actually pays off.

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APPENDICES

APPENDIX I: ACCOMPANYING LETTER OF THE SURVEY E-MAIL

Dear (first name last name),

The material collected in this questionnaire is used as research data in a cooperation project between Aalto University School of Economics and the University of Cologne. The contact information of the target companies has been collected from public internet sources as well as from Fonecta. The purpose of the study is to identify success factors of new venture creation and development in Finland and Germany. The target companies are young firms who are located at business incubators or technology- or science parks. The data collection is a one-time project and answering the questionnaire does not require any further actions later on. The collected data will be handled with full confidentiality.

The research includes studying and analyzing data. In this study and in the analysis following it, the ethical and professional guidelines of research will be followed. The results of the research will be utilized at least in a Master's thesis, but possibly also in publications of the scientific domain at a later stage. The answers given by you will be handled so that the information you have given will not be connected to your company. You can receive the results of the study afterwards by writing your e-mail address at the end of the study. The electronic data consisting of all responses will be archived for the use of Aalto University School of Economics and the University of Cologne.

Answering the questionnaire takes 12-15 minutes, and you can fill it in via this link:

<A href="#code_complete_http#">#code_complete#</A>

Further information can be given by Päivi Piirala
paivi.piirala[at]aalto.fi
0407013288

Thank you very much for your responses and support for the project!

With kind regards,
Päivi Piirala, Master student in entrepreneurship at Aalto and Thorsten Semrau,
Assistant Professor at University of Cologne

APPENDIX II: MEASURES OF ENTREPRENEURIAL ORIENTATION AND PERFORMANCE

Innovativeness 1	We highly value new product lines.
Innovativeness 2	When it comes to problem solving, we value creative new solutions more than solutions that rely on conventional wisdom.
Innovativeness 3	We consider ourselves an innovative company.
Innovativeness 4	Our business is often the first to market with new products and services.
Innovativeness 5	Competitors in this market recognize us as leaders in innovation.
Risk-taking 1	We encourage people in our company to take risks with new ideas.
Risk-taking 2	We value new strategies/plans even if we are not certain that they will always work.
Risk-taking 3	To make effective changes to our offering, we are willing to accept at least a moderate level of risk of significant losses.
Risk-taking 4	We engage in risky investments (e.g. new employees, facilities, debt, stock options) to stimulate future growth.
Proactiveness 1	We consistently look for new business opportunities.
Proactiveness 2	Our marketing efforts try to lead customers, rather than respond to them.
Proactiveness 3	We work to find new businesses or markets to target.
Proactiveness 4	We incorporate solutions to unarticulated customer needs in our products and services.
Proactiveness 5	We continuously try to discover additional needs of our customers of which they are unaware.
Performance 1	Last year we achieved a higher sales growth than our (direct/indirect) competitors.
Performance 2	Last year we achieved a higher growth on number of employees than our (direct/indirect) competitors.
Performance 3	Last year we achieved a higher profit growth than our (direct/indirect) competitors.
Performance 4	Last year we achieved a higher market share growth than our (direct/indirect) competitors.

APPENDIX III: STANDARDIZED RESIDUALS OF REGRESSION MODELS

Casewise Diagnostics Innov_FI[a]

Case Number	Std. Residual	Performance_ FI	Predicted Value	Residual
1	-2,385	1,00	4,2213	-3,22128
26	-2,384	3,00	6,2202	-3,22015
63	-2,061	1,00	3,7833	-2,78326
76	-2,192	1,00	3,9602	-2,96023
88	2,093	7,00	4,1731	2,82687

a. Dependent Variable: Performance_FI

Casewise Diagnostics R-T_FI[a]

Case Number	Std. Residual	Performance_ FI	Predicted Value	Residual
26	-2,381	3,00	6,3447	-3,34470
88	2,170	7,00	3,9509	3,04912

a. Dependent Variable: Performance_FI

Casewise Diagnostics Proac_FI[a]

Case Number	Std. Residual	Performance_ FI	Predicted Value	Residual
1	-2,321	1,00	4,2661	-3,26608
26	-2,224	3,00	6,1297	-3,12974
88	2,026	7,00	4,1500	2,85002

a. Dependent Variable: Performance_FI

Casewise Diagnostics EO_FI[a]

Case Number	Std. Residual	Performance_ FI	Predicted Value	Residual
1	-2,263	1,00	4,0901	-3,09011
15	2,022	6,00	3,2394	2,76065
26	-2,212	3,00	6,0197	-3,01970
76	-2,160	1,00	3,9491	-2,94910
88	2,022	7,00	4,2395	2,76047

a. Dependent Variable: Performance_FI

Casewise Diagnostics Innov_DE[a]

Case Number	Std. Residual	Performance_DE	Predicted Value	Residual
27	2,407	7,00	3,6135	3,38654
87	-2,061	1,00	3,9002	-2,90022

a. Dependent Variable: Performance_DE

Casewise Diagnostics R-T_DE[a]

Case Number	Std. Residual	Performance_DE	Predicted Value	Residual
27	2,318	7,00	3,7117	3,28825
72	2,082	7,00	4,0467	2,95326

a. Dependent Variable: Performance_DE

Casewise Diagnostics Proac_DE[a]

Case Number	Std. Residual	Performance_DE	Predicted Value	Residual
27	2,491	7,00	3,3772	3,62279

a. Dependent Variable: Performance_DE

Casewise Diagnostics EO_DE[a]

Case Number	Std. Residual	Performance_DE	Predicted Value	Residual
27	2,340	7,00	3,6681	3,33190

a. Dependent Variable: Performance_DE

APPENDIX IV: COOK'S DISTANCE MEASURES

Residuals Statistics Innov_FI[a]

	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	2,1184	6,2202	3,6932	,65393	110
Std. Predicted Value	-2,408	3,864	,000	1,000	110
Standard Error of Predicted Value	,163	,791	,317	,126	110
Adjusted Predicted Value	2,1746	7,9043	3,7017	,72512	110
Residual	-3,22128	2,82687	,00000	1,31277	110
Std. Residual	-2,385	2,093	,000	,972	110
Stud. Residual	-2,943	2,129	-,003	1,018	110
Deleted Residual	-4,90434	2,92482	-,00848	1,44814	110
Stud. Deleted Residual	-3,060	2,167	-,005	1,028	110
Mahal. Distance	,600	36,441	5,945	6,251	110
Cook's Distance	,000	,647	,016	,064	110
Centered Leverage Value	,006	,334	,055	,057	110

a. Dependent Variable: Performance_FI

Residuals Statistics R-T_FI[a]

	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	2,5650	6,3447	3,6932	,53493	110
Std. Predicted Value	-2,109	4,957	,000	1,000	110
Standard Error of Predicted Value	,170	,822	,331	,126	110
Adjusted Predicted Value	2,6860	8,0862	3,7076	,62482	110
Residual	-3,34470	3,04912	,00000	1,36559	110
Std. Residual	-2,381	2,170	,000	,972	110
Stud. Residual	-2,936	2,205	-,005	1,015	110
Deleted Residual	-5,08624	3,14759	-,01438	1,49796	110
Stud. Deleted Residual	-3,052	2,248	-,006	1,024	110
Mahal. Distance	,605	36,331	5,945	6,021	110
Cook's Distance	,000	,641	,015	,062	110
Centered Leverage Value	,006	,333	,055	,055	110

a. Dependent Variable: Performance_FI

Residuals Statistics Proac_FI[a]

