

Entrepreneurial orientation and firm performance: A comparative study of Austria, Liechtenstein and Switzerland

M. Filser^{1*} and F. Eggers²

¹University of Liechtenstein (FL)
Fürst-Franz-Josef-Strasse, 9490 Vaduz, Principality of Liechtenstein
matthias.filser@uni.li

²Menlo College
1000 El Camino Real, Atherton, CA 94027, USA
fabian.eggers@menlo.edu

As noted by numerous studies entrepreneurial orientation (EO) is assumed to have a positive effect on firm performance. However, there is an ongoing debate concerning the importance of each of the constructs' dimensions namely innovativeness, proactiveness and risk-taking and the respective impact of environmental factors. Therefore, the objective of this study is to investigate the influence of the EO dimensions on the performance of small and medium-sized enterprises (SMEs) in different but neighboring countries. The focus is on the Rhine Valley, a region that covers parts of Austria, Liechtenstein and Switzerland. Based on a telephone survey responses from 304 business owners and CEOs in the Rhine Valley were collected. Multiple regression analysis shows that firm performance is affected by innovativeness and risk-taking and surprisingly not by proactiveness. The findings reveal that firms in different countries show different configurations of EO dimensions. Therefore, our results suggest that firm performance depends on each EO dimension with regard to environmental aspects. Practical as well as theoretical implications are discussed and recommendations for future research are proposed.

*To whom all correspondence should be addressed.

Introduction

As emphasized by various studies, entrepreneurial small and medium-sized enterprises (SMEs) are fundamental for economic wealth and are a major engine for economic growth (Eggers *et al.*, 2013; Chow, 2006; Carree & Thurik, 2000; Henderson & Weiler, 2010; OECD, 1998). As growth-oriented SMEs are an important source for employment and the generation of revenue, their economic and political relevance becomes obvious. On average, SMEs "...account for over 95% of firms and 60%-70% of employment and generate a large share of new jobs in OECD economies" (OECD, 2000). Based on these key figures, it can be deduced that economic growth is linked to SME growth. Consequently, tracking factors that facilitate SME growth are also crucial for economic prosperity (Ackelsberg & Arlow, 1985; Valliere, 2006). However, in previous years, management research has increasingly investigated factors that explain firm growth, but has not solved this puzzle entirely (Davidsson, Achtenhagen & Naldi, 2005). To overcome prevailing constraints, such as smallness or limited resources in terms of funds, labor, knowledge and skills (Gray & Mabey, 2005), and to achieve competitiveness as well as successful establishment in the market, enterprises are confronted with the necessity to grow, at least to a certain extent (Garnsey, 1998). Thus, within the scope of entrepreneurship, firm growth has become a key indicator for overall success (Carton & Hofer, 2006).

The concept of entrepreneurial orientation (EO) has often been considered when investigating factors that facilitate firm growth (Madsen, 2007). Accordingly, various studies emphasize the positive linkage between EO and growth (Rauch *et al.*, 2009). The term EO explains behaviors and actions within a firm that are characterized through such dimensions as *innovativeness*, *proactiveness* and *risk-taking* (Eggers *et al.*, 2013; Pearce, Fritz & Davis, 2010; Rauch *et al.*, 2009). However, the results of the studies investigating EO and its effect on performance are not consistent and foster confusion (Covin & Wales, 2012; Rauch *et al.*, 2009). Some scholars imply that high levels of innovativeness (Deshpande, Farley & Webster, 1993; Zahra & Bogner, 2000) facilitate firm success, while others highlight proactiveness to be the key performance driver (Lumpkin & Dess, 2001; Miller & Friesen, 1983). Contrarily, Begley and Boyd (1987) assume that risk-taking leads to success to a certain extent, while high levels of risk-taking are counterproductive. Even though it is generally acknowledged that EO and its dimensions are somehow all associated with firm performance, empirical investigations have assessed them in varying ways. These variations have led to diverging outcomes, and therefore opposing implications for SMEs.

So, in order to assist SMEs in their strategic decision-making processes, it is important to investigate the dimensions of EO in complex and dynamic environments. Furthermore, researching multiple countries appears to provide a clearer picture and fosters the reliability of the results, because potential differences among countries are

reflected. To fulfill this purpose, we selected the Rhine Valley as an area of interest, which is a region between three neighboring countries, Austria, Liechtenstein and Switzerland. In fact, political cooperation between these three countries is strong, and economic collaboration in the Rhine Valley region is of an intense nature (Kothbauer, 2012). The labor force within the respective countries is strongly diversified in terms of country of origin. For example, 8,000 Austrians, which is equivalent to approximately 22% of the total number of inhabitants living in Liechtenstein, commute daily to Liechtenstein for employment (Kothbauer, 2012). Furthermore, the Rhine Valley is a dynamic market environment in which several high-tech and manufacturing firms are located. The region is characterized by high industrial density, a distinct innovation rate and the highest export share in the eastern part of Switzerland (Contor GmbH, 2005). Therefore, conducting our study in this region provides insights on the effect of the EO dimensions in a complex and dynamic environment, and also ensures heterogeneity regarding businesses and perceptions, allowing the results to be validated in a multi-country context. This should help to gain further insights on EO and provide more detailed and reliable implications.

By conducting a quantitative empirical investigation of SMEs located in the Rhine Valley, the aim is to highlight differences that result from country-of-origin aspects regarding the effect of EO on firm performance in Austria, Liechtenstein and Switzerland. Kreiser and Davis (2010) state that optimal levels of each EO dimension can differ depending on the organization's environment. In this regard, the Rhine Valley is an interesting geographic area, since it features SMEs from countries that are from different environments and economic regions (especially with Switzerland and Liechtenstein not being member states of the European Union). Although it can be expected that the impact of the EO dimensions on business performance is generally positive, we assume that there are country-specific differences in their influence.

