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METHODOLOGY

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Investigating the effect of entrepreneurial competencies on business performance among early stage entrepreneurs Global Entrepreneurship Monitor (GEM 2010 survey data)

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Abstract

Entrepreneurs of this era need to be more competent and skillful compared to businessmen working in the beginning of this century. A robust body of knowledge has grown around entrepreneurs' need for superior skills and personality characteristics; the ones that enables them to effectively compete and survive. In this study, we analyzed the relationship between entrepreneurial competencies along with social norms and entrepreneurs' business performance. Data of GEM gathered during 2010 was utilized and 125 cases was selected from 59 member countries. Confirmatory factor analysis showed that social image of entrepreneurs is a better measure than national attitude toward entrepreneurship for the construct "entrepreneurial social norms" based on their factor loadings. For the same reason, entrepreneurial skills remained as the measure of entrepreneurial competencies and entrepreneurial personality measure was dropped. And, for the dependent variable "performance", growth and innovation remained as a more powerful measures than export. Finally, the positive effect of entrepreneurial competencies on business performance was supported by the data and results revealed that there is a positive effect between entrepreneurial social norms on entrepreneurs' competencies which conforms the mediating role of entrepreneurial competencies. However, the data did not support the direct effect of entrepreneurial social norms on performance.

Keywords: Entrepreneurial competency; Business performance; Social norms; Global Entrepreneurship Monitor (GEM)

Background

Abreast with globalization, companies encounter a challenging business environment in which they have to implement proper strategies to survive. A research on Iran's small and medium sized enterprises reveals that only 10 percent of entrepreneurs are able to successfully run their own business while others fail even before launching their business (Amiri, Zali, & Majd, 2009). Furthermore, in an international level, young businesses share a high rate of failure as 20 percent of them would be eliminated by their first year of activity and hence, it reaches to 66 percent by the end of the sixth year (Franco & Haase, 2010). Also, Driessen & Zwart (2007) insert that 50 percent of businesses would vanish during their first five years of foundation.

Without sufficient performance, a business would not be able to survive especially in a competitive environment. Numerous factors may influence the business performance while entrepreneurs pay attention to those of financial and nonfinancial as external factors for performance improvement. Although businesses mostly are not aware of significant role of competencies in business performance, studies show that there is an indispensable relationship between competencies and business performance (Ahmed, Rafiq, & Saad, 2003; García-Zambrano, Rodríguez-Castellanos, & García-Merino, 2014; Short, 2008; Tien, Wang, & Tsai, 2005). Since entrepreneurial competencies are related to business performance (Mitchelmore & Rowley, 2010), entrepreneurs must pay a special attention to their competency improvement in order to boost performance.

On the other hand, business environment has diverse impacts on business performance (Ahmad, Ramayah, Wilson, & Kummerow, 2010; Krause et al., 2010). One of the most significant factors in business environment is social norm (Hong & Kacperczyk, 2009). Social norms may vary from region to region and culture to culture. Regarding the fact that different countries may have different social norms, the level of entrepreneurial competencies affected by culture might be different as well.

This paper utilizes GEM data collection statistics 2010 (Kelley et al. 2011) to investigate the influence of entrepreneurial competencies on business performance with the impact of social norms among early stage businesses from 59 countries all over the world. According to GEM (Bosma & Levie 2010a), early stage entrepreneurs are those who first founded a business or second involved in a business which is less than 42 months old. Using GEM data and related definitions led us to investigate more on business performance and the effect of social norms on both entrepreneurial competencies and business performance. In the coming parts, his subject matter will be investigated in full details.

Entrepreneurial competencies

Launching a new business requires different resources varying from financial to behavioral resources. As it is believed that an entrepreneur could find all the resources in the environment to provide finance, information and social capital, there are some internal factors which makes launching a business happen. Competency explains the notion for these internal factors. Generally, competency is categorized into knowledge, characteristics and skills (Mojab et al. 2011). Researchers investigated six types of entrepreneurial competencies in terms of entrepreneurial personality traits which include: opportunity, relationship, conceptual, organizing, strategic and commitment competencies (Man, Lau, & Chan, 2002).