	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	2,5296	6,1297	3,6932	,52948	110
Std. Predicted Value	-2,198	4,602	,000	1,000	110
Standard Error of Predicted Value	,173	,847	,331	,130	110
Adjusted Predicted Value	2,5820	7,9103	3,7043	,62368	110
Residual	-3,26608	2,85002	,00000	1,36771	110
Std. Residual	-2,321	2,026	,000	,972	110
Stud. Residual	-2,786	2,092	-,003	1,016	110
Deleted Residual	-4,91028	3,12536	-,01114	1,50439	110
Stud. Deleted Residual	-2,883	2,128	-,005	1,026	110
Mahal. Distance	,662	38,534	5,945	6,228	110
Cook's Distance	,000	,631	,016	,061	110
Centered Leverage Value	,006	,354	,055	,057	110

a. Dependent Variable: Performance_FI

Residuals Statistics EO_FI[a]

	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	2,2466	6,0197	3,6932	,62415	110
Std. Predicted Value	-2,318	3,728	,000	1,000	110
Standard Error of Predicted Value	,167	,808	,321	,125	110
Adjusted Predicted Value	2,3201	7,6499	3,7005	,68833	110
Residual	-3,09011	2,76065	,00000	1,32719	110
Std. Residual	-2,263	2,022	,000	,972	110
Stud. Residual	-2,745	2,060	-,002	1,015	110
Deleted Residual	-4,64995	2,86440	-,00736	1,45459	110
Stud. Deleted Residual	-2,837	2,093	-,004	1,024	110
Mahal. Distance	,642	37,224	5,945	6,162	110
Cook's Distance	,000	,581	,015	,057	110
Centered Leverage Value	,006	,342	,055	,057	110

a. Dependent Variable: Performance_FI

Residuals Statistics Innov_DE[a]

	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	1,7183	5,7822	3,3549	,66529	112
Std. Predicted Value	-2,460	3,648	,000	1,000	112
Standard Error of Predicted Value	,164	,702	,327	,130	112
Adjusted Predicted Value	1,5489	5,9729	3,3545	,68031	112
Residual	-2,90022	3,38654	,00000	1,36832	112
Std. Residual	-2,061	2,407	,000	,973	112
Stud. Residual	-2,093	2,437	,000	1,004	112
Deleted Residual	-2,99077	3,46999	,00040	1,45957	112
Stud. Deleted Residual	-2,128	2,497	-,001	1,011	112
Mahal. Distance	,523	26,649	5,946	5,709	112
Cook's Distance	,000	,092	,010	,016	112
Centered Leverage Value	,005	,240	,054	,051	112

a. Dependent Variable: Performance_DE

Residuals Statistics R-T_DE[a]

	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	2,1548	6,1847	3,3549	,64089	112
Std. Predicted Value	-1,873	4,415	,000	1,000	112
Standard Error of Predicted Value	,160	,701	,329	,134	112
Adjusted Predicted Value	2,1799	6,5014	3,3547	,65537	112
Residual	-2,80792	3,28825	,00000	1,37992	112
Std. Residual	-1,979	2,318	,000	,973	112
Stud. Residual	-2,078	2,354	,000	1,004	112
Deleted Residual	-3,09674	3,39245	,00016	1,47385	112
Stud. Deleted Residual	-2,112	2,407	,000	1,011	112
Mahal. Distance	,427	26,124	5,946	5,839	112
Cook's Distance	,000	,081	,010	,016	112
Centered Leverage Value	,004	,235	,054	,053	112

a. Dependent Variable: Performance_DE

Residuals Statistics Proac_DE[a]

	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	2,4116	5,7928	3,3549	,56058	112
Std. Predicted Value	-1,683	4,349	,000	1,000	112
Standard Error of Predicted Value	,169	,716	,338	,134	112
Adjusted Predicted Value	2,1174	5,9919	3,3542	,57916	112
Residual	-2,76068	3,62279	,00000	1,41445	112
Std. Residual	-1,898	2,491	,000	,973	112
Stud. Residual	-1,941	2,519	,000	1,006	112
Deleted Residual	-2,88748	3,70580	,00073	1,51509	112
Stud. Deleted Residual	-1,968	2,587	,000	1,012	112
Mahal. Distance	,499	25,922	5,946	5,669	112
Cook's Distance	,000	,078	,010	,016	112
Centered Leverage Value	,004	,234	,054	,051	112

a. Dependent Variable: Performance_DE

Residuals Statistics EO_DE[a]

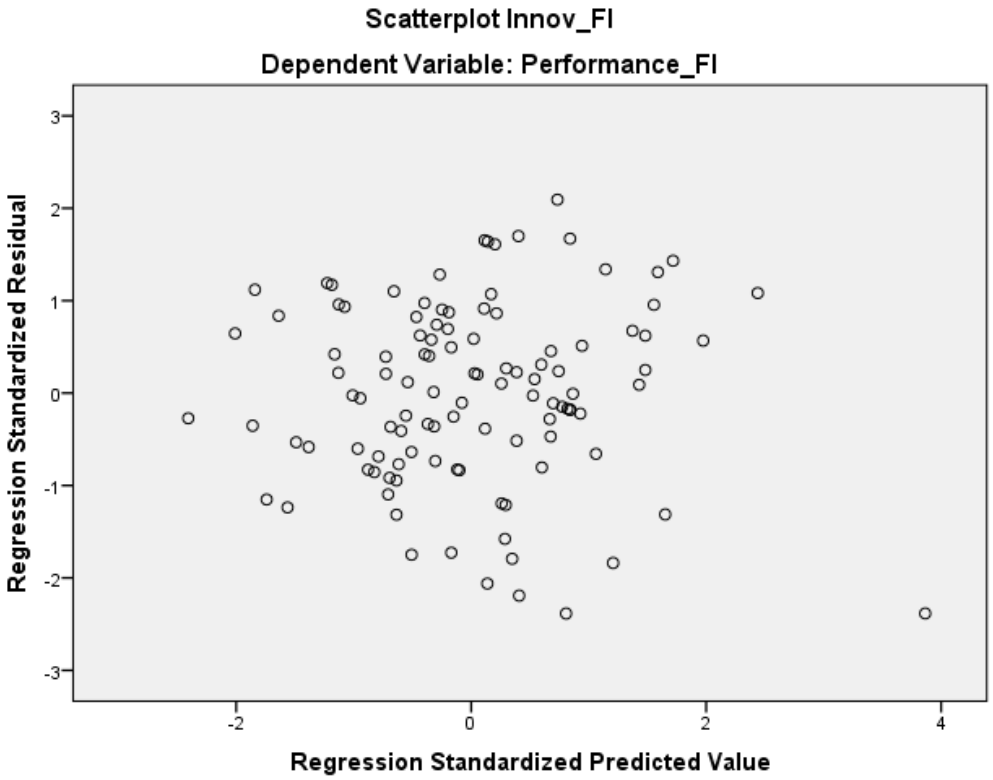
	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	2,1830	6,0494	3,3549	,63062	112
Std. Predicted Value	-1,858	4,273	,000	1,000	112
Standard Error of Predicted Value	,162	,697	,331	,132	112
Adjusted Predicted Value	2,1288	6,3176	3,3526	,64633	112
Residual	-2,80150	3,33190	,00000	1,38464	112
Std. Residual	-1,968	2,340	,000	,973	112
Stud. Residual	-2,071	2,376	,001	1,004	112
Deleted Residual	-3,10232	3,43284	,00229	1,47831	112
Stud. Deleted Residual	-2,104	2,430	,000	1,011	112
Mahal. Distance	,454	25,630	5,946	5,696	112
Cook's Distance	,000	,074	,010	,016	112
Centered Leverage Value	,004	,231	,054	,051	112