Furthermore, we strive to reveal additional insights on the effects of different EO dimensions in these three countries. As there are just a few studies investigating EO as a multidimensional construct using financial and nonfinancial indicators as performance measures and contrasting multiple countries, the aim of this paper is to shed light on this research gap. The lack of exploration becomes even clearer by considering the results of the meta-analysis by Rauch *et al.* (2009) of 51 EO studies concerning their focus, the applied measures and scales. Most studies investigate EO as a unidimensional construct, using single performance measures or examining a single country. Even though Rauch *et al.* (2009) support the unidimensional approach, stating that each dimension is of equal value, the aim here is to critically investigate the effect of each dimension in a multi-country context using multiple performance measures. Furthermore, we aim to overcome slight variations regarding the robustness of the performance measures by including financial and nonfinancial indicators.

This paper continues with providing a review of the existing literature on the field of EO. Subsequently hypotheses are developed and tested with the help of multiple regression analysis. The methodology and research steps taken are described before the results are presented and discussed. The article concludes by exposing the limitations of our approach and recommendations for future research.

Entrepreneurial orientation and firm performance

In recent years, the concept of *entrepreneurship* has received rising attention in terms of scholarly research (Wiklund *et al.*, 2011). Despite the fact that there is no universally accepted definition of the term itself, at its core entrepreneurship refers to individual activities through which value is created by the exploration, recognition and exploitation of opportunities. These opportunistic actions are accompanied by risk affinity and are strongly linked to innovative outcomes (Cools & Van den Broeck, 2008; Covin & Wales, 2012; Landström, 2009; Pearce *et al.*, 2010). Entrepreneurship stems from the orientation of new ventures towards the identification of market opportunities that are not yet discovered and/or under-exploited by competitors. These opportunities are then exploited based on uniquely compiled resources (Davidsson, Delmar & Wiklund, 2002; Hitt, Ireland, Camp & Sexton, 2002).

Initial investigations of EO can be attributed to the elaborations of Mintzberg (1973) and Khandwalla (1976/1977), who established EO as a "managerial disposition rooted in decision making" (Covin & Wales, 2012: 679). Subsequently, one of the first operationalizations of the EO concept was established by Miller (1983), defining an EO-oriented company as "one that engages in product-market innovation, undertakes somewhat risky ventures, and is first to come up with *proactive* innovations, beating competitors to the punch" (Miller, 1983: 771). The first measureable scales of the three EO dimensions of proactiveness, innovativeness and risk-taking were generated by Covin and Slevin (1986; 1988), based on Miller's (1983) operationalization. Although Lumpkin and Dess (1996) identify and indicate two further dimension, *competitive aggressiveness* and *autonomy*, that characterize EO, most researchers agree that EO is a nexus of proactiveness, innovativeness and risk-taking (Wiklund, 1999). Since Miller's (1983) three-dimensional model has been utilized by numerous empirical investigations, our study follows this approach (e.g., Covin & Slevin, 1989; Hansen *et al.*, 2011; Kemelgor, 2002; Wiklund & Shepherd, 2005; Madsen, 2007; Zahra & Garvis, 2000).

From a general perspective, entrepreneurship and EO are regarded as facilitators for firm performance and growth (Chow, 2006; Carree & Thurik, 2000; Rauch *et al.*, 2009). The connection between EO and firm performance has been the subject of numerous studies, with the results that firm performance is positively influenced by the construct of EO (e.g., Covin & Slevin, 1986; Lumpkin & Dess, 1996; Shepherd & Wiklund, 2005; Becherer & Maurer, 1997;

Wiklund, 1999). However, as mentioned before, firm performance has been measured using different indicators (Rauch *et al.*, 2009). To overcome potential variations that might originate in terms of the robustness of the performance measure, we define firm performance as the extent to which financial and nonfinancial goals, as compared to competitors, are achieved based on the perception of the business owners and Chief Executive Officers (CEOs) surveyed. Accordingly, firms that actively apply EO adapt easier to changes in complex market environments and shape the market environment proactively, therefore promoting their growth and performance potential. Furthermore, it is argued that EO might result in competitive advantages, and thus has a positive influence on firm performance (Hult, Hurley & Knight, 2004; Wiklund, 1999; Wiklund & Shepherd, 2005). Comprehensive literature reviews concerning the focus, the applied measures and scales, as well as the results of previous studies investigating the relationship between EO and performance can be found, among others, in Covin and Wales (2012) and Rauch *et al.* (2009).

Innovativeness

The first dimension, innovativeness, is described through the engagement of creative and experimental behaviors that result in new products or services and technical leadership based on research and development efforts (Rauch *et al.*, 2009). Thus established practices are revolutionized and new ideas encouraged (Grande, Madsen & Borch, 2011; Hansen *et al.*, 2011; Lumpkin & Dess, 2001). Schumpeter (1942) was among the first who emphasized the importance of innovations, and innovativeness in particular. He highlights “creative destruction” as a characteristic of the radical innovation process. “Creative destruction” reflects a wealth creation process in which the introduction of novel products or services is realized; thereby creating a disruption within the market that triggers a resource shift. New ventures are created by taking resources from existing companies (Lumpkin & Dess, 1996). The process of creative destruction is first set in motion by the entrepreneur, making innovation within the concept of EO an essential success factor (Lumpkin & Dess, 1996). Based on the results of previous EO-studies innovativeness and business performance strongly correlate (Rauch *et al.*, 2009). With regard to munificent and dynamic environments, as it is the case in the Rhine Valley, Kreiser and Davis (2010) suggest that a high level of innovativeness promotes a firm’s performance. This leads to our first hypothesis:

H1: A high level of innovativeness facilitates the performance of SMEs.

Proactiveness

Proactiveness, the second EO dimension, refers to the ability to foresee future problems, desires and changes. Proactiveness is characterized by initiatives that are taken in order to exploit unforeseen opportunities, and subsequently

introducing new products and services ahead of competitors (Rauch *et al.*, 2009). Alternatively, a proactive enterprise can also be the initiator of activities, which competitors then need to react to; meaning that a proactive company opens new tracks in terms of products or services (Grande *et al.*, 2011). Indeed, proactiveness reflects the importance of initiatives in the entrepreneurial process through which competitive advantages can be generated, meaning that firms can influence and create their environment by actively observing environmental pressures (Grande *et al.*, 2011; Lumpkin & Dess, 1996). In addition, taking initiative, for instance, by creating or co-creating rising markets, is regarded as a crucial factor in entrepreneurship (Lumpkin & Dess, 1996), highlighting proactiveness as a fundamental EO dimension. Finally, Kreiser and Davis (2010) ascribe high levels of proactiveness to superior business performance in munificent and dynamic environments. This suggests the second hypothesis:

H2: A high level of proactiveness facilitates the performance of SMEs.

