INSTITUTIONAL ENVIRONMENTS FOR ENTREPRENEURSHIP: A THREE COUNTRY STUDY

Abstract

Previous studies have demonstrated that institutional factors affect entrepreneurial macro-level outcomes. However, little is known on the mechanisms through which those effects appear. In this study, we propose that entrepreneurs' perceptions of institutions are central to understanding those mechanisms. Specifically, we use a previously developed measure, country institutional profile for entrepreneurship (Busenitz et al., 2000), to study how software entrepreneurs in three small, open economies (Switzerland, New Zealand, and Finland) perceive their institutional environments in terms of regulatory, normative, and cognitive aspects. Our research results reveal that the country institutional profiles for entrepreneurship differ significantly between the three countries studied, and that entrepreneurs' perceptions of elements of the institutional environment are quite different from the World Bank data concerning institutional factors affecting start-ups. Also, we find some evidence of a link between entrepreneur's perception of institutional environment and firm performance. This finding suggests that entrepreneurs' perceptions of institutions may, indeed, have a key role as a moderator between "hard" measures of institutions and economic outcomes. Also, the effects that we find are specific to young firms (less than 10 years of age), which suggests that institutional profiles are domain specific.

INTRODUCTION

The relevance of institutional environment for business may be best pronounced at the times of economic distress. The support structures for new businesses are often available when times are good, but at the time of an economic downturn it is hard to find private capital, grant funds, governmental support programs, or inexpensive education that would assist start-up businesses. What is more, the tax burden and regulatory requirements imposed on entrepreneurial businesses may feel particularly heavy when business is already slowing down. Given the current economic conditions, an investigation into the institutional environment that supports entrepreneurship is particularly topical.

Institutional aspects of entrepreneurship have attracted significant attention in the entrepreneurship literature especially in recent years (Acs, Desai, & Hessels, 2008, Aidis, Estrin, & Mickiewicz, 2008, Bowen & DeClercq, 2008, Hessels, Gelderen, & Thurik, 2008, Manolova, Eunni, & Gyoshev, 2008, Sobel, 2008, Spencer & Gomez, 2004), not least because of the interest of governments to support entrepreneurship through institutional structures. Indeed, the institutional environment shaping the overall economy also affects the dynamics of entrepreneurship within any given country (Bowen & DeClercq, 2008, Spencer & Gomez, 2004). Institutions influence, among other things, the quality of governance, access to capital and other resources, and the perceptions of entrepreneurs (Acs, et al., 2008). Institutions are critical determinants of economic behavior (North, 1990), and they can impose direct and indirect effects on the prevalence and types of entrepreneurship in a society. For example, Baumol (1990) treats entrepreneurship as an omnipresent feature of human nature, assuming that what differs across locations is not the degree of underlying entrepreneurial spirit, but instead how that spirit

is channeled. Institutions providing secure property rights, a fair judicial system, contract enforcement, and effective limits on government's ability to transfer wealth through taxation and regulation, have a lower return to unproductive political entrepreneurship (such as lobbying and lawsuits). Under this institutional arrangement entrepreneurial individuals are more likely to engage in the creation of new wealth through productive entrepreneurship. (Baumol, 1990, Bowen & DeClercq, 2008, Sobel, 2008)

Even if previous research provides important information on the role of institutions in promoting entrepreneurship on the country level (Acs, et al., 2008, Aidis, et al., 2008, Bowen & DeClercq, 2008, Hessels, et al., 2008), entrepreneurs' perceptions of institutions are still poorly understood. Institutions affect the levels and types of entrepreneurship in a country or region through the behavior of entrepreneurs, which, again is influenced by how these entrepreneurs perceive their environment and institutions. However, very little is known on this role of entrepreneurs' perceptions in the process that channels the effects of institutions to macro level entrepreneurial outcomes. Our research expands existing literature on entrepreneurship and institutions by investigating this "black box" between institutions and macro level outcomes: How do entrepreneurs perceive the regulatory, cognitive, and normative institutions around them, and what – if any – links exist between these perceptions and firm performance.

This research builds on the institutional theory as described by Scott (1995) and Kostova (1997), who introduced the concept of a three-dimensional country institutional profile. According to this view, national governmental policies (regulatory dimension), widely shared social knowledge (cognitive dimension), and value systems (normative dimension) affect business

activity. However, institutional profiles cannot be generalized; they are domain specific (Kostova, 1997). Consequently, Busenitz, Gomez, and Spencer (2000) have developed a measure for entrepreneurship specific country institutional profile, which has later also been tested by Manolova et al. (2008). This study presents the first application of the Busenitz et al. (2000) measure of country institutional profile for entrepreneurship in the context of real life entrepreneurs (previous tests have used student samples). Based on institutional theory and recent research in strategy and international business (Meyer, Estrin, Bhaumik, & Peng, 2009, Peng, Wang, & Jiang, 2008), we develop hypotheses, which link the institutional environment, as perceived by an entrepreneur, to organizational performance. Even if analyses of entrepreneurship on country level have provided some insights to the importance of culture in entrepreneurship, a more fine-grained approach to the institutional environment from the perspective of an actual entrepreneur provided in this study is expected to improve our understanding on how, exactly, do institutions affect entrepreneurship. Using survey data from software entrepreneurs in Finland, New Zealand, and Switzerland we also examine differences in entrepreneurs' perceptions of the institutional profile for entrepreneurship by country. Finally, we suggest that the very construct of institutional profile for entrepreneurship is more relevant in the context of younger (rather than older) ventures, and test a related hypothesis in the survey data. Overall, the study advances the understanding of institutional aspects of entrepreneurship by showing that the macro level of analysis typical for previous research on institutions and entrepreneurship should be complemented with an understanding of the micro level perceptions of institutions and the related outcomes for firms.

The paper is organized as follows: The next section introduces the three pillar (regulatory, cognitive, and normative) view of institutions, with a specific attention to how entrepreneurs' perceptions of those institutions may be more relevant for the conduct of business rather than the more objective institutions themselves. After this, we formulate hypotheses concerning those perceived institutions and organizational outcomes. The last section of the literature review focuses on the "target market" of the institutional profile for entrepreneurship, that is, the entrepreneurs themselves. After this, we describe our sample, which consists of software firms in Switzerland, New Zealand, and Finland. Empirical analyses and results are described, and finally we present some concluding thoughts and suggestions for future research.