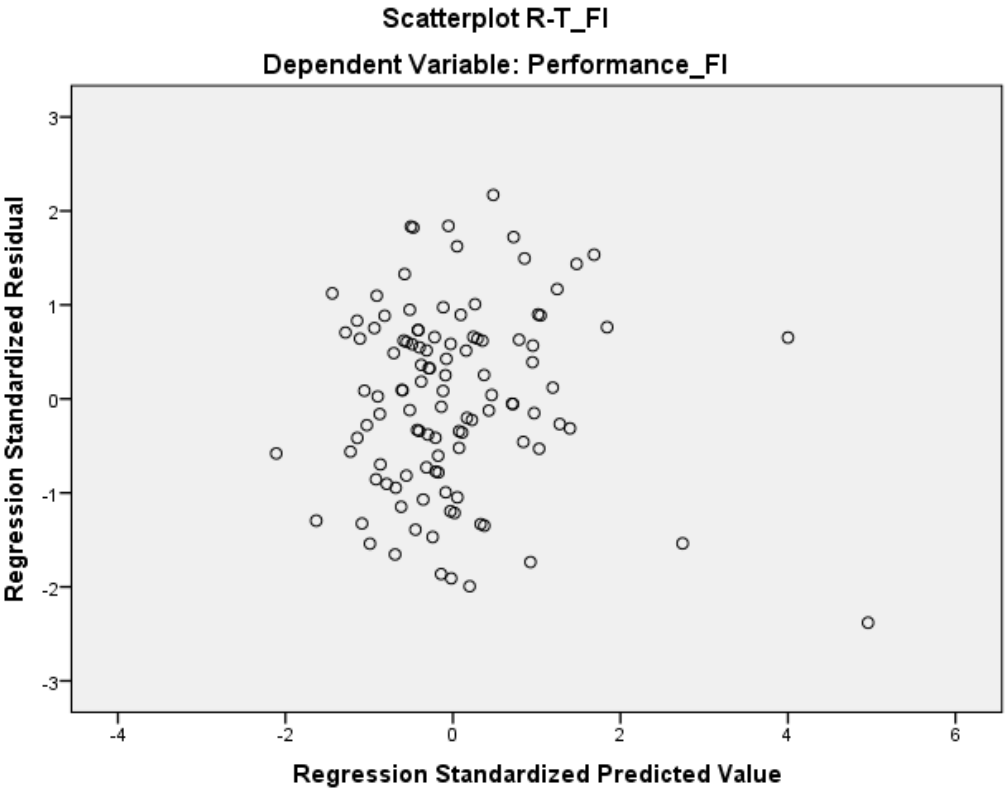
a. Dependent Variable: Performance_DE

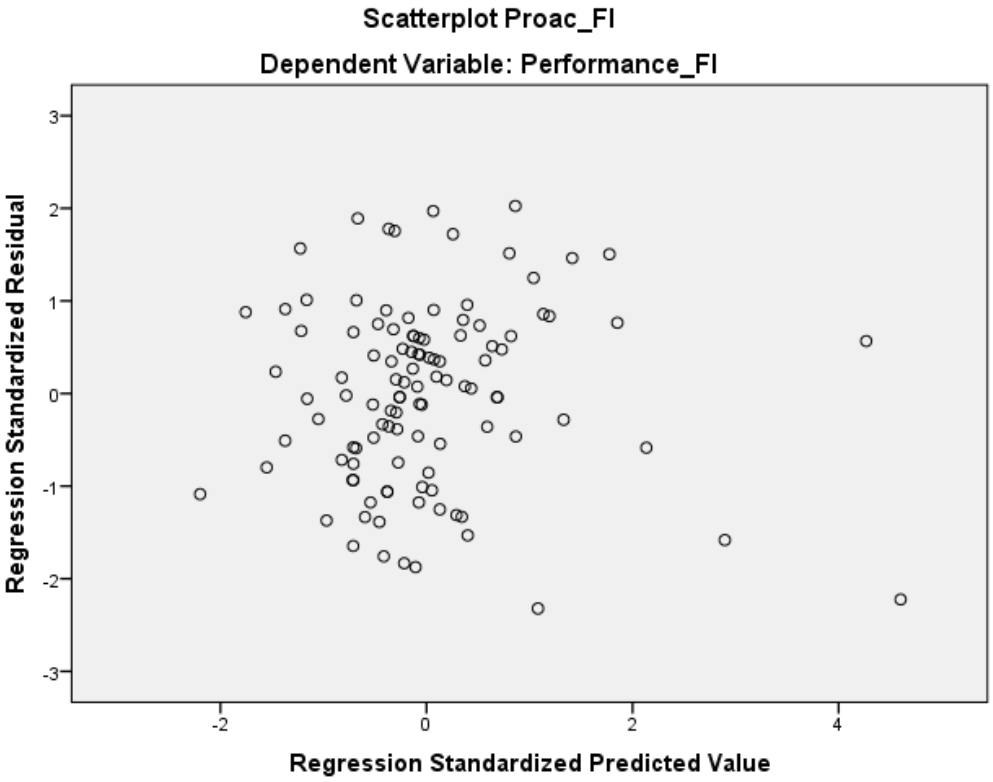
APPENDIX V: VIF VALUES FOR CHECKING MULTICOLLINEARITY

Model	Collinearity statistics			
	Tolerance		VIF	
	FI	DE	FI	DE
Base (control variables only)				
Age	,883	,930	1,132	1,076
Size	,865	,942	1,156	1,061
Service Firm	,436	,358	2,292	2,795
Trading Firm	,618	,579	1,618	1,727
Manufacturer	,557	,410	1,797	2,441
Innovativeness				
Age	,854	,892	1,171	1,121
Size	,865	,886	1,157	1,128
Service Firm	,432	,354	2,315	2,827
Trading Firm	,596	,573	1,677	1,745
Manufacturer	,525	,379	1,906	2,636
Innovativeness	,886	,818	1,129	1,222
Risk-taking				
Age	,883	,849	1,132	1,177
Size	,864	,909	1,158	1,101
Service Firm	,430	,356	2,326	2,806
Trading Firm	,615	,577	1,626	1,732
Manufacturer	,531	,408	1,884	2,450
Risk-taking	,854	,891	1,171	1,123
Proactiveness				
Age	,867	,905	1,153	1,105
Size	,858	,918	1,165	1,089
Service Firm	,430	,350	2,324	2,855
Trading Firm	,614	,573	1,630	1,746
Manufacturer	,552	,387	1,810	2,587
Proactiveness	,966	,850	1,035	1,176
EO				
Age	,862	,850	1,160	1,177
Size	,864	,875	1,157	1,142
Service Firm	,435	,358	2,298	2,795
Trading Firm	,612	,570	1,635	1,753
Manufacturer	,520	,410	1,924	2,441
EO	,886	,856	1,129	1,168