Risk-taking

The third EO dimension is risk-taking. Risk-taking is based on the circumstance that uncertainty is, to some extent, accompanied by entrepreneurial actions (Lumpkin & Dess, 1996; Low & MacMillan, 1988). Risks result when a substantial number of resources are invested into a project with uncertain outcomes respectively a potentially high prospect of failure (Grande *et al.*, 2011; Hansen *et al.*, 2011; Madsen, 2007). In fact, the willingness to take the risk of ventures into the unknown is a significant trait of an entrepreneur (Wiklund & Shepherd, 2003). However, risk-taking in terms of entrepreneurial behavior refers to assessable and controlled risk endeavors, rather than to actions that comprise extreme and uncontrolled risk (Morris, Kuratko & Covin, 2008). According to Frank, Lueger and Korunka (2007), risk propensity leads to learning effects, which increases the entrepreneur’s ability and willingness to handle risky situations. Furthermore, risk-taking is regarded as a valuable trait in dynamic and munificent environments that promotes a firm’s standing and concomitantly the performance (Kreiser & Davis, 2010). This leads to the formulation of the third hypothesis:

H3: A high level of risk-taking facilitates the performance of SMEs.

Since it is assumed that the effects of the individual EO dimensions will be positive in each of the analyzed countries, only general hypotheses are provided. Nevertheless, all of the hypotheses will be tested for each country separately, following Kreiser and Davis (2010), who emphasize that the optimal levels of each EO dimension can differ depending on the organization’s environment. Finally, besides the individual investigations, the samples will be merged and tested as a whole to allow for general reflections on the hypothesized effects.

Methodology

Measures and variables

In terms of operationalization, the dimensionality of EO has been part of an ongoing discussion in the literature. According to Rauch *et al.* (2009), most scholars have applied Miller's (1983) conceptualization of EO and the measurement scales generated by Covin and Slevin (1986; 1988). The original conceptualization by Miller (1983) proposes that EO is the concurrent application of innovative, proactive and risky behaviors within an enterprise. Nevertheless, the original conceptualization by Miller (1983) and Covin and Slevin's (1986; 1988) measurement scales do not differentiate between SMEs and large enterprises. Indeed, questions like "how many new product lines has your firm marketed in the past 5 years" are inappropriate for assessing EO within the framework of SMEs, due to their size and orientation.

George and Marino (2011) and Rauch *et al.* (2009) show that many studies that use the original Miller (1983) conceptualization or Covin and Slevin (1989) scale, often found that one, or sometimes even more, item(s) within their particular study reflected a different dimension of EO than hypothesized or were not applicable since they significantly reduced reliability. Researchers often respond to this matter by removing these items from their measurement scale. Although this approach is considered to be valid, George and Marino (2011) note that there are advantages in trying new operationalizations of EO. This is in line with Jambulingam, Kathuria and Doucette (2005) and Kraus (2013). These advantages include the possibility for more context-specific measurement, but also improved psychometric scale characteristics by including a larger number of items. A larger number of items should result in 1) improved ability to average out specific measurement errors, 2) increased reliability and 3) a finer distinction between subjects (Churchill, 1979).

It is not our goal to develop a new conceptualization of EO or to extend the notion of EO further by including new subcategories. Rather, we follow the approach applied by Eggers *et al.* (2013), who developed an alternative operationalization of EO suitable for SMEs. In order to achieve this goal, Eggers *et al.* (2013) adapted items from established EO scales and selected questions (scale items) that were suitable for use within SMEs, and finally validated the scales by the use of a factor analysis.

Their approach to the development of this list of scale items that represent the three dimensions was handled in several steps. First of all, redundant items were deleted. Several authors created scales by copying or modifying existing scales and scale items. Some of these items were redundant with other items and therefore had to be excluded. Second, items that focused only on large or larger firms were excluded (see Sciascia, Naldi & Hunter, 2006 and Roskos & Klandt, 2006 for a similar approach). Third, Eggers *et al.* (2013) investigated the remaining items by factor analysis,

and showed that these items loaded on the three dimensions of innovativeness, proactiveness and risk-taking.

Scale items that explicitly inquire about innovations or actions that are undertaken to foster innovativeness or ask about efforts that promote creativity within an enterprise were identified as innovativeness measures. Scale items that assess perception and behavior in terms of uncertainty or that ask about risk-handling exertions within a firm were identified as risk-taking measures. Proactiveness measures ask about the intention to identify unarticulated customer needs and the willingness to seek for and act upon opportunities.

We used the scale items generated by Eggers *et al.* (2013) for measuring the EO dimensions (see Table 1). All items were measured using a 5-point Likert scale, ranging from "totally disagree" to "totally agree".

We included additional scales into our questionnaire to measure *firm performance*, which we used as a dependent variable (Chen, Tzeng, Ou & Chang, 2007). In the context of EO research, various indicators have been used to measure firm performance. Nevertheless, Lumpkin and Dess (1996) note that the relationship between EO and performance might vary based on the measure used to capture performance. Even though Rauch *et al.* (2009) emphasized that the significance of financial or non-financial performance measures is minor, we have tried to overcome this potential constraint by using a multi-faceted measure. Therefore, we assessed firm performance according to perceived financial and nonfinancial performance, meaning *sales growth* and *employment growth*. Both sales growth and employment growth are established measures that have been proven to be the most consistent in evaluating the growth of firms. In addition, sales growth and employment growth are among the two most used indicators for success in entrepreneurship research (Carton & Hofer, 2006; Davidsson, Steffens & Fitzsimmons, 2009).