INSTITUTIONS: OBJECTIVE AND PERCEIVED

A country's institutional profile reflects the institutional environment in that country, defined as a set of all relevant institutions that have been established over time, operate in that country, and get transmitted into organizations through individuals (Kostova, 1997: 180). The institutional profile of a country can be determined using the three main types of institutions: regulatory, cognitive, and normative (Kostova, 1997, Scott, 1995). Researchers emphasizing the regulative features of institutions view them as systems of rules or as governance systems. The major source of regulatory rules and enforcement mechanisms in a modern society is the nation-state, although some regulatory structures like trade associations also exist at the sector and community level (North, 1990, Scott, 1995). Unlike these externally enforced rules and laws, norms (normative structures) are internalized by participants: Behavior is guided by a sense of what is appropriate, what are one's social obligations, and by commitment to common values (Scott, 1995). The most recent of the three pillars of institutions emphasizes the role of

cognitive-cultural processes in social life (Powell & DiMaggio, 1991). Cognition here does not refer to individual mental constructs, but to common symbolic systems and shared meanings that are a basis of much stability in the social life.

Kostova (1997) suggests that the measurement of a country institutional profile should be specific to a particular cognitive domain (a particular issue like entrepreneurship) rather than a general measure. At least the cognitive and normative categories of the institutional profile are domain specific. Kostova (1997) herself assesses country institutional environment for quality management, and Busenitz et al. (2000) operationalize the construct for entrepreneurship.

Local, regional, and national institutional environment is an important factor that influences entrepreneurial startups. However, the environmental context affects human action through cognitive processes and resulting behavior of individuals. Indeed, the social cognitive theory would state that the environment-behavior relationship is mediated by the social cognitive variables, which determine what parts of the environment will be perceptually selected, processed, and subsequently attended to in behavioral terms (Bandura, 1986). Consequently, especially when studying entrepreneurial organizations that are often heavily influenced by the decisions of one individual or a few key people, attention should be paid to these very individuals' *perceptions* of their institutional environment. Responding to this need, Busenitz et al. (2000) have developed and tested a measure for country institutional profile for entrepreneurship. Using this measure it is possible to actually study peoples' perceptions of institutions – ranging from highly negative to very positive. This approach is quite different from

the traditional analysis of institutions, which has relied on "hard" data on the existence and features of institutions themselves (Scott, 1995).

If the Busenitz et al. (2000) measure of country institutional profile for entrepreneurship actually measures a country level phenomenon, as perceived by individual respondents, then the average impressions of regulatory, cognitive, and normative institutions for entrepreneurship should actually vary systematically between countries. Indeed, Busenitz et al. (2000) report that especially the regulatory dimension of their measure varies significantly between a number of countries[1]. In terms of the cognitive and normative dimension, the student sample of Busenitz et al. (2000) reveals that United States rankings are significantly higher than those of other Western countries. Evidence of country level differences using Busenitz et al. (2000) measure also comes from the study of Manolova et al. (2008): While the overall institutional profile for entrepreneurship in Latvia, Bulgaria, and Hungary is equally attractive, it turns out that there are significant differences between the three countries along the three sub-components of the overall institutional profile measure. Hence, even if the aggregate evaluations of country institutional profile for entrepreneurship may be similar between some countries, the more nuanced reasons why this is the case are only captured if the three dimensions of institutions (regulatory, cognitive, and normative) are assessed separately. Indeed, Manolova et al. (2008) find that their survey results from the three countries are largely in line with the way the World Bank has assessed the institutions of these countries.

[1] Busenitz et al.(2000) data come from students in the United States, Sweden, Norway, Spain, Italy, and Germany.

Even if the use of student samples is justified for scale development, the country institutional profile for entrepreneurship should next be assessed among those who are actually directly influenced by these institutional forces, that is, entrepreneurs themselves. For the current study we have chosen a single industry (software) to control for industry level variance in the measurement of the institutional profile. Our data come from entrepreneurs in three small, open economies in the Western world. The Swiss Confederation is a land-locked country in the heart of Europe with 7.59 million inhabitants and a GNI per capita in 2007 close to $44,000[2], which makes it one of the world's wealthiest economies. Finland in Northern Europe has a population of 5.29 million and a comparable GNI per capita of $34,550[2] (2007 data). New Zealand in the Asia Pacific region has a population of 4.23 million and its GNI per capita lags both Switzerland and Finland at $26,340[2] (2007 data). However, in terms of easiness of starting a business New Zealand compares favorably to the two other countries: The days required to start a new business in Switzerland add up to 20, in Finland an entrepreneur needs a minimum of 14 days, whereas in New Zealand a new firm can be operational in only 12 days[3]. In terms of the World Bank's "Ease of starting a business"[4] ranking, New Zealand actually holds the first place in the world – meaning it should be very easy to start a new business in New Zealand - whereas Finland ranks 18th and Switzerland only 52nd in the world (WorldBank, 2009). Based on these indicators one would expect the institutional environment for entrepreneurship to be the most favorable in New

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[2] World Bank data. GNI per capita based on purchasing power parity (PPP). PPP GNI is gross national income (GNI) converted to international dollars using purchasing power parity rates. An international dollar has the same purchasing power over GNI as a U.S. dollar has in the United States. GNI is the sum of value added by all resident producers plus any product taxes (less subsidies) not included in the valuation of output plus net receipts of primary income (compensation of employees and property income) from abroad. Data are in current international dollars as reported in the World Bank, International Comparison Program database.

[3] www.doingbusiness.org.

[4] It should be noted that this measure only takes into account the regulatory hurdles of registering a business even if the name of the index implies a wider focus. The World Bank measures the number of procedures, time, and costs to register a business and minimum capital subscription.

Zealand, somewhat less appealing in Finland, and least favorable in Switzerland. However, since these available rankings mostly concern the regulative dimension of the institutions, we do not know what differences, exactly, we should expect to see in the overall institutional profiles for entrepreneurship in New Zealand, Switzerland and Finland.

Hypothesis 1: Entrepreneurs' perceptions of the regulatory, cognitive and normative environment for entrepreneurship vary significantly between Finland, Switzerland, and New Zealand.