APPENDIX V: PLOTS FOR CHECKING HETEROSCEDASTICITY



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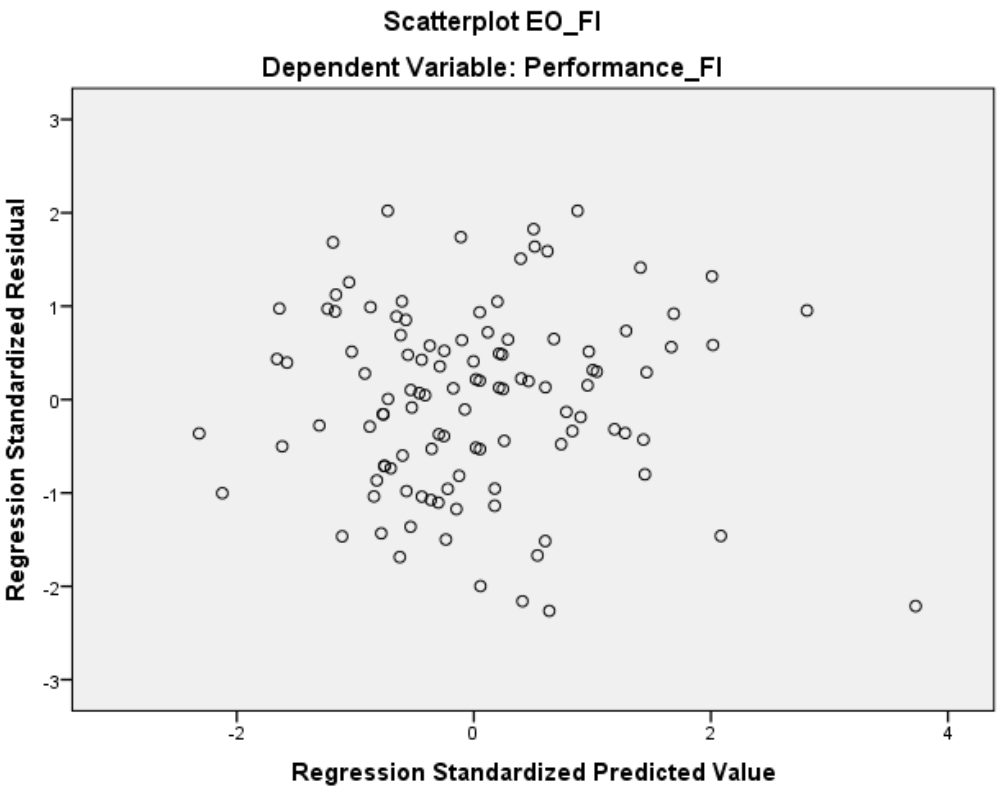
0
2
4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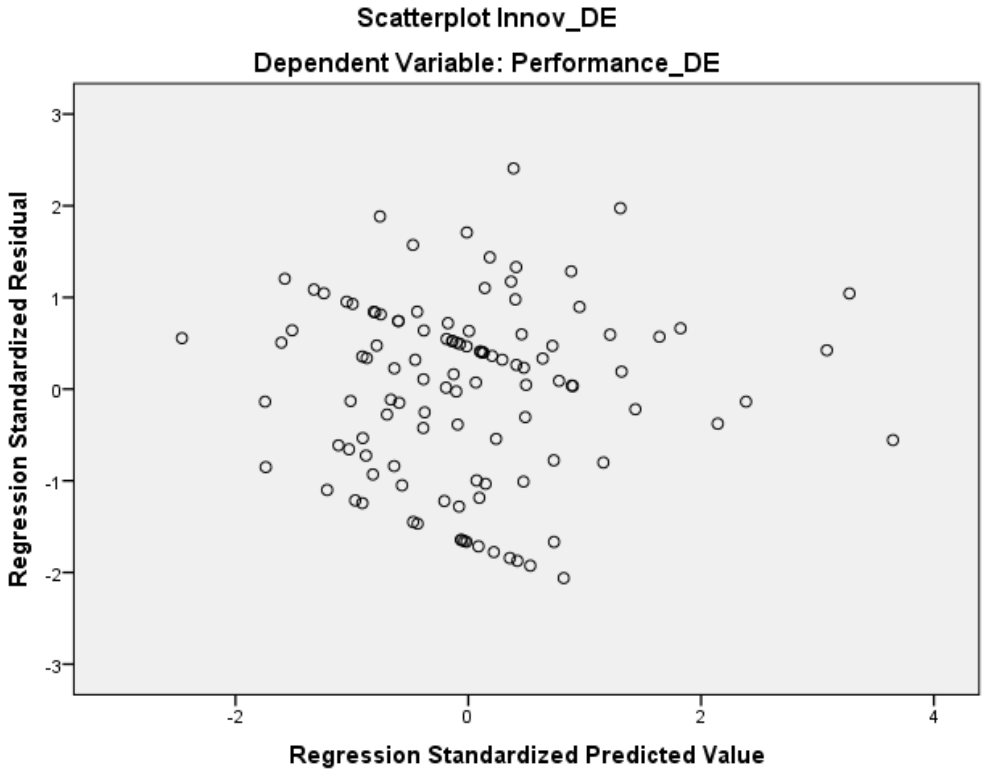
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Regression Standardized Predicted Value