On the other hand, competency is divided into natural and artificial competencies. Natural competency is internally established in an entrepreneur like personality traits, attitudes, self-image, and social role while artificial competency is adventitious like skill, knowledge and experience (Ismail, 2012). Describing entrepreneur scan (E-Scan), researchers defined four types of competencies each of which consists of a group of features: Knowledge (market, people, finances, production), Motivation (autonomy, achievement, power), capabilities (manage, motivate, organize-plan, financial administration) and characteristics (taking risk, affiliation, tolerance of ambiguity etc.) (Driessen & Zwart, 2007).

Global Entrepreneurship Monitor investigates entrepreneurial competencies via assessing perceived capability, perceived opportunities, having less fear of failure and entrepreneur's role models all year round (Autio, 2005). Studies reveals that according to the nature of

competencies, perceived capability and opportunities refer to skills of an entrepreneur where role models and less fear of failure are targeted to define entrepreneur's personality (Zali, Bastian, & Qureshi, 2013). Accordingly, in this study entrepreneurial competencies are defined as entrepreneur's skills and entrepreneurial personality.

The significance of entrepreneurial competencies for business performance

Along with globalization, SMEs face increasingly competitive business environment(s) resulting in difficulties to improve or sustain business performance (Kraus, Rigtering, Hughes, & Hosman, 2012). Considering three types performance including survival, profit and generated employment, human capital is an indispensable factor which influences business performance (Bosma et al. 2004). Human capital is every company's tangible asset and regardless of industry type, it is significant to business performance (Bontis et al. 2000). On the other hand, competencies generate human capital of a company which represents education, experience, skills, genetics and attitudes of business owner and his employees (Bontis et al., 2000). Studies show the effect of human capital on local employment growth and economic development (Appleton & Teal, 1998; Faggian & McCann, 2009; Gundlach, 1999; Plummer & Taylor, 2004). Thus, entrepreneurial competencies affects business performance (Faggian & McCann, 2009; Mitchelmore & Rowley, 2010). Also, a study shows that competency is related to a superior performance in any given circumstance (Hayton & Kelley, 2006) and successful businesses are led by competent owners (Chandler & Jansen, 1992).

As it is discussed earlier, in this study entrepreneurial competencies are skills and personality of an entrepreneur (Zali et al., 2013). A great body of literature performed a detailed investigation regarding the influence of entrepreneurial skills on venture performance (Mitchell et al., 2002) and business performance (Chandra, Styles, & Wilkinson, 2009). On the other hand, personality traits of an entrepreneur is related to venture creation (Lee & Tsang, 2001) and performance itself (Rauch & Frese, 2007; Deniz, Boz, & Ertosun, 2011; Van Auken, Stephens, Fry, & Silva, 2006).

Business performance

While the significance of business performance is addressed to organizational effectiveness, in a broader concept, there are two indicators explaining business performance including financial performance (sales growth, profitability, earning per share) and operational performance (market share, new product, product quality, marketing effectiveness and value added) (Venkatraman & Ramanujam, 1986). In an study performed on firm performance, perceived performance is defined as an indicator including growth, firm profitability and market share in which firm growth and profitability are the essential parts of a firm's performance and those are measured to evaluate the competitiveness of the firm (Soininen, Martikainen, Puumalainen, & Kyläheiko, 2012). Another study explored business performance indicators as sales growth, customer growth, profit growth and working capital growth (Ismail, 2012). While performance would be divided onto financial and non-financial performance where financial performance is financial efficiency and profit measures and non-financial performance includes customer satisfaction, sales growth, and employee's growth and market share, SMEs often investigate their growth via turnover growth and employment growth (Sidik, 2012).

Based on GEM 2011 report (Kelley, Singer, & Herrington 2012), business performance is measured by three main factors including growth (current and expected growth level of employees), amount of export and, innovation which shows the availability of new technologies, new products and their competitors (Bosma & Levie 2010b). Based on above mentioned discussions, we define the first hypothesis as below:

H1: There is a meaningful relationship between entrepreneurial competencies and business performance.