INSTITUTIONS, ORGANIZATIONS, AND PERFORMANCE

Institutions affect – and are affected by – organizations (Scott, 1995). On a macro-level, typical for institutional studies, country institutional profile for entrepreneurship (Busenitz, et al., 2000) has been employed to demonstrate relationships between various dimensions of institutions and the level of entrepreneurship in the nation (Spencer & Gomez, 2004). Based on rather limited data on institutions (average 4.7 respondents per country) Spencer & Gomez (2004) find that a country's cognitive institutions are related to the prevalence of small firms in a country and new companies listed on a country's stock exchange. A country's regulatory institutional structures are also related to these IPOs. Rather surprisingly, the "positiveness" of these regulatory institutions displays a significant, but negative, relationship with self-employment. (Spencer & Gomez, 2004)

Results like this are interesting and may provide important information for entrepreneurial policy development, but they are of limited value for entrepreneurs, their businesses, or those interested in entrepreneurial strategy on the more micro level. While entrepreneurship literature has

remained largely focused on the macro-level analysis of institutions and entrepreneurship (Acs, et al., 2008, Bowen & DeClercq, 2008, Sobel, 2008, Spencer & Gomez, 2004), elsewhere in the literature institutional aspects have been increasingly linked to organizational performance (Meyer, et al., 2009). This may be most evident in international business research on emerging economies, where institutional environments clearly differ from developed economies (Peng, et al., 2008). As an example, recent research on the determinants of multinational subsidiary performance documents that while corporate (firm-specific) effects are more critical in explaining the variation in foreign subsidiary performance in developed economies (consistent with the resource-based view), country effects, which are proxies for institutional differences, are more salient in emerging economies (supportive of the institution-based view) (Makino, Isobe, & Chan, 2004). A new generation of research in strategy and international management suggests that institutions are much more than background conditions, and that institutions directly affect firm strategy, competitive advantage, and ultimately performance (Meyer, et al., 2009).

Based on these insights from strategy and international business literature we believe that the institutional environment of an entrepreneurial firm can have a direct bearing on how the firm behaves and performs. One reason why emerging economies have prompted research on institutions and firm performance is that institutional norms and regulations vary considerably between developed and emerging economies (Meyer, et al., 2009, Peng, et al., 2008). In addition, they are often in the state of transition in those emerging economies (Peng, et al., 2008). Similarly, the institutional environments for entrepreneurship vary quite considerably between countries, states, time periods, and even cities: an entrepreneur staring a software firm in New Zealand is subject to laws, regulations, taxation, grant opportunities, attitudes, values, and beliefs

that are quite different from Finland or Switzerland. Evidence on how conditions for entrepreneurship vary between countries is provided, for example, by the Global Entrepreneurship Monitor studies (Bosma, Jones, Autio, & Levie, 2008). Another parallel between emerging economies' institutional environments and institutional environments for entrepreneurship can be drawn when considering the extent to which institutional forces are known to players. Entering emerging markets presents a risk even for a multinational company with a wealth of history and business knowledge: Institutional conditions in emerging markets are seldom completely understood – not even by domestic firms (Peng, et al., 2008). Similarly, new firms are seldom aware of all those aspects of their institutional environment that may have a bearing on their strategic choices and performance. Indeed, entrepreneurship is characterized by uncertainty (Knight, 1921).

Unique institutional structures guide firms' strategic activities (Busenitz, et al., 2000, Meyer, et al., 2009), but little empirical evidence exists on this phenomenon. In one of the first attempts to assess the impact of institutional environment on such strategic decisions in the context of entrepreneurial ventures, Coeurderoy & Murray (2008) study the effect of the institutional dimension, specifically the national regulatory environment, on the location choices and the speed of internationalization by new technology based firms. They find that entrepreneurial young firms choose to enter country markets offering better regulatory protection for intellectual property, and that the home country regulatory environment affects the decision as well. Specifically, rather than assessing regulatory institutions based on their absolute features and benefits for a new venture, entrepreneurs evaluate regulatory institutions of potential foreign markets in the light of their similarity to home market conditions (Coeurderoy & Murray, 2008).

Hence, instead of hard facts that describe regulatory institutions, entrepreneurs' perceptions of these institutions matter for strategic decision making.

Based on previous studies described above there are reasons to believe that an institutional environment, which favors new business activities and entrepreneurship can have a direct positive impact on the performance of new firms. However, we also believe that these effects of the institutional environment are channeled to a firm through key individuals' interpretations of the state of those institutions (Bandura, 1986, Busenitz, et al., 2000). Also, since institutional profiles are domain specific (Kostova, 1997), we expect that younger firms are the ones who experience the effects of institutional environment for entrepreneurship more strongly than more established firms.

> Hypothesis 2: The more positive the entrepreneur's assessment of the regulatory, cognitive and normative environment for entrepreneurship, the better her assessment of the firm's performance.

> Hypothesis 3: The link between perceived institutional environment for entrepreneurship and firm performance is stronger in younger (rather than older) firms.

METHODS

Sample

We used an online survey to collect data from software entrepreneurs in Finland, Switzerland, and New Zealand between September and November 2008. The target population of the survey

in each country consisted of owner-managers of independent software firms. The sampling frames and responses by country are described in the next section. As a general rule, the sample companies were identified by using company directories and industry associations. The questionnaire was pilot tested by three academics (not involved in the research) and five software entrepreneurs. We expected entrepreneurs in all three countries to be fluent enough in English, so the survey was not translated to any other languages. The questionnaire was administered online through a commercial survey website. The survey was rather long (103 items and questions spread over 19 pages), including items not reported in this research. It was expected that fatigue would result in some respondents not filling in the whole survey. This is why the items most important for the study (country institutional profile for entrepreneurship) were placed in the first pages of the survey.