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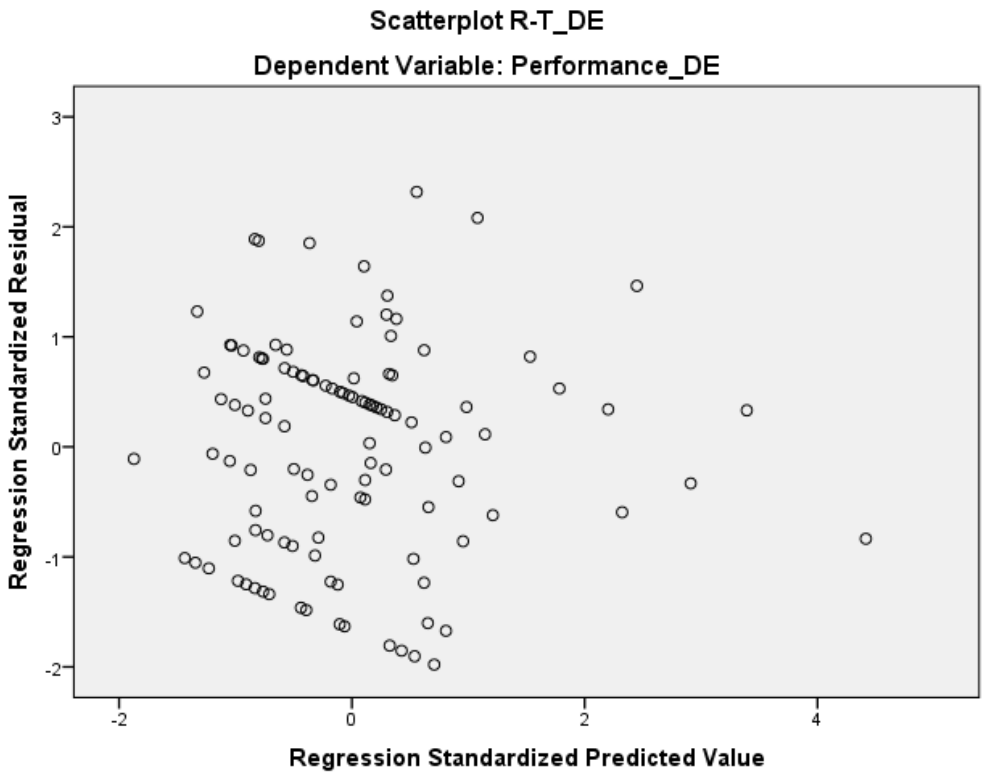
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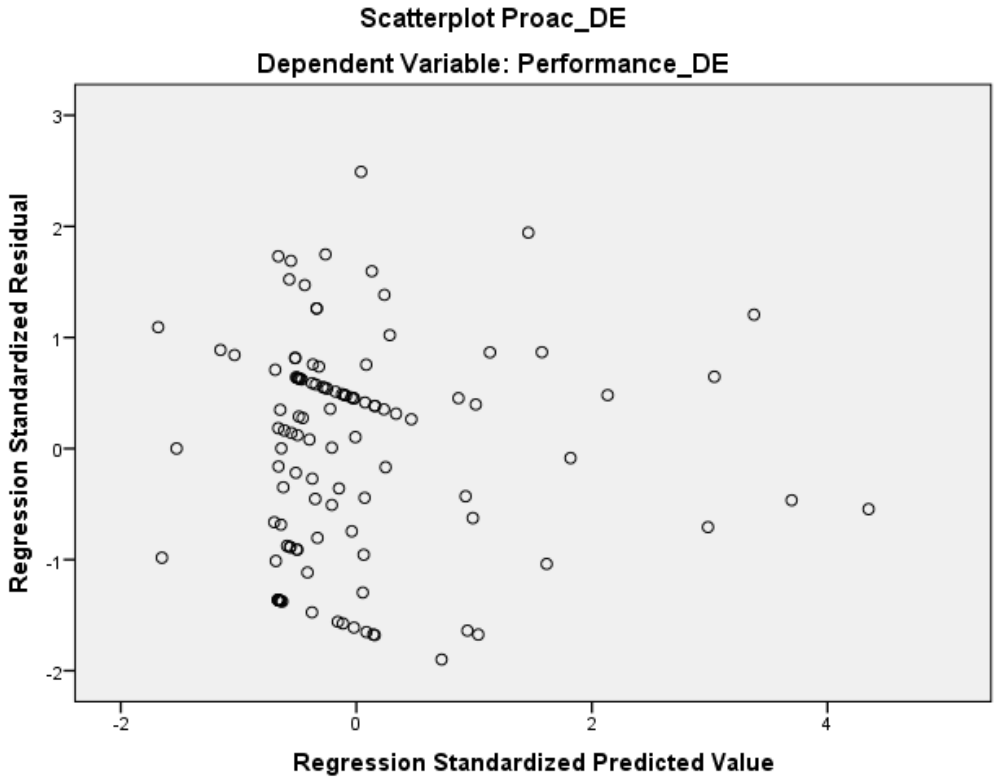
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Regression Standardized Predicted Value
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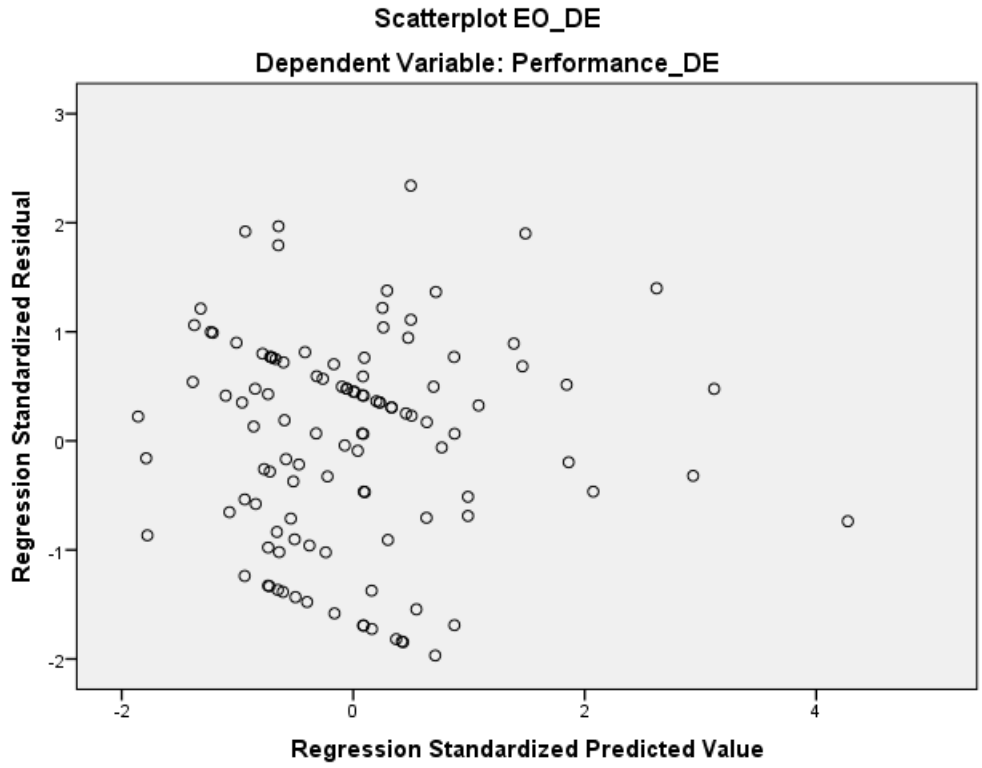