Social norms

Social norms are explanation of required, permitted or prohibited actions which vary in different cultures and circumstances (Ostrom, 2000). Another study defines social norms as perception of people in which people behave, rules improve or could be improved by social manners (Etzioni, 2000). Elster believes that if norms are social, they are related to people and in this way social norms always follow people's approval or disapproval (Elster, 1989). While social norm affects social behavior, it can easily institutionalize personal behavior (Wenzel, 2004). While there is no law available to execute social norms, culture can play an important role (Ajzen, 2002). Social norms include perceptions and incentives of an individual regarding his significant ones' opinions on a specific subject (Oh & Hsu, 2001) and, would be divided into subjective norms and beliefs (Herold, Maticka-Tyndale, & Mewhinney, 1998). GEM model (Levie & Autio, 2008), refers to social norms as social image and national attitude to entrepreneurship where, social image is defined as social status of entrepreneurs and media attention to entrepreneurship and, national attitude is meant to preference of not having similar standards of living and "entrepreneurship" as a desirable career (Zali, Bastian, & Qureshi, 2013).

Social norms and entrepreneurial competencies

Social norm derives from cultural context of a nation. There is variety of cultural backgrounds influencing numerous aspects of an individual's social environment. Entrepreneurs share a set of cultural and social values, some of which are completely based on nationality (Muzychenko, 2008). Social norms which vary in different countries, may motivate improvement of entrepreneurial competencies. GEM model also differentiates culture in analyzing entrepreneurship throughout the world, and social norms contribute to entrepreneurial intention (Levie & Autio, 2008). Considering skills as entrepreneurial competency (Zali et al., 2013), studies prove the influence of culture on skill utilization (Connell, Lynch, & Waring, 2001), skill development/expansion (Dickson & Riegel, 2009) and skill acquisition (Dickson & Riegel, 2009). Also, it is investigated that social media as a component of social norm that influences societies' growth (Ali, 2011), may influence skill (Omi et al., 2004) and business performance as well (Smits & Mogos, 2013). Based on this, we define the second and third hypotheses as below:

H2: There is a meaningful relationship between social norms and entrepreneurial competency. H3: There is a meaningful relationship between social norms and business performance.

Methods

Current study enjoys data of global entrepreneurship monitor (GEM) gathered during 2010 from Early stage entrepreneurs of all member countries around the world. Early stage entrepreneurs' data comes from 59 countries including United States, Russia, Egypt, South Africa, Greece, Netherlands, Belgium, France, Spain, Hungary, Italy, Romania, Switzerland, UK, Denmark, Sweden, Norway, Germany, Peru, Mexico, Argentina, Brazil, Chile, Colombia, Malaysia, Australia, Japan, Korea, China, Turkey, Pakistan, Iran, Tunisia, Ghana, Angola, Uganda, Zambia, Portugal, Ireland, Iceland, Finland, Latvia, Montenegro, Croatia, Slovenia, Bosnia and Herzegovina, Macedonia, Guatemala, Costa Rica, Bolivia, Ecuador, Uruguay, Azores, Vanuatu, Trinidad & Tobago, Jamaica, Taiwan, Saudi Arabia, and West Bank & Gaza Strip. Sample size determined by all complete (without missing) data of mentioned records. Finally, One hundred and twenty five cases from individual early stage entrepreneurs were selected. Study model consists of three main constructs including: entrepreneurial social norms, entrepreneurial competencies and business performance, each of which determined by series of observed variables as below:

Entrepreneurial Social Norms: The construct was measured by two mixed subconstructs including social image of the entrepreneurs and national attitude toward entrepreneurship. Social image of the entrepreneurs was measured by social status of entrepreneurs and media attention to entrepreneurship. National attitude toward entrepreneurship was measured by preference of not having similar standards of living and entrepreneurship as a desired career path.

Entrepreneurial Competencies: This construct was measured by two sub constructs including entrepreneurial skills (measured by entrepreneurs' perceived capability and perceived opportunities) and entrepreneurial personality (composed of having less fear of failure and entrepreneur's role models).

Business Performance: This was measured by three composite variables including growth (composed of current and expected growth in population of employees, export (the percent of customers living abroad), and innovation (the sum of scores for availability of new technologies, new products and their competitors).