Furthermore, we included the *education* and *work experience* of the business owners and CEOs as control variables. Education was measured with regard to the highest degree obtained and work experience by the highest position held before beginning the current occupation. Both education and experience can be considered as indicators for knowledge and the track record of the decision maker, and can therefore serve as indicators for the ability to make and adjust strategic decisions. The applied scales were adapted from Eggers *et al.* (2013), through which standard demographic information is measured.

Finally, we calculated an average score per dimension and firm to assess each underlying EO dimension that consists of more than one scale item. For example, the dimension innovativeness was measured by five scale items. Based on these scale items, we computed an average innovativeness score per firm.

Table 1: Scale items

Dimension	Scale item
Risk-taking 1	We value new strategies/plans even if we are not certain that they will always work.
Risk-taking 2	To make effective changes to our offering, we are willing to accept at least a moderate level of risk of significant losses.
Risk-taking 3	We encourage people in our company to take risks with new ideas.
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 incorporate solutions to unarticulated customer needs in our products and services.
Proactiveness 4	We work to find new business or markets to target.
Proactiveness 5	We continuously try to discover additional needs of our customers of which they are unaware.
Innovativeness 1	When it comes to problem solving we value creative solutions more than solutions that rely on conventional wisdom.
Innovativeness 2	We consider ourselves as an innovative company.
Innovativeness 3	Our business is often the first to market with new products and services.
Innovativeness 4	Competitors in this market recognize us as leaders in innovation.
Innovativeness 5	We highly value new product lines.
Growth 1	We achieve a higher sales growth than our (direct/indirect) competitors.
Growth 2	We achieve a higher growth on number of employees than our (direct/indirect) competitors.
Education	What is your highest level of education completed?
Work experience	What was your highest position held prior to working at your current company?

Source: Eggers *et al.* (2013)

Sample

As we addressed German-speaking business executives with our survey, we conducted a double-blind translation of the originally Anglophone questionnaire by Eggers *et al.* (2013), in order to improve the validity and reliability of the measuring instruments (Brislin, 1980; Eggers *et al.*, 2013). The German questionnaire was then converted into a telephone survey. In the spring of 2011, telephone interviews were conducted. We randomly called 250 business owners and CEOs of SMEs in Liechtenstein, 500 in Austria and 500 in Switzerland. The sample was selected from the *Hoppenstedt* and *Schober* databases, which provide

access to an extensive collection of SMEs and their business owners respectively CEOs in German-speaking countries, and was supplemented by chamber of commerce small business lists from all of the respective countries. Business owners and CEOs are targeted as it is assumed that these individuals are most familiar with a firm's entrepreneurial activities and performance (Zahra, 1991). From this sample, phone interviews from 71 companies in Liechtenstein, 116 in Switzerland and 117 in Austria were successfully carried out. The overall response rate was 24,32%. From a general perspective, the samples can be regarded as equivalent in terms of industry affiliation and size, as shown in Table 2.

Table 2: Sample characteristics

	Austria	Liechtenstein	Switzerland
Number of firms surveyed	117	71	116
Industry/Sector			
Agriculture and forestry	1,2	0,0	0,0
Manufacturing	18,0	17,2	15,3
Construction	10,8	9,0	11,1
Wholesale and retail trade	15,0	14,8	6,9
Transportation and storage	3,0	2,5	2,8
Financial and insurance activities	3,6	13,9	4,2
Professional, scientific and technical activities	21,6	13,9	26,4
Accommodation and food service activities	7,8	5,7	2,8
Information and communication activities	11,4	17,2	20,8
Education	1,8	4,9	1,4
Other service activities	6,0	0,8	8,3
Firm Size (Employees)			
< 10	57,5	56,9	52,1
< 50	26,3	28,4	31,0
< 250	16,2	14,7	16,9

(Distribution in percentage)

Results

To determine the results, we used SPSS (v. 21.0 for Mac OSX) to conduct a multiple regression analysis. We tested the dimensions for each country independently and in an overall model.

Table 3: Descriptive statistics and bivariate correlations

	Mean	S.D.	1.	2.	3.	4.	5.
1. Firm performance	2,926	1,159					
2. Innovativeness	18,480	4,227	0,448***				
3. Proactiveness	18,740	4,065	0,386***	0,685***			
4. Risk-taking	12,541	3,741	0,439***	0,486***	0,483***		
5. Education	5,150	2,489	0,133**	0,052	0,099*	0,049	
6. Work experience	3,040	0,874	0,194	0,196***	0,123**	0,006	0,222***

* $p < 0,10$; ** $p < 0,05$; *** $p < 0,01$

The regression analysis for Austria shows that risk-taking ($p < 0,05$) and innovativeness ($p < 0,10$) have a positive significant influence on performance, while no significant effect of the independent variable proactiveness ($p > 0,10$) or the control variables was found. Furthermore, the results show that in Austria, 20,8% ($R^2 = 0,208$) of the variation of firm performance is explained by the independent and control variables.

For Liechtenstein, the results show that risk-taking ($p < 0,01$) and innovativeness ($p < 0,10$) positively influence firm performance. Additionally, the control variable education ($p < 0,10$) has a positive significant effect on the performance of a firm, while proactiveness ($p > 0,10$) and work experience ($p > 0,10$) do not show significant effects on firm performance. Finally, the results for Liechtenstein reveal that 41,5% ($R^2 = 0,415$) of the variation of firm performance is explained by the independent and control variables.

For Switzerland, the results show that only innovativeness ($p < 0,05$) has a positive and significant effect on firm performance. However, proactiveness ($p > 0,10$) and risk-

The summary statistics (means and standard deviations) and zero-order correlations among the analyzed variables of the merged sample of Austria, Liechtenstein and Switzerland are illustrated in Table 3. The outcomes of the multiple regression analysis are depicted in Table 4 and described subsequently.

taking ($p > 0,10$), as well as the control variables, do not show significant effects. Moreover, 26,4% ($R^2 = 0,264$) of the variation of firm performance is explained by the independent and control variables in the regression analysis for Switzerland.