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Dependent Variable: Performance_DE
Regression Standardized Residual
Regression Standardized Predicted Value
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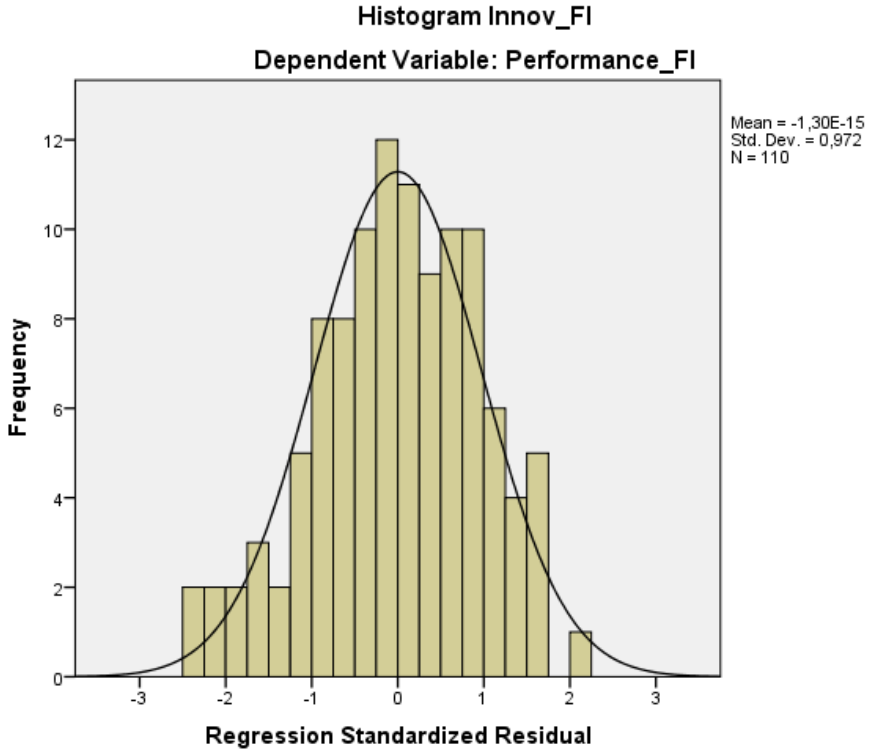
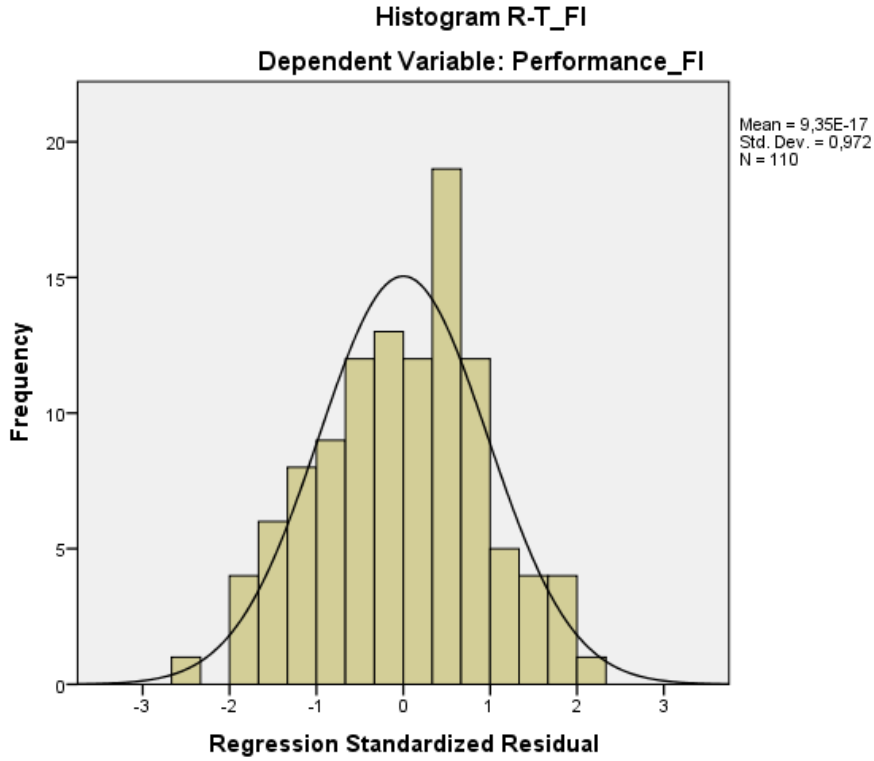
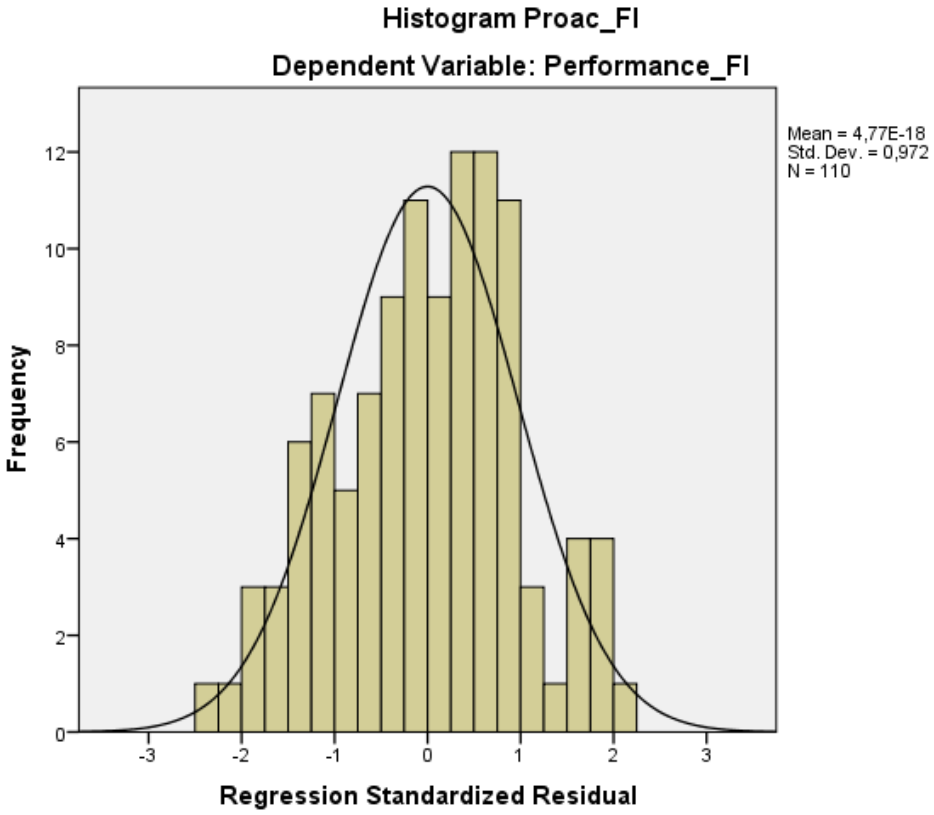
4