New Zealand. New Zealand's software industry has been identified as a high growth sector with the potential to more than double its contribution to the growth of New Zealand's economy (StatisticsNewZealand, 2002). New Zealand software industry consists of a large number of small-sized firms and a small number of large firms. To obtain a list of software firms in New Zealand, we used the Exporter directory available from the MarketNewZealand.com website. It is a service of the New Zealand Trade and Enterprise that connects international buyers with leading exporters in New Zealand. From this publicly available list of about 370 firms in the information technology, office machinery and equipment sectors, a firm was included in our sample if (1) software development and sales was the principal activity of the firm, and (2) if the firm was independently founded and operated that is, without current or prior ownership affiliation with another company. We also excluded ventures that were corporate subsidiaries or

corporate spin-offs. This resulted in the final list of 125 independent software firms. Firm owners and top managers were contacted via email (one contact per firm) and invited to participate in the online survey. Respondents logged on to the survey through a link from the email invitation. From the recipients of this email invitation, 33 respondents from independent New Zealand software firms filled in the survey. (Response rate 26%)

Switzerland. The Swiss software sector is comparable to other Central European countries. According to the databank of the Schober Information Group, whose figures are based on the census of the Federal Bureau of Statistics, there are 1,444 companies in the Swiss software consulting and development sector, out of which just below 1,000 are software developers. The Schober Information Group was commissioned to administer data collection in Switzerland. The e-mails were addressed to members of senior management of software firms fulfilling the sampling criteria: (1) software development and sales was the principal activity of the firm, and (2) the firm was independently founded and operated. A reminder was sent to all recipients who did not open the first e-mail. Out of the total 720 software firms contacted in Switzerland we received 89 responses. (Response rate 12%)

Finland. At the end of year 2007 it was estimated that there were around 1050 software product companies in Finland. Around 90% of the companies are owned by the founders or family members with 10% having a private investor as an owner. Of the 1050 companies, 71% made less than EUR 300,000 in revenue and 45% employed less than 5 people. (Rönkkö, Mutanen, Koivisto, Ylitalo, Poikonen, Touru, Hyrynsalmi, Peltonen, Junna, Valtakoski, Huang, & Kantola, 2008). The Finnish sampling frame was a combination of three sources: First, SWBusiness.fi is a

free of charge business portal for Finnish software business cluster. An email was sent to 493 companies registered to the portal. Second, Technopolis Ventures is a public-private incubator that contacted 70 of their client companies in software business. Finally, The Finnish Software Entrepreneurs Association email newsletter mentioned the survey, targeting 310 software entrepreneurs. In total, the link to the survey was sent to 873 software entrepreneurs. However, because many of the companies who are members of the Finnish Software Entrepreneurs Association are also listed in SWBusiness.fi, this number includes an undefined number of double emails. In total we received 33 responses from Finland. (Response rate estimate 6%)

Clearly, the response rates of the study are rather low. However, low response rates are typical for online surveys, especially when the respondents are busy entrepreneurs. Tests of online response rates in overall population have reported rates such as 39.6% (Cook, Heath, & Thompson, 2000) and 21% (Kaplowitz, Hadlock, & Levine, 2004). Key demographics of our sample are reported in Table 1.

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Out of the 155 respondents who filled the early parts of the questionnaire, only 106 continued to fill in the whole survey. Our sample for the test of hypothesis 1 consists of those 155 total respondents. However, since performance data were collected later in the survey, tests of hypotheses 2 and 3 are carried out in a smaller sample.

Measures

Institutional profile for entrepreneurship. Busenitz et al. (2000) follow the classification of institutional factors proposed by Scott (1995) and design and test an instrument to measure a country's institutional profile for the development of entrepreneurship. We use this scale to capture entrepreneurs' perceptions of the institutional support that is available for entrepreneurship in their countries and communities. The validity and reliability of the measure was initially established in a sample of American students (Busenitz, et al., 2000). The thirteen items of the scale capture the following three aspects of the institutional environment (Busenitz, et al., 2000: 995) (For exact scale items, see Appendix):

Regulatory dimension: Laws, regulations, and government policies that provide support for new businesses, reduce the risks for individuals starting a new company, and facilitate entrepreneurs' efforts to acquire resources.

Cognitive dimension: The knowledge and skills possessed by the people in a country pertaining to establishing and operating a new business.

Normative dimension: The degree to which a country's residents admire entrepreneurial activity and value creative and innovative thinking.

Manolova et al. (2008) have further validated the Busenitz et al. (2000) instrument in a sample of business students from emerging economies of Eastern Europe. Their findings further support the construct validity and reliability of the Busenitz et al. (2000) scale. However, a clear limitation of the scale tests so far is that only student samples have been used (Busenitz, et al., 2000, Manolova, et al., 2008). One additional published study that has employed the normative dimension of the Busenitz et al. (2000) scale also used student data (Baughn, Cao, Le, Lim, &

Neupert, 2006). To the best of our knowledge the current study is the first time the Busenitz et al. (2000) scale will be validated in a sample of entrepreneurs.

We did also consider an alternative measure to capture the institutional environment for entrepreneurship: Specific to exporting entrepreneurs (over 90% of our sample firms), Descotes, Walliser & Guo (2007) develop a measure of country-specific institutional profiles for exporting SMEs. However, because of the exploratory nature of their research (based on interviews at 20 French and Romanian SMEs), we believe that further validation is needed for the scale items before they can be employed in subsequent research. Also, it is worth mentioning that the wording of many of the items in their study (Descotes, et al., 2007) is quite similar to Busenitz et al. (2000).

Control variables. Clearly, in addition to institutions, firm specific factors can explain variation in firm performance (Barney, 1991). Especially in a research design, where data are collected from single informants it may be that when reflecting on external institutions, these individuals are simultaneously making judgments on their respective firms' advantages in the marketplace. Hence, at least part of an entrepreneur's assessment of external institutions may be confounded in his view of the competitive advantage of the firm. This is why we have a control variable for firm's competitive advantage in our models. In addition, we have a control for firm size (number of employees) as well as home country.

Dependent variable (Performance). Financial data of private companies is hard to come by, and companies are hesitant to disclose their financial information, especially in an online survey.

Because of these limitations, we used a subjective measure for firm performance (See Appendix for exact scale items). Even if objective measures would be preferred, previous research has shown that the top management team members' perceptions of how well their firm has performed - measured in a subjective and relative sense - is consistent with how the firm actually performed vis-a-vis return on assets and growth in sales. (Dess & Robinson, 1984) The use of subjective measures of firm performance is quite common in entrepreneurship research (Chandler & Hanks, 1993, Lumpkin & Dess, 2001).