In the overall analysis of all three countries, innovativeness ($p < 0,01$), risk-taking ($p < 0,01$) and the control variable education ($p < 0,01$) have a positive and significant impact on firm performance. Interestingly, proactiveness ($p > 0,10$) and work experience ($p > 0,10$) cannot be considered as growth-stimulating factors for performance. In total, 29,4% ($R^2 = 0,294$) of the variation of firm performance is explained by the independent and control variables with regard to the model of all three countries.

Tests for autocorrelation, multicollinearity and heteroscedasticity were undertaken to assure that the test premises have been fulfilled. The results show that none of the model premises were contravened.

Table 4: Multiple regression analysis results

	<i>n</i>	R^2	Independent variables			Control variables	
			Innovativeness	Proactiveness	Risk-taking	Education	Work experience
Austria	117	0,208	0,217*	0,050	0,243**	0,106	0,042
Liechtenstein	71	0,415	0,217*	0,125	0,371***	0,137*	-0,018
Switzerland	116	0,264	0,396**	0,004	0,161	0,133	-0,006
Overall	304	0,294	0,277***	0,068	0,273***	0,130***	-0,011

Dependent variable: Firm performance

* $p < 0,10$; ** $p < 0,05$; *** $p < 0,01$

In general, our hypothesized effects of the EO dimensions innovativeness and risk-taking were supported, suggesting that they have an impact on firm performance. As described above, the three dimensions of EO (innovativeness, proactiveness and risk-taking) as well as the control variables (education and work experience) show varying effects on firm performance in each country. Even though

all of the companies analyzed are located in the Rhine Valley, it is remarkable that there are quite concise variances regarding each country.

For Austrian enterprises, the results show that there is a positive significant relationship between risk-taking and firm performance. This indicates that, for instance, the

implementation of new strategies, plans or investments in new business segments might have a positive relationship to a firm's performance. Furthermore, according to our scales, a success factor for Austrian enterprises is to encourage employees to take risks with new ideas (Eggers *et al.*, 2013). Likewise, innovativeness is regarded as an important factor for success. Consequently, for Austria, hypotheses *H1* and *H3* are supported, while *H2* proved not to be true.

For Liechtenstein, the results emphasize a positive significant relationship between innovativeness, as well as risk-taking, and firm performance, showing overlaps with the results for Austria. Besides the affirmative effect of these two EO dimensions, education level has a positive influence on the performance of a firm in Liechtenstein. Hence, hypotheses *H1* and *H3* are supported for Liechtenstein, while *H2* cannot be confirmed. Although not explicitly hypothesized, we found that an advanced education level is positively associated with firm performance in Liechtenstein.

Based on our scales, the creation of innovative solutions or new product lines and services, as well as their advancement, is regarded as an important factor for performance in Swiss firms (Eggers *et al.*, 2013). However, proactiveness and risk-taking are not regarded as valuable aspects for fostering firm performance in the Swiss part of the Rhine Valley. Subsequently, the results support hypothesis *H1*, while *H2* and *H3* cannot be confirmed for Switzerland.

In conclusion, the overall results suggest that firms that seek risky investments and encourage employees to take risks regarding new ideas and solutions are more likely to perform better, no matter where they are located in the Rhine Valley. Moreover, innovativeness is positively linked to firm performance. Finally, education level is associated with the performance of SMEs in the Rhine Valley. Thus, the more experience a manager has, the more he or she might be aware of the necessity to follow a strategic orientation. In conclusion, hypotheses *H1* and *H3* are supported in the overall model, while *H2* is rejected.

Discussion

By taking a closer look at the results, we can draw two major conclusions. First, there are clear differences in strength and significance between the three EO dimensions. Kreiser and Davis (2010) state that the optimal levels of each dimension of EO differ based on the organization's environment. Rather than seeking to have the highest level of EO, an organization should seek to find the most effective configuration of its innovative, proactive and risk-taking behaviors. While each of these should be present in some form, their configurational relationship is likely to differ in varying settings. Therefore, given that the environment has an impact on the most effective configuration of the EO dimensions, our results can be applied to other economic areas as well. This is in particular the case for small economic areas that consist of two or more countries.

Consequently, we found proof for Kreiser and Davis's (2010) finding.

Second, and also related to Kreiser and Davis (2010), we find differences among firms in neighboring countries. Whereas risk-taking and innovativeness are growth factors in Austria, Liechtenstein and the overall model, only innovativeness is influential on performance in Switzerland. It is an interesting observation that SMEs from Austria and Liechtenstein emphasize innovativeness and risk-taking as a growth factor and do not attribute proactiveness to growth. So, the question arises: how can innovativeness be achieved without proactiveness? An answer could lie in the different levels of innovativeness (see e.g., Kleinschmidt & Cooper, 1991). Whereas radical innovations, meaning, products or services that go beyond expressed customer wishes, cannot be realized without strongly pronounced proactive behavior, incremental innovations, which are often based on expressed customer needs or competing products, can be realized with a less amount of proactiveness. Therefore, the level of proactiveness can be assumed to be lower in less innovative products and services (Covin & Slevin, 1989; Lumpkin & Dess, 1996; Zahra & Garvis, 2000). Nevertheless, these products and services can still be considered innovative.

The only performance factor in Swiss SMEs is innovativeness. According to our results, proactiveness and risk-taking do not have a positive significant effect on performance in Switzerland. This is an interesting finding. According to the discussion above, the development of innovations typically comes with proactive and risky decisions. It appears that Swiss firms are able to innovate without being proactive and risk-taking. That is, among Swiss firms we see an innovation type, which is different from companies in Liechtenstein and Austria.