APPENDIX VII: HISTOGRAMS OF DISTRIBUTION OF RESIDUALS



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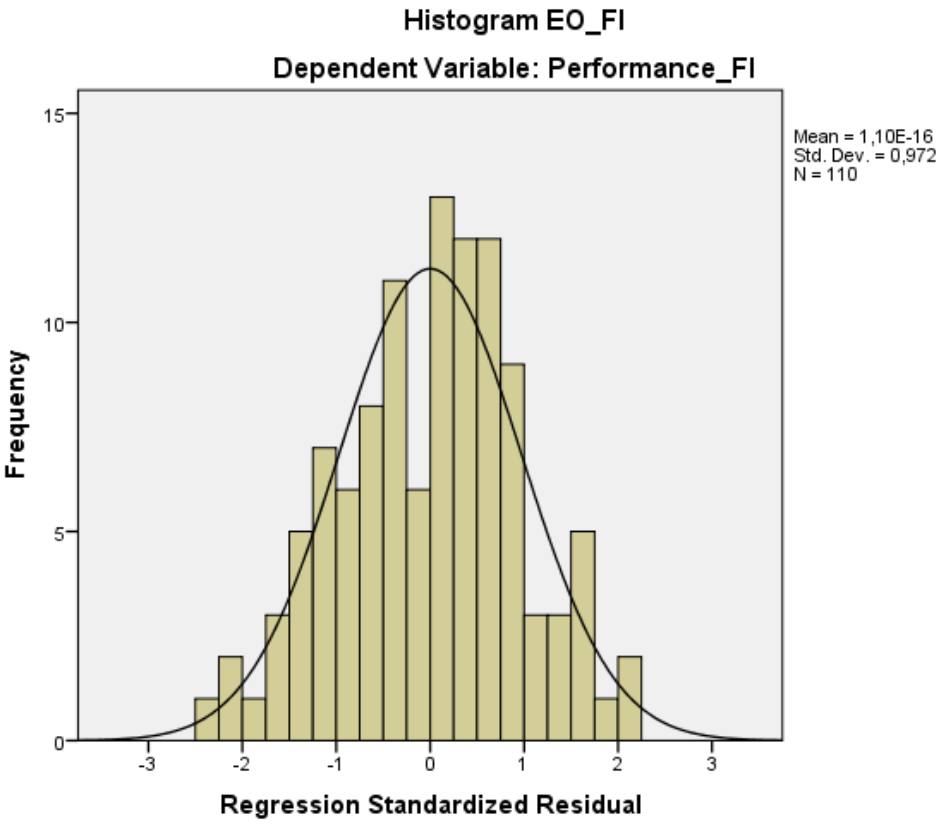
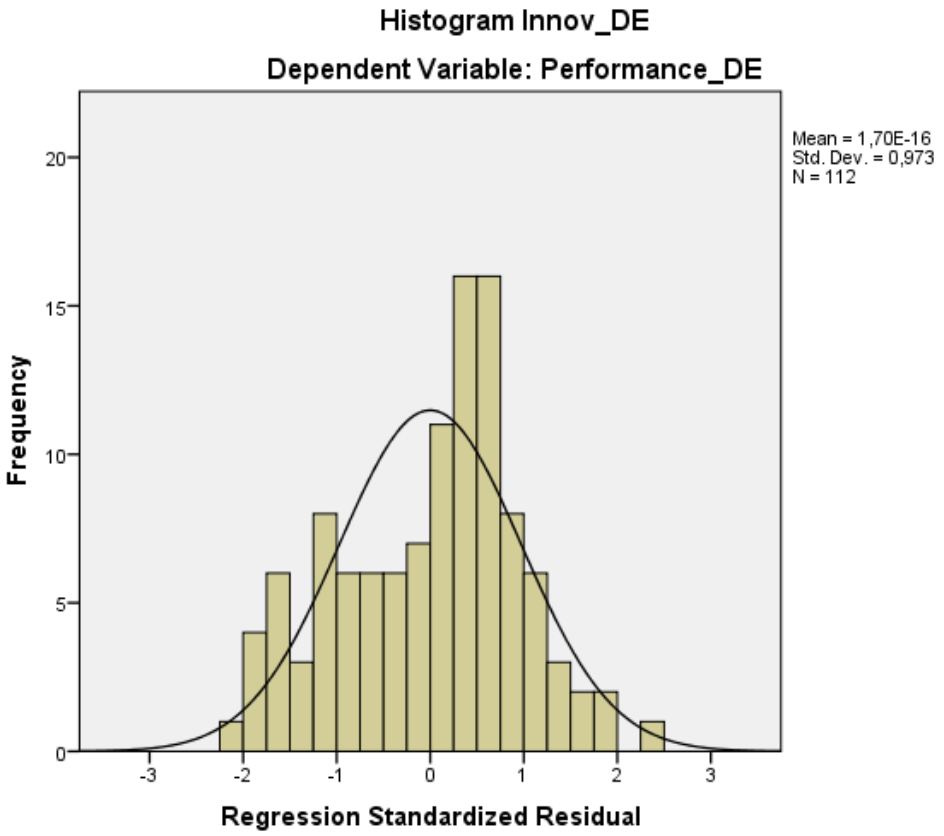
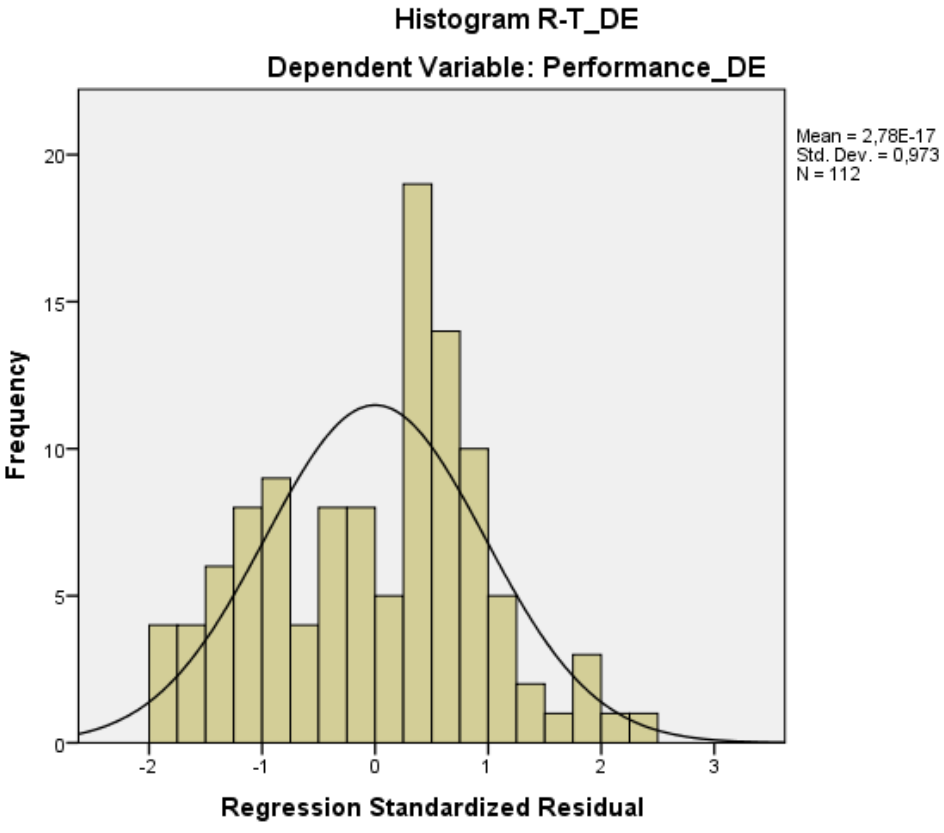
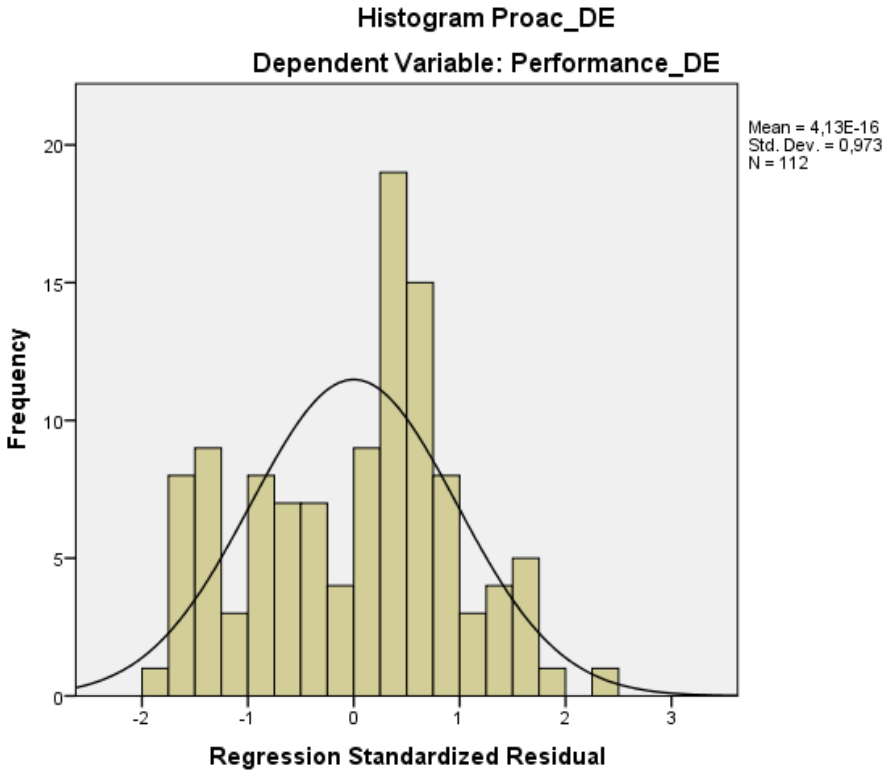
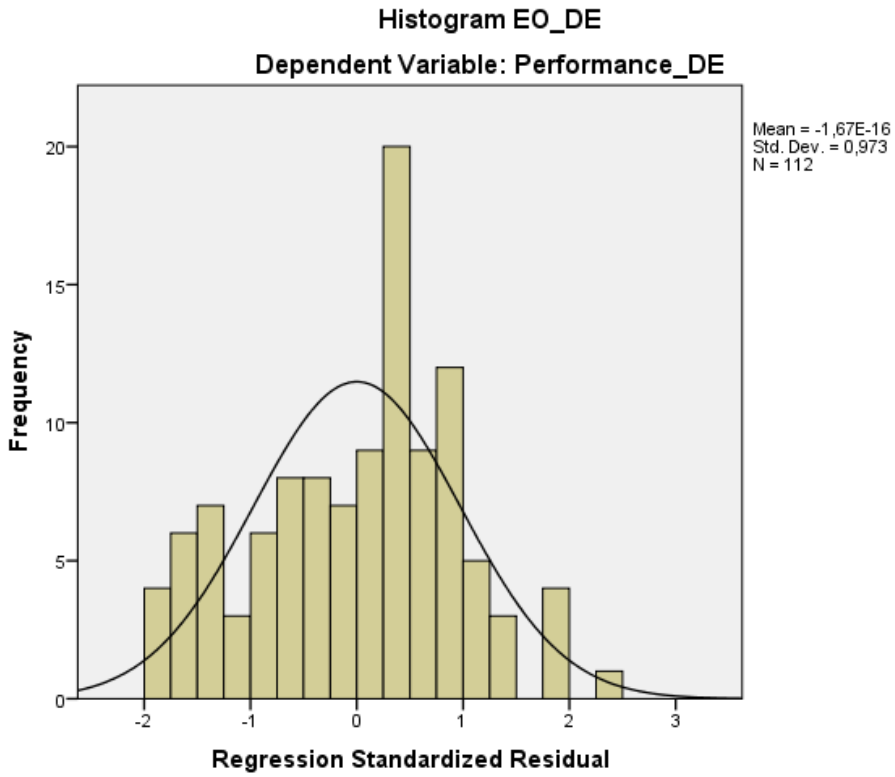
Dependent Variable: Performance_FI
Mean = 4,77E-18
Std. Dev. = 0,972
N = 110
Frequency
Regression Standardized Residual