RESULTS

Since the scale to measure country institutional profile for the promotion of entrepreneurship has been developed and tested only in the context of student samples (Busenitz, et al., 2000, Manolova, et al., 2008), our analysis began by confirming the structure of the scale. We used confirmatory factor analysis since the factor structure has been developed and tested in previous research (Busenitz, et al., 2000, Manolova, et al., 2008). The results of the confirmatory factor analysis are presented in Figure 1, and the model fit statistics appear in Table 2, together with comparative model fit indices from the two previous studies (Busenitz, et al., 2000, Manolova, et al., 2008). Outside of Table 2, it should be mentioned that the value of CMIN / df[5] for the model equals 2.27, which, according to Marsh and Hocevar (1985) indicates a reasonable fit.

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[5] CMIN is the minimum value of the discrepancy. CMIN divided by its degrees of freedom (df) is suggested as a measure of fit, and the closer it is to 1, the better the fit. According to Marsh & Hocevar (1985), the ratio between 2-5 indicates a reasonable fit. Our fit index is very close to that of Manolova et al. (2008) for the same scale (2.33).

As indicated in Table 2, the comparative fit index of our model is .91, which is above the acceptable level of .90 and slightly lower than the indices obtained in student samples by Busenitz et al. (2000) and Manolova et al. (2008). Also the NFI and IFI indices of our model are slightly worse than those obtained in previous studies (See Table 2). However, they are still acceptable. Our root mean square error of approximation (RMSEA) is below the threshold of .1, indicating acceptable fit, but far from the value of .05 or less, which would indicate a good model fit. Overall, we conclude that based on the confirmatory factor analysis, the measure of Busenitz et al. (2000) is a reasonable measure for entrepreneurs' perception of the institutional profile for the promotion of entrepreneurship. However, the scale may work better among real life entrepreneurs if one problematic item, namely "Most people know where to find information about markets for their products" (Cognitive 4) was removed from the scale. As illustrated in Figure 1, this item has a low standardized regression weight (.24). The item has not proven to be problematic in previous studies (Busenitz, et al., 2000, Manolova, et al., 2008). However, it may be that students' perceptions of people's capabilities of doing market research for a new venture are overly optimistic, leading to what might be a bias in previous studies (Busenitz, et al., 2000, Manolova, et al., 2008). In this study, the data were collected from actual entrepreneurs, who have actually – in most cases, at least – been through such market research, and realize the challenges involved. Further tests of the scale among entrepreneurs are needed.

Table 3 shows the results of ANOVA-tests comparing the mean respondent ratings of institutional profile for the promotion of entrepreneurship by country (Test of Hypothesis 1). As indicated in Table 3, significant differences exist for the overall institutional profile scores as well as for each individual dimension: regulatory, cognitive, and normative. Based on this we

conclude that significant differences do exist in entrepreneurs' perception of their institutional environment for entrepreneurship in New Zealand, Finland, and Switzerland (Support for Hypothesis 1). This finding further adds to the validity of the Busenitz et al. (2000) measure of country institutional profile, and is in line with the findings of Manolova et al. (2008) in Eastern European countries.

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For the overall institutional measure, it appears that in New Zealand entrepreneurs' ratings are significantly lower than those of Swiss or Finnish entrepreneurs. With regard to the individual dimensions, the regulatory dimension in Finland is the most conducive among the countries studied, and significantly different from the two other countries. However, in the case of cognitive dimension, Switzerland ranks highest (although not significantly different from Finland, according to the *post hoc* tests), while New Zealand is, again, the lowest of the three countries. Switzerland also ranks highest along the normative dimension, and the mean score is significantly different from the lower mean of both Finland and New Zealand. It appears that despite the economic reforms in New Zealand between 1984-1996 (Evans, Grimes, Wilkinson, & Teece, 1996), which have been described as "one of the most notable episodes of liberalization that history has to offer"[6], the New Zealand institutional environment still lags somewhat behind that of Switzerland and Finland in terms of promoting entrepreneurship. This is somewhat of a surprise, given that the in the most recent (April 2007-June 2008) country rankings the World Bank places New Zealand ahead of both Finland and Switzerland

[6] David Henderson, OECD. Quoted in Evans et al. 1996: 1856.

(WorldBank, 2009). In the overall "Ease of doing business" rank New Zealand ranks second in the world, only after Singapore, whereas Finland is 14th and Switzerland 21st. In terms of the World Bank's "Starting a business " ranking, New Zealand actually holds the first place in the world, whereas Finland ranks 18th and Switzerland only 52nd in the world. (WorldBank, 2009) Clearly, actual entrepreneurs' perceptions of the institutional environment can be quite different from those presented in the official rankings.

Multiple linear regression analysis was used to assess the relationship between perceived firm performance as a dependent variable and the independent variables (test of Hypotheses 2 and 3). The main assumptions for using multiple linear regression are normality of the variables, homoscedasticity, and independence of the independent variables. The normality of the variables was tested by assessing the normality of distribution graphically with the help of normal probability plots. The findings of each assessment were additionally verified by means of the Kolmogorov-Smirnov test for normality. The homoscedasticity of the variables is tested using Levene's test. Variance-stabilizing transformations were applied in order to achieve equal variances in cases where heteroscedasticity was present. When running the regression analyses, we used the VIF value to assess multicollinearity. All the VIF values were comfortably low. Correlations of variables in the regression analysis are reported in Table 4.

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Hypotheses 2and 3 were tested using hierarchical regression analysis. The adjusted R squared values and F values (Table 5) indicate that the constructs selected for this analysis do, indeed, explain a significant proportion of the variance in the dependent variable. The adjusted R

squared values vary from .28 to .64 (for a full model in the sample of young firms) (See Table 5). In the total sample of firms, regulatory dimension has a marginally significant but negative effect on the assessment of firm performance. Cognitive dimension is not significant, but normative dimension has a positive and significant effect (at $p<.05$).