Additionally, economic issues should be regarded when interpreting our findings. Economic stability and wealth might influence the prosperity of SMEs within a country, and therefore affect their possibilities to force innovativeness and to allow investments in risky projects. Moreover, worldwide economic circumstances might have biased the firms' liquidity, and therefore their capabilities concerning the execution of innovativeness, proactiveness or risk-taking. Thus, it is possibly the case that Swiss SMEs are neglecting some of their growth potential due to the repercussions of the economic crisis, because these firms do not perceive risk-taking as a growth factor, whereas firms in the other two countries do. Since the survey was conducted after the economic crisis that lasted between late 2007 and the second quarter of 2009 (Naidoo, 2010), this circumstance also needs to be taken into consideration and may support the before-mentioned assumptions. To some extent, the results could reflect the attitudes and actions that were undertaken during the crisis. On the other hand, the results might equally mirror the actions taken right after the crisis. Regarding EO in times of economic crisis, Soininen, Puumalainen, Sjögrén and Sytjä (2012) state that "the effects of economic downturn are stronger on risk taking firms than in other firms" (Soininen *et al.*, 2012: 939). Therefore, it seems to be plausible that the results have been

affected by the fact that during the time after the crisis SMEs acted more risk averse (especially in countries that were affected by the economic crisis to a large extent) and started operating more risk affine as the economy recovered.

A further explanation for the varying results might be cultural differences. If the social environment promotes innovativeness, proactiveness and risk-taking, individuals and SMEs are more likely to adopt these attitudes than in an environment that is not entrepreneurial. However, Hyrsky and Tuunanen (1999) suggest that “to really understand the differences in business behavior, factors, such as ideology, norms and rewards for behavior, individual and national aspirations, religious doctrines and education as linked to entrepreneurship should also be examined on a comparative basis” (Hyrsky & Tuunanen, 1999: 251).

Another indicator for the differences in the results might be the personal perception and awareness of managers regarding the importance of the implementation and pursuit of EO in general or in parts (Hambrick, 2007). Education level might be an issue that affects to what extent importance is given to the adoption of innovativeness, proactiveness and risk-taking within an SME and to sharing it with employees. On the other hand, the situation managers find themselves in frequently might reinforce behaviors in other situations (Kahneman & Tversky, 1984). That means a risk affine attitude is not only dependent on a manager’s propensity, but also on the situations with which the manager is repeatedly confronted (Hyrsky & Tuunanen, 1999). Established internal structures and behaviors may likewise bias the endeavor to try innovativeness, proactiveness and/or risk-taking. If the business is running well and there is no need to change, SMEs might be resistant to focus on strategic orientations that promote growth, and thereby neglect growth potentials.

Furthermore, according to Minniti (2008) governmental policies can “contribute actively to the development of an institutional setting” that supports entrepreneurship (Minniti, 2008: 788). In this regard Dutz, Ordober and Willig (2000) highlight that access to fundamental business services and local input is needed to facilitate entrepreneurial activities. Therefore, in case businesses operate in an environment in which governmental policies promote entrepreneurial activities, firms might have a greater sense towards the effect and importance of strategic orientations than in settings in which suchlike activities are not encouraged. In the Rhine Valley region of Austria, Liechtenstein and Switzerland for instance, various offers exist that support entrepreneurial activities and address issues of interest for entrepreneurs and SMEs such as study programs, seminars, conferences and custom programs for individuals and enterprises offered by the University of St. Gallen, the University of Liechtenstein, the government of Liechtenstein or the University of Applied Sciences Vorarlberg among others.

Finally, the results show that in Austria, only 20,8% ($R^2 = 0,208$) of the variation of firm performance is explained by the independent variables, while this is 26,4% ($R^2 = 0,264$)

in Switzerland and 41,5% ($R^2 = 0,415$) in Liechtenstein. This means that the significant dimensions of EO, which were analyzed with regard to firm performance, have greater influence in Liechtenstein than in Switzerland and Austria. Therefore, the results for Austria and Switzerland still need to be regarded carefully, and cannot be generalized to the same extent as for Liechtenstein.

Limitations and future research

In terms of limitations, we have to be aware of the fact that the analyzed samples are based on self-reported and subjective evaluations. We need to rely on the evaluation of the business owners; we cannot validate the results based on key figures. Differences regarding the interpretation of the questions that measured innovativeness, proactiveness and risk-taking might prevail, that could have biased the results. Furthermore, the generalizability of the study results needs to be reflected upon critically, as we only investigated a random sample. Finally, transferability is an aspect we need to take into consideration, as the study might provide different results in other environments.

We suggest that future studies should investigate the interplay of the EO dimensions further, and consider antecedents, moderators, mediators and performance outcomes. Moreover, it would be interesting to control our analysis not only by size, but also by age, in order to see if there are differences between young and established firms. The investigation of the EO dimensions and their effects on performance over a longer period of time might provide further insights about the reliability of the results in a long-term perspective. Additionally, we recommend taking cultural, situational and psychological factors into consideration, as these factors could explain and verify our results. Finally, it might be interesting to test our hypotheses in further countries, as well as during times in which no uncommon economic circumstances might affect the results.

References

- Ackelsberg, R. & Arlow, P. 1985. ‘Small businesses do plan and it pays off’, *Long Range Planning*, **18**(5): 61-67.
- Becherer, R. & Maurer, J. 1997. ‘The moderating effect of environmental variables on the entrepreneurial and marketing orientation of entrepreneur-led firms’, *Entrepreneurship Theory and Practice*, **22**(1): 47-58.
- Begley, T.M. & Boyd, D.P. 1987. ‘Psychological characteristics associated with performance in entrepreneurial firms and small businesses’, *Journal of Business Venturing*, **2**(1): 79-93.
- Brislin, R.W. 1980. ‘Translation and content analysis of oral and written materials’. In Triandis, H.C. & Berry, J.W. (eds.). *Handbook of cross-cultural psychology*. Boston: Allyn and Bacon.