Constructs, their respective items and reliability measures are shown in Table 1. Cronbach's alpha coefficient for their reliability test.

Data analysis was performed by structural equation modeling's (SEM) method of Partial Least Squares (PLS). VPLS 1.04 was utilized in order to analyze measurement and structural model of study. Also, we applied to analyze demographic data.

Results and discussion

In the first phase, demographic characteristics of individual early stage entrepreneurs from 59 countries were analyzed. Results of this analysis include population of participated countries, gender, age and educational level which are shown in the Table 2.

As we mentioned earlier, the model was analyzed by Partial Least Squares method. In this type of analysis, model should be analyzed from two points of view: the measurement model and the structural model.

Reliability of individual items is determined by their factor loading which should not be less than 0.40 (Hulland, 1999). Results for primary analysis and respective amendments

Table 1 Construct, scales, validity and reliability of constructs

Construct	Measures	Measure's scale	Cronbach's alpha
Entrepreneurial social norms	Social image of entrepreneurs	Sum of 'social status of entrepreneurs' and 'media attention' (in a nominal scale yes = 1 and no = 0) which has been converted to numerical scale in a value range from 0 to 2.	0.76
	National attitude toward entrepreneurship	Sum of 'preference for not having a similar life level' and 'entrepreneurship as a desirable career' (in a nominal scale yes = 1 and no = 0), which has been converted to numerical scale in a value range from 0 to 2.	
Entrepreneurial competencies	Entrepreneurial skills	Sum of perceived capability and perceived opportunity in a nominal scale (yes = 1 and no = 0) which has been converted to a numerical scale in a value range from 0 to 2.	0.66
	Entrepreneurial personality	Sum of 'no fear failure' and 'role model' (in a nominal scale yes = 1 and no = 0) which has been converted to numerical scale in a value range from 0 to 2.	
Business performance	Growth	Sum of Logarithm of current and expected growth in number of employees(for five year)	0.72
	Export	The percent of customers living abroad	
	Innovation	The sum of scores of Availability of new technologies, New product, Competitors(in GEM)	

are shown in the Table 3. In the "Entrepreneurial social norms" construct, the item "National Attitude toward Entrepreneurship" shows lower factor loading score than threshold limit noted by Hulland (1999) and we put the item aside from the model and then we re-analyzed the model. The same procedure is also applied to the Entrepreneurial Personality in Entrepreneurial Competencies' construct and to the Export in the "Business performance" construct. Now, the reliability score for the items has passed the threshold limit. Reliability of constructs also was guaranteed by the Cronbach's alpha score (scored above 0.6) (Moss et al., 1998) for all of them as shown in Table 1.

The Average Variance Extracted (AVE) score for all of the constructs in the amended model is above 0.5 (Tominc & Rebernik, 2007), showing suitable convergent validity. But, it should be noted that dropping the items with low factor loadings resulted the measurement of Entrepreneurial social norms and Entrepreneurial competencies to a one measurement item and their AVE score should be considered equal to 100 percent.

The third precondition to consider the measurement model as a valid one is to analyze discriminant validity. According to Akin et al. (2009), discriminant validity could be assessed by comparing the square root of AVE of each construct to the correlation of the construct with the other constructs of the model. This comparison results are shown in Table 4.

It could be easily understood from the Table 4 that each construct shows more correlation with their respective items compared to other constructs of the model and discriminant validity of constructs is supported.

After assessment of adequacy of measurement model, structural relationship between constructs should be tested. On the other hand, results of this assessment bring answers to hypothesized relationships. As we hypothesized, Results show that, there is a positive ($\gamma = 0.24$) relation between Entrepreneurial competencies and business performance, bringing support for the first hypothesis (H1). Results also revealed that entrepreneurial social norms positively ($\gamma = 0.20$) influence the entrepreneurial competencies, and supports hypothesis H2. Finally, the analysis of data to assess H3 could not bring adequate