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Hypothesis 3 posited that there would be differences between the antecedents of organizational performance in young vs. old software ventures. To test the hypothesis, we ran regressions for new vs. old companies in our sample separately (Table 5). The median firm age in the available sample is 11.5 years. We decided to divide the sample at 10 years of age; those 10 years of age or younger at the time of the survey are included in the "young" category (47% of firms), and those older than 10 years are in the "old" category (53% of firms). It turns out that the relative importance of competitive advantage in both samples (young and old) was very similar to the values reported for the overall sample, albeit stronger among younger firms. However, the contribution of the institutional environment variables to the models is very different among old vs. young firms: The negative effect of regulatory environment identified for the whole sample seems to be solely a result of significant relationship among young firms; among old firms, regulatory environment is not significantly related to performance. Similarly, the positive effect of normative environment on performance is significant among young firms ($p<.10$) but not significant in the older firm sample. Cognitive institutional environment did not achieve significance in any model. The Chow test (Chow, 1960) is the most popular way of testing whether the parameter values associated with one data set are the same as those associated with another data set. A Chow test (Chow, 1960) demonstrated that the two sets of regression

coefficients are, indeed, significantly different, providing support for Hypothesis 3 ($F_{8, 66} = 5.69$; $p<.001$). Overall, we find mixed support for Hypothesis 2 and support for Hypothesis 3. However, because of the small size of our sample these results should be taken with some caution. As illustrated by Figures 2 & 3, the relationships between regulatory dimension, normative dimension, and performance are not that clear even in the young firm sample. These results are discussed in more detail in the following.

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Insert Figures 2 and 3 here
- -

DISCUSSION AND CONCLUSIONS

Taken together, the results lead to four particularly interesting conclusions. First, when entrepreneurs themselves assess the country institutional profile for entrepreneurship, the measure developed and tested by Busenitz et al. (2000) demonstrates validity and reliability. To the best of our knowledge, this is the first test of the Busenitz et al. (2000) scale in the context of entrepreneurs. However, even if the overall measure is valid and reliable, the cognitive dimension presents some trouble, which is discussed in detail in the following. Second, significant differences between institutional profiles for entrepreneurship in Finland, Switzerland, and New Zealand exist. However, the assessments that we received from entrepreneurs result in a rating of the countries that does not agree with the World Bank data, for example. Third, following recent developments in strategy and international business literature, we have suggested that institutional environment for entrepreneurship may have a direct influence on firm performance. Hence, we are suggesting that institutions are not only relevant on the macro level, but also on the micro level of entrepreneurship. We find some support for

this proposition in our empirical data. Fourth, as suggested in earlier work on country institutional profiles, the institutional profile for entrepreneurship is domain specific: It only affects performance assessments of younger firms in our sample. In older firms, institutional profile for entrepreneurship is not related to managers' assessments of firm performance. Each of these conclusions holds important implications for entrepreneurs, researchers, and policymakers.

Even if the Busenitz et al. (2000) measure, overall, showed validity and reliability in our empirical testing, the cognitive dimension of the scale appears to be problematic. It is supposed to measure the extent to which the people in a country possess knowledge and skills pertaining to establishing and operating a new business, assuming that this kind of knowledge can become institutionalized and shared social knowledge (Busenitz, et al., 2000). Indeed, one could assume that since entrepreneurship has a long history in the United States, for example, people there would have an overall understanding of how to start and operate a new business. However, the cognitive items in the Busenitz et al. (2000) scale may have to be revisited: Our confirmatory factor analysis revealed that the item "Most people know where to find information about markets for their products" does not necessarily belong together with the rest of the cognitive dimension items. Indeed, finding information about markets is hardly a skill that can become truly institutionalized in a country. Even within entrepreneurship literature there is little agreement on what is the extent to which entrepreneurs should rely on traditional market research, listen to their "gut", or pursue alternative market research strategies to understand their customers and competition (Busenitz & Barney, 1997, Sarasvathy, 2001). The fact that this item has passed the previous tests of the scale may be due to the student samples used in previous

research (Busenitz, et al., 2000, Manolova, et al., 2008); students' impressions on what is involved in market research may be somewhat idealized.

We expected to see country level variation in entrepreneurs' assessment of the institutional environment, given the country level focus of the institutional theory and the related country institutional profiles (Busenitz, et al., 2000, Kostova, 1997, Scott, 1995). Indeed, analysis of variance revealed significant differences between New Zealand, Switzerland, and Finland. However, these differences are not in line with the assessments of entrepreneurial institutions by the World Bank. As described earlier, The World Bank rankings favor the institutional environment for entrepreneurship in New Zealand. However, according to our data, New Zealand entrepreneurs' assessments of their country's institutional profile for entrepreneurship are not as favorable as those of entrepreneurs in Finland and Switzerland. Similar findings come from the Global Entrepreneurship Monitor (GEM) study, where national experts interviewed in New Zealand considered their regulatory regime to be negative, contradicting the assessment of the World Bank (Bosma, et al., 2008). Indeed, according to the expert interview data of GEM from the three countries included in this study, the regulations for starting a business favor new businesses most in Finland, second in Switzerland, and least in New Zealand (Bosma, et al., 2008: 43-45). This ranking is similar to our findings with regard to the regulatory dimension as perceived by software entrepreneurs. This finding has important implications for future research, and suggests that the use of "objective" and "hard" measures of institutions – such as those provided by the World Bank - may be at odds with how individuals affected by these very institutional forces actually perceive them.

We have taken the first steps in providing evidence that institutional profile for entrepreneurship may be more than "just" a background condition or a variable of interest for macro level research. Even if our small sample size as well as cross sectional, single informant data present serious limitations, it is still interesting to note that both regulatory dimension and normative dimension of entrepreneurial institutions in our study are related to firm performance. Also, in line with the idea that institutional profiles are domain specific (Kostova, 1997), the link between institutional dimensions and performance only exists in the context of young (less than 10 years of age) firms. Older firms are not affected by the institutions that support entrepreneurship.

A positive assessment of normative dimension is significantly related to firm performance; the extent to which entrepreneurial activities are admired and innovation and creativity are valued in a society has positive consequences on a firm level. The fact that the relationship between a positive assessment of regulatory dimension and firm performance is negative raises some interesting thoughts for future research. Is the relationship maybe moderated by competitive intensity? In a regulatory environment that supports startup businesses, new firms entering a field may be more numerous than in other kinds of regulatory conditions. Increasing competitive intensity may then lead to worse financial performance. Other explanations remain plausible, and future research on the topic is needed. There have been recent calls for more integration between institutional and resource-based views (Meyer, et al., 2009). Accounting for firm resources and competitive advantage in the marketplace in future research may help explain the negative relationship between regulatory institutions and firm performance. The negative relationship found in this study between regulatory dimension and firm performance is actually comparable

to the surprising finding in the Spencer & Gomez (2004) study: On a country level, regulatory institutions were actually negatively associated with self-employment (Spencer & Gomez, 2004).