Histogram EO_FI
Dependent Variable: Performance_FI
Mean = 1,10E-16
Std. Dev. = 0,972
N = 110
Frequency
Regression Standardized Residual


Histogram Innov_DE
Dependent Variable: Performance_DE
Mean = 1,70E-16
Std. Dev. = 0,973
N = 112
Frequency
Regression Standardized Residual


Histogram R-T_DE
Dependent Variable: Performance_DE
Mean = 2,78E-17
Std. Dev. = 0,973
N = 112
Frequency
Regression Standardized Residual


Histogram Proac_DE
Dependent Variable: Performance_DE
Mean = 4,13E-16
Std. Dev. = 0,973
N = 112
Frequency
Regression Standardized Residual


Histogram EO_DE
Dependent Variable: Performance_DE
Mean = -1,67E-16
Std. Dev. = 0,973
N = 112
Frequency
Regression Standardized Residual

APPENDIX IX: THE DISTRIBUTIONS OF RESIDUALS BASED ON KOLMOGOROV-SMIRNOV TEST

Tests of Normality Innov_FI

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Standardized Residual	,046	110	,200*	,986	110	,306

*. This is a lower bound of the true significance.

a. Lilliefors Significance Correction

Tests of Normality R-T_FI

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Standardized Residual	,074	110	,174	,988	110	,471

a. Lilliefors Significance Correction

Tests of Normality Proac_FI

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Standardized Residual	,066	110	,200*	,987	110	,346

*. This is a lower bound of the true significance.

a. Lilliefors Significance Correction

Tests of Normality EO_FI

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Standardized Residual	,060	110	,200*	,989	110	,490

*. This is a lower bound of the true significance.

a. Lilliefors Significance Correction

Tests of Normality Innov_DE

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Standardized Residual	,102	112	,006	,973	112	,023

a. Lilliefors Significance Correction

Tests of Normality R-T_DE

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Standardized Residual	,110	112	,002	,977	112	,050

a. Lilliefors Significance Correction

Tests of Normality Proac_DE

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Standardized Residual	,107	112	,003	,969	112	,010

a. Lilliefors Significance Correction

Tests of Normality EO_DE

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Standardized Residual	,097	112	,012	,974	112	,028

a. Lilliefors Significance Correction

APPENDIX X: RESULTS OF LEVENE'S TESTS

Dimension	Levene's statistics	Significance
Innovativeness	0,477	0,490
Risk-taking	1,056	0,305
Proactiveness	10,587	0,010
EO	1,959	0,163