Table 2 Entrepreneurs' demographic data

Demographic variable	Values	Percent	Valid percent
Country	United States	1.1	1.1
	Russia	0.5	0.5
	Egypt	0.8	0.8
	South Africa	1.3	1.3
	Greece	0.3	0.3
	Netherlands	0.1	0.1
	Belgium	0.2	0.2
	France	0.3	0.3
	Spain	1.1	1.1
	Hungary	2	2
	Italy	0.1	0.1
	Romania	0.1	0.1
	Switzerland	0.4	0.4
	UK	0.5	0.5
	Denmark	0.3	0.3
	Sweden	0.2	0.2
	Norway	0.5	0.5
	Germany	0.8	0.8
	Peru	1.4	1.4
	Mexico	1.4	1.4
	Argentina	0.8	0.8
	Brazil	1	1
	Chile	6.3	6.3
	Colombia	6.1	6.1
	Malaysia	0.6	0.6
	Australia	0.5	0.5
	Japan	0.1	0.1
	Korea	0.2	0.2
	China	6.4	6.4
	Turkey	0.9	0.9
	Pakistan	0.2	0.2
	Iran	1	1
	Tunisia	0.1	0.1
	Ghana	6.7	6.7
Angola	9.2	9.2	
Uganda	7.4	7.4	
Zambia	9.1	9.1	
Portugal	0.3	0.3	
Ireland	0.6	0.6	
Iceland	0.5	0.5	
Finland	0.1	0.1	
Latvia	0.9	0.9	
Montenegro	1.1	1.1	

Table 2 Entrepreneurs' demographic data (*Continued*)

	Croatia	0.6	0.6
	Slovenia	0.2	0.2
	Bosnia and Herzegovina	0.6	0.6
	Macedonia	0.7	0.7
	Guatemala	2.7	2.7
	Costa Rica	0.6	0.6
	Bolivia	3.1	3.1
	Ecuador	1	1
	Uruguay	0.7	0.7
	Azores	0.2	0.2
	Vanuatu	6.9	6.9
	Trinidad & Tobago	1.1	1.1
	Jamaica	2.1	2.1
	Taiwan	3.5	3.5
	Saudi Arabia	1.5	1.5
	West Bank & Gaza Strip	0.8	0.8
	Total	100	100
Gender	Male	59.9	59.9
	Female	40.1	40.1
	Total	100	100
Age	less than 18	1.5	1.5
	18 to 28	27.2	27.8
	28 to 38	30.7	31.5
	38 to 48	21.1	21.6
	48 to 58	11.5	11.8
	more than 58	5.6	5.7
	Total	97.6	100
	Not responded	2.4	
		100	
Education	None	13.7	13.9
	Some secondary	20.9	21.3
	Secondary degree	31.7	32.2
	Post-Secondary	27.2	27.6
	Higher Degree	4.9	5
	Total	98.4	100
	Cannot code	1.6	
		100	

statistical evidence to support this hypothesis therefore hypothesis 3 is rejected. A summary of hypothesis assessment results is presented in the Table 5.

Conclusions

In current era, businesses need to be more aware of their performance and its influencing factors. Review of literature shed some light on the relationship between entrepreneurial competencies and business performance. As previous studies show that entrepreneurial

Table 3 Item reliability assessment and amendment

Model	Constructs	Item	Entire sample estimate	Mean of subsamples	Standard error	T-statistic	AVE
Initial model	Entrepreneurial social norms	National attitude to entrepreneurship	0.36	0.45	0.26	1.39	0.51
		Social image of entrepreneurs	0.95	0.86	0.18	5.38	
	Entrepreneurial competencies	Entrepreneurial skills	0.87	0.82	0.21	4.13	
		Entrepreneurial personality	-0.21	-0.42	0.25	-0.82	
	Business performance	Growth	0.76	0.65	0.26	2.97	
		Export	-0.10	-0.47	0.28	-0.35	
Amended model	Entrepreneurial social norms	Social image of entrepreneurs	1.00	1.00	0.00	0.00	0.584
		Entrepreneurial competencies	1.00	1.00	0.00	0.00	
	Business performance	Growth	0.84	0.80	0.20	4.14	
		Innovation	0.51	0.50	0.26	1.99	

competencies have impact on business performance (Mitchelmore & Rowley, 2010), in this paper we investigated this effect among early stage entrepreneurs selected from a pool of GEM global data statistics. And since social norms vary among different countries, we also measured the influence of social norms on entrepreneurial competencies and business performance.