In conclusion, if this article could contain only one message, we would like it to be that institutional theory has much to offer to the study of entrepreneurship, and researchers should be encouraged to move the analysis of institutional effects from country level only to the level of even individual enterprises. In doing this, the three-pillar institutional profile measure for entrepreneurship developed by Busenitz et al. (2000) will prove valuable, even if attention should be paid to the possible limitations of the cognitive dimension of the scale.

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Table 1: Demographics of survey respondents

		New Zealand	Finland	Switzerland
Partial survey response (n)		33	33	89
	Founder/ CEO/ President of firm (n)	24	28	73
	Other managerial position (n)	9	5	16
	Level of education (mode)	Bachelor's degree	Master's degree	Master's degree
	Firm age, years (mean)	11	10	20
Full survey response (n)		28	24	54

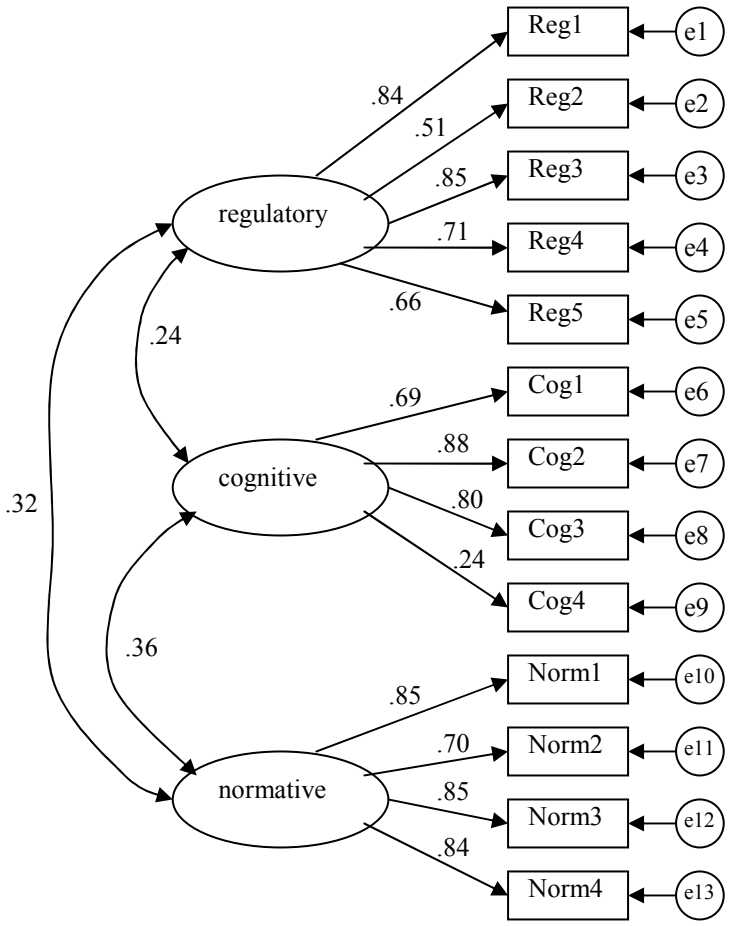


Figure 1: CFA results of the country institutional profile for entrepreneurship scale (See Busenitz et al., 2000, for original scale development) (n=155)

Table 2: Model fit, country institutional profile for entrepreneurship (Busenitz et al., 2000) (n=155)

Indicator	Busenitz et al. (2000)	Manolova et al. (2008)	Our study
Number of factors extracted	3	3	3
Scale reliabilities			
Regulatory dimension	.76	.75	.84
Cognitive dimension	.68	.80	.74
Normative dimension	.81	.81	.88
Overall	.78	.79	.84
Goodness-of-fit indicators			
CFI	.94	.92	.91
NFI	.91	.87	.86
IFI	.94	.92	.92
RMSEA	.05	.07	.09

CFI, comparative fit index; NFI, normed fit index; IFI, incremental fit index; RMSEA, root mean square error of approximation.

Table 3: ANOVA comparisons of institutional environment between Finland, Switzerland, and New Zealand (n=155)

Comparisons between different countries					
Variables	**Groups**	**N**	**Mean (s.d.)**	***F***	***p*-**
Institutional profile for the promotion of entrepreneurship (overall)	Finland	33	2.92 [y] (.65)	6.275	.00
	New Zealand	33	2.56 [a] (.62)		
	Switzerland	89	2.97 [y] (.52)		
	Total	155	2.87 (.59)		
Regulatory environment	Finland	33	3.19 [a] (.64)	8.940	.00
	New Zealand	33	2.38 [y] (.95)		
	Switzerland	89	2.66 [y] (.80)		
	Total	155	2.71 (.84)		
Cognitive environment	Finland	33	2.66 [a, y] (.77)	8.498	.00
	New Zealand	33	2.39 [a] (.60)		
	Switzerland	89	2.93 [y] (.65)		
	Total	155	2.76 (.70)		
Normative environment	Finland	33	2.85 [a] (.98)	7.106	.00
	New Zealand	33	2.97 [a] (.96)		
	Switzerland	89	3.40 [y] (.68)		
	Total	155	3.19 (.85)		

Note: Means with different superscripts ([a] and / or [y]) differ significantly at $p<.05$ by the Duncan multiple range test. Standard deviations within parentheses. All differences are significant at $p < .01$.