- Carree, M.A. & Thurik, A.R. 2000. 'The impact of entrepreneurship on economic growth'. In Audretsch, D.B. & Acs, Z.J. (eds.). *Handbook of entrepreneurship*. Boston: Kluwer Academic Publishers.
- Carton, R.B. & Hofer, C.W. 2006. *Measuring organizational performance - metrics for entrepreneurship and strategic management research*. Cheltenham: Edward Elgar.
- Chen, C.-N., Tzeng, L.-C., Ou, W.-M. & Chang, K.-T. 2007. 'The relationship among social capital, entrepreneurial orientation, organizational resources and entrepreneurial performance for new ventures', *Contemporary Management Research*, **3**(3): 213-232.
- Chow, I.H.S. 2006. 'The relationship between entrepreneurial orientation and firm performance in China', *SAM Advanced Management Journal*, **71**(3): 11-20.
- Churchill, Jr. G.A. 1979. 'A paradigm for developing better measures of marketing constructs', *Journal of Marketing Research*, **16**(1): 64-73.
- Contor GmbH. 2005. *St.Galler Rheintal - Das Hochtechnologie-Tal. Standortstudie "Hochtechnologie: St. Galler Rheintal im Vergleich"*. Hünxe: Contor GmbH.
- Cools, E. & Van den Broeck, H. 2008. 'The hunt for the heffalump continues: Can trait and cognitive characteristics predict entrepreneurial orientation', *Journal of Small Business Strategy*, **18**(2): 23-41.
- Covin, J.G. & Slevin, D.P. 1986. 'The development and testing of an organization-level entrepreneurship scale'. In Ronstadt, R., Hornaday, J.A. & Vesper, K.H. (Eds.). *Frontiers of entrepreneurship research 1986*. Wellesly, MA: Babson College.
- Covin, J.G. & Slevin, D.P. 1988. 'The influence of organization structure on the utility of an entrepreneurial top management style', *Journal of Management Studies*, **25**(3): 217-234.
- Covin, J.G. & Slevin, D.P. 1989. 'Strategic management of small firms in hostile and benign environments', *Strategic Management Journal*, **10**(1): 75-87.
- Covin, J.G. & Wales, W.J. 2012. 'The measurement of entrepreneurial orientation', *Entrepreneurship Theory and Practice*, **36**(4): 677-702.
- Davidsson, P., Achtenhagen, L. & Naldi, L. 2005. 'Research on small firm growth: A review', *Paper presented at the 35th EISB Conference, Barcelona, Spain*.
- Davidsson, P., Delmar, F. & Wiklund, J. 2002. 'Entrepreneurship as growth: Growth as entrepreneurship'. In Hitt, M.A., Ireland, R.D., Camp, S.M. & Sexton, D.L. (Eds.). *Strategic entrepreneurship: Creating a new mindset*. Oxford: Blackwell.
- Davidsson, P., Steffens, P. & Fitzsimmons, J. 2009. 'Growing profitable or growing from profits: Putting the horse in front of the cart?', *Journal of Business Venturing*, **24**(4): 388-406.
- Deshpande, R., Farley, J.U. & Webster Jr., F.E. 1993. 'Corporate culture, customer orientation, and innovativeness in Japanese firms: A Quadrad Analysis', *Journal of Marketing*, **57**(1): 23-37.
- Dutz, M., Ordovery, J. & Willig, R. 2000. 'Entrepreneurship, access policy and economic development: Lessons from industrial organization', *European Economic Review*, **44**(4-6): 739-747.
- Eggers, F., Kraus, S., Hughes, M., Laraway, S. & Snyderski, S. 2013. 'Implications of customer and entrepreneurial orientations for SME growth', *Management Decision*, **51**(3): 524-546.
- Frank, H., Lueger, M. & Korunka, C. 2007. 'The significance of personality in business startup intentions, start-up realization and business success', *Entrepreneurship & Regional Development*, **19**(3): 227-251.
- Garnsey, E. 1998. 'A theory of the early growth of the firm', *Industrial and Corporate Change*, **7**(3): 523-556.
- George, B.A. & Marino, L.D. 2011. 'The epistemology of entrepreneurial orientation: Conceptual formation, modeling, and operationalization', *Entrepreneurship Theory and Practice*, **35**(5): 989-1024.
- Grande, J., Madsen, E.L. & Borch, O.J. 2011. 'The relationship between resources, entrepreneurial orientation and performance in farm-based ventures', *Entrepreneurship & Regional Development*, **23**(3-4): 89-111.
- Gray, C. & Mabey, C. 2005. 'Management development: Key differences between small and large businesses in Europe', *International Small Business Journal*, **23**(5): 467-485.
- Hambrick, D.C. 2007. 'Upper echelons theory: An update', *Academy of Management Review*, **32**(2): 334-343.
- Hansen, J.D., Deitz, G.D., Tokman, M., Marino, L.D. & Weaver, K.M. 2011. 'Cross-national invariance of the entrepreneurial orientation scale', *Journal of Business Venturing*, **26**(1): 61-78.
- Henderson, J. & Weiler, S. 2010. 'Entrepreneurs and job growth: Probing the boundaries of time and space', *Economic Development Quarterly*, **24**(1): 23-32.
- Hitt, M.A., Ireland, R.D., Camp, S.M. & Sexton, D.L. 2002. 'Strategic entrepreneurship: Integrating entrepreneurial and strategic management perspectives'. In Hitt M.A., Ireland, R.D., Camp, S.M. & Sexton, D.L. (eds.). *Strategic entrepreneurship: Creating a new mindset*. Oxford: Blackwell.