According to the investigation of business performance in this study, export rates were removed from performance measures and it shows that in order to improve performance, companies should not necessarily involve in export activities. In other words, export rates are not considered as an advantage for the companies.

Results as we expected confirmed previous studies about the positive impact of entrepreneurial competencies on business performance. While those entrepreneurs who launch businesses do not own qualified competencies to manage firms, there will not be improvement in business performance. In detail, according to GEM measures for entrepreneurial competencies, we defined competencies as entrepreneurial personality and skills. The results obtained from this paper confirms the validity of literature review that skill is the main entrepreneurial competency and has positive impact on business performance (Mitchell et al., 2002) while personality of an entrepreneur, which consists of role model and less fear of failure, do not have any impact on forming entrepreneurial competency. This finding clarifies that personalities and characteristics of entrepreneurs are not considered as entrepreneurial competencies. Since entrepreneurial skills are acquisitive, the

Table 4 Discriminant validity assessment

Constructs	Entrepreneurial social norms	Entrepreneurial competencies	Business performance
Entrepreneurial social norms	1		
Entrepreneurial competencies	0.206	1	
Business performance	0.006	0.231	0.764

Table 5 A summary of findings

Hypothesis	Independent variable	Dependent variable	γ	T	Hypothesis accepted/rejected
H1	Entrepreneurial competencies	Business performance	0.24	3.04	Accepted
H2	Entrepreneurial social norms	Entrepreneurial competencies	0.20	2.34	Accepted
H3	Entrepreneurial social norms	Business performance	-0.04	-0.64	Rejected

results confirms that entrepreneurial competencies are learnable and changeable. (Man, Lau, & Chan, 2002).

On the other hand, findings reveal that social norm as a distinguished factor of any country also has a positive effect on entrepreneurial competencies. This shows that social norms influence the individuals' tendency toward entrepreneurial skills' acquisition and hence, makes entrepreneurs attempt more to obtain more competencies.

Although these findings show the importance of cultural environment those entrepreneurs grew up in, it also shows social norm has no significant effect on business performance. And, this result is rational in global level so as literature confirms, norms have no influence on business performance. Also, according to findings, unlike significant role of social image of a country on social norm, national attitude toward entrepreneurship does not have any significant role on shaping social norms because this is the individuals' personal viewpoints which is not considered as social norm. Perhaps the reason behind this is that social norms define social musts and must-nots and individuals' viewpoint cannot solely influence on the formation of these norms.

Moreover, by taking the result of this study into account, governments can utilize and put more investment on foster more competent entrepreneurs because competent entrepreneurs are able to make their businesses perform better. Also, while social norms play a significant role in business environment, governments should pay more attention to social image including media as the greatest advertisement tool influencing peoples' minds, which would lead to a greater entrepreneurial competencies among societies.

In this study, we considered early stage entrepreneurs as our target population, which may impede the application of results in general use. All studied entrepreneurs were from the countries which were a member of Global Entrepreneurship Monitor (GEM) and this might lead some customization of the results when applying to global studies and practices. There were numerous case studies with some missed data which resulted in a considerable reduction of the engaged cases in the model and it might lead to a little difference compared to the bigger population.

As this study takes different countries with different cultures into account, investigating the context-based result for more precise analysis is suggested. While countries all over the world enjoy different business environments, social norms' influence would be different as well. Thus, the result of study may be more noticeable if we use qualitative approach by considering the influence of each single country's social norm on both entrepreneurial competencies and business performance.

Competing interests

The authors declare that they have no competing interests.

Authors' contributions

MB carried out Entrepreneurship studies, participated in GEM and drafted the manuscript. KP carried out Entrepreneurship studies, participated in GEM and drafted the manuscript. MA carried out Entrepreneurship studies, participated in GEM and drafted the manuscript. SKH carried out Entrepreneurship studies, participated in GEM and drafted the manuscript. All authors read and approved the final manuscript.

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