Table 4: Correlations

Variables	Mean	S.D.	1	2	3	4	5	6	7	8
1. Firm size (ln)	2.41	1.34	1							
2. New Zealand	.21	.41	.09	1						
3. Finland	.21	.41	-.24*	-.27**	1					
4. Competitive advantage	2.82	.80	.28*	-.05	-.20*	1				
5. Regulatory dimension	2.71	.84	-.07	-.21**	.30**	.02	1			
6. Cognitive dimension	2.75	.70	.06	-.28**	-.07	.09	.26**	1		
7. Normative dimension	3.19	.85	.13	-.14	-.21**	.21*	.33**	.36**	1	
8. Performance	3.39	.80	.46**	-.02	-.14	.43**	-.08	.00	.19*	1

** Significance p< 0.01, * Significance p< 0.05

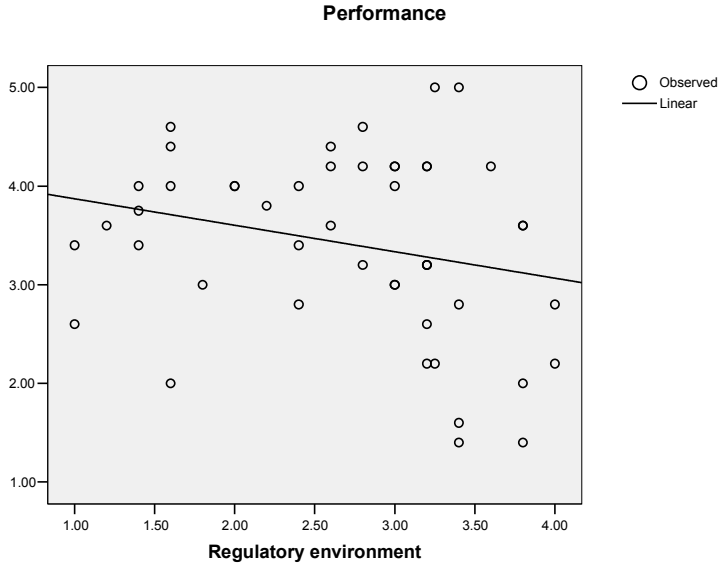
Table 5: Regression by firm age

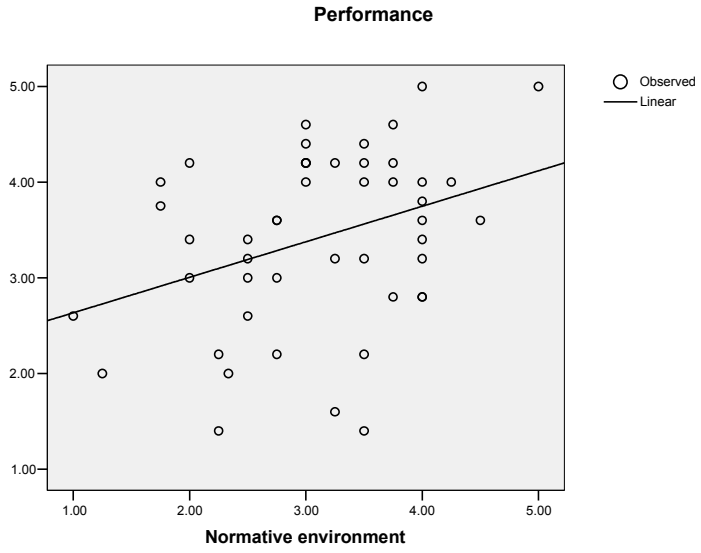
(Young firms = 10 years of age or less, Old firms = over 10 years of age)

	Dependent variable: Firm performance			
	All (n = 82)		Young firms (n = 38)	Old firms (n = 44)
	Control model	Full model		
Firm size	.35**	.35**	.37**	.44**
Finland	.01	.13	.00	.12
New Zealand	.03	.02	-.23†	.12
Competitive advantage	.42**	.38**	.51**	.30*
Regulatory institutions		-.18†	-.26*	-.11
Cognitive institutions		-.07	.07	-.17
Normative institutions		.22*	.22†	-.03
R-square	.38	.42	.71	.40
Adjusted R-square	**.35**	**.37**	**.64**	**.28**
F-value	**11.91****	**7.93****	**10.36****	**3.36****
Durbin-Watson	2.20	2.12	1.89	1.98
Chow test: Young vs. old companies				F(8,66) = 5.69** (p<.001)

† Significant at the 0.10 level * Significant at the 0.05 level **Significant at the 0.01 level.

Figures 2 and 3: Regulatory dimension, normative dimension, and performance among young firms





APPENDIX: VARIABLES IN THE ANALYSES

Variable type	Construct / variable	Scale reliability (Cronbach's alpha)	Question format and items	Type	Missing % (n=155)
Independent variables	Regulatory institutions	.84 (5 items)	Based on your opinion, please indicate the degree to which you agree or disagree with each of the following statements concerning your company's home country: Reg1: Government organizations in this country assist individuals with starting their own businesses. Reg2: The government sets aside government contracts for new and small businesses. Reg3: Local and national governments have special support available for individuals who want to start a new business. Reg4: The government sponsors organizations that help new businesses develop. Reg5: After failing in an earlier business, the government assists entrepreneurs in starting again.	1-5 Likert scale	0%
	Cognitive institutions	.74 (4 items)	Based on your opinion, please indicate the degree to which you agree or disagree with each of the following statements concerning your company's home country: Cog1: Individuals know how to legally protect a new business. Cog2: Those who start new businesses know how to deal with much risk. Cog3: Those who start new businesses know how to manage risk. Cog4: Most people know where to find information about markets for their products.	1-5 Likert scale	0%
	Normative institutions	.88 (4 items)	Based on your opinion, please indicate the degree to which you agree or disagree with each of the following statements concerning your company's home country: Norm1: Turning new ideas into businesses is an admired career path in this country. Norm2: In this country, innovative and creative thinking is viewed as a route to success. Norm3: Entrepreneurs are admired in this country. Norm4: People in this country tend to greatly admire those who start their own business.	1-5 Likert scale	0%
Dependent variable	Firm performance	.81 (5 items)	In the last 12 months, in comparison to major competitors... Our company's performance measured by sales growth rate was… Our company's performance measured by market share was… Our company's performance measured by profitability was… Our company's performance measured by customer loyalty was… Our company's performance measured by return on investment (ROI) was	1-5 Likert scale	29%
Control variables	Competitive advantage	.79 (4 items)	In comparison to your major competitors, who has competitive advantage in the following areas: Strong Management / Dynamic Sales Force / Efficient Marketing Techniques / Efficient Distribution	1-5 Likert scale	30%
	Firm size	N/A	Please indicate the number of employees of your business today?	Natural logarithm	45%
	Country	N/A	Home country of the firm (Finland, Switzerland, New Zealand)	Dummy for each country	0%