- Hult, G.T.M., Hurley, R.F. & Knight, G.A. 2004. 'Innovativeness: Its antecedents and impact on business performance', *Industrial Marketing Management*, **33**(5): 429-438.
- Hyrsky, K. & Tuunanen, M. 1999. 'Innovativeness and risk-taking propensity: A cross-cultural study of Finnish and U.S. entrepreneurs and small business owners', *The Finnish Journal of Business Economics*, **48**(3): 238-256.
- Jambulingam, T., Kathuria, R. & Doucette, W.R. 2005. 'Entrepreneurial orientation as a basis for classification within a service industry: The case of retail pharmacy industry', *Journal of Operations Management*, **23**(1): 23-42.
- Kahneman, D. & Tversky, A. 1984. 'Choices, values, and frames', *American Psychologist*, **39**(4): 341-350.
- Kemelgor, B.H. 2002. 'A comparative analysis of corporate entrepreneurial orientation between selected firms in the Netherlands and the USA', *Entrepreneurship & Regional Development*, **14**(1): 67-87.
- Khandwalla, P.N. 1976/1977. 'Some top management styles, their context and performance', *Organization & Administrative Sciences*, **7**: 21-51.
- Kleinschmidt, E.J. & Cooper, R.G. 1991. 'The impact of product innovativeness on performance', *Journal of Product Innovation Management*, **8**(4): 240-251.
- Kothbauer, M.P. 2012. *Bilateral relations Austria - Liechtenstein*. Vaduz, FL: Government of the Principality of Liechtenstein.
- Kraus, S. 2013. 'The role of entrepreneurial orientation in service firms: Empirical evidence from Austria', *The Service Industries Journal*, **33**(5): 427-444.
- Kreiser, P.M. & Davis, J. 2010. 'Entrepreneurial orientation and firm performance: The unique impact of innovativeness, proactiveness, and risk-taking', *Journal of Small Business and Entrepreneurship*, **1**(1): 39-51.
- Landström, H. 2009. *Pioneers in entrepreneurship and small business research*. New York: Springer.
- Low, M.B. & MacMillan, I.C. 1988. 'Entrepreneurship: Past research and future challenges', *Journal of Management*, **14**(2): 139-161.
- Lumpkin, G.T. & Dess, G.G. 1996. 'Clarifying the entrepreneurial orientation construct and linking it to performance', *Academy of Management Review*, **21**(1): 135-172.
- Lumpkin, G.T. & Dess, G.G. 2001. 'Linking two dimensions of entrepreneurial orientation to firm performance: The moderating role of environment and industry life cycle', *Journal of Business Venturing*, **16**(5): 429-451.
- Madsen, E.L. 2007. 'The significance of sustained entrepreneurial orientation on performance of firms – A longitudinal analysis', *Entrepreneurship & Regional Development*, **19**(2): 185-204.
- Miller, D. 1983. 'The correlates of entrepreneurship in three types of firms', *Management Science*, **29**(7): 770-791.
- Miller, D. & Friesen, P.H. 1983. 'Innovation in conservative and entrepreneurial firms: Two models of strategic momentum', *Strategic Management Journal*, **3**(1): 1-25.
- Minniti, M. 2008. 'The role of government policy on entrepreneurial activity: Productive, unproductive, or destructive?', *Entrepreneurship Theory and Practice*, **32**(5): 779-790.
- Mintzberg, H. 1973. 'Strategy-making in three modes', *California Management Review*, **16**(2): 44-53.
- Morris, M.H., Kuratko, D.F. & Covin, J.G. 2008. *Corporate entrepreneurship & innovation*. Mason, OH, USA: Thomson Higher Education.
- Naidoo, V. 2010. 'Firm survival through a crisis: The influence of market orientation, marketing innovation and business strategy', *Industrial Marketing Management*, **39**(8): 1311-1320.
- OECD. 1998. *Fostering entrepreneurship*. Paris: OECD.
- OECD. 2000. 'Small and medium-sized enterprises: Local strength, global reach', *Policy Brief*: 1-8.
- Pearce, II J.A., Fritz, P. & Davis, P.S. 2010. 'Entrepreneurial orientation and the performance of religious congregations as predicted by rational choice theory', *Entrepreneurship Theory and Practice*, **34**(1): 219-248.
- Rauch, A., Wiklund, J., Lumpkin, G. & Frese, M. 2009. 'Entrepreneurial orientation and business performance: An assessment of past research and suggestions for the future', *Entrepreneurship Theory and Practice*, **33**(3): 761-787.
- Roskos, S. & Klandt, H. 2007. 'Young technology ventures in Europe: Aspects of market orientation and entrepreneurial orientation', *International Journal of Entrepreneurship and Small Business*, **4**(5): 543-563.
- Schumpeter, J.A. 1942. *Capitalism, socialism and democracy*. New York: Harper & Brothers.
- Sciascia, S., Naldi, L. & Hunter, E. 2006. 'Market orientation as determinant of entrepreneurship: An empirical investigation on SMEs', *International Entrepreneurship and Management Journal*, **2**(1): 21-38.
- Shepherd, D.A. & Wiklund, J. 2005. *Entrepreneurial small business: A resource-based perspective*. Northampton, MA: Edward Elgar.

Soininen, J., Puumalainen, K., Sjögrén, H. & Syrjä, P. 2012. 'The impact of global economic crisis on SMEs – does entrepreneurial orientation matter?', *Management Research Review*, **35**(10): 927 - 944.

Valliere, D. 2006. 'Consequences of growth: Shaping entrepreneurial attitudes', *International Journal of Entrepreneurship and Innovation*, **7**(3): 141-148.

Wiklund, J. 1999. 'The sustainability of the entrepreneurial orientation-performance relationship', *Entrepreneurship Theory and Practice*, **24**(1): 37-48.

Wiklund, J., Davidsson, P., Audretsch, D.B. & Karlsson, C. 2011. 'The future of entrepreneurship research', *Entrepreneurship Theory and Practice*, **35**(1): 1-9.

Wiklund, J. & Shepherd, D.A. 2003. 'Knowledge-based resources, entrepreneurial orientation, and the performance of small and medium-sized business', *Strategic Management Journal*, **24**(13): 1307-1314.

Wiklund, J. & Shepherd, D.A. 2005. 'Entrepreneurial orientation and small business performance: A configuration approach', *Journal of Business Venturing*, **20**(1): 71-91.

Zahra, S.A. 1991. 'Predictors and financial outcomes of corporate entrepreneurship: An exploratory study', *Journal of Business Venturing*, **6**(4): 259-286.

Zahra, S.A. & Bogner, W.C. 2000. 'Technology strategy and software new ventures' performance: Exploring the moderating effect of the competitive environment', *Journal of Business Venturing*, **15**(2): 135-173.

Zahra, S.A. & Garvis, D.M. 2000. 'International corporate entrepreneurship and firm performance: The moderating effect of international environmental hostility', *Journal of Business Venturing*, **15**(5-6): 469-493.