
Romanian Entrepreneurship in International View

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Abstract

The aim of this article is to identify Romania's place among the 71 countries, which participated in the Global Entrepreneurship Monitor project in at least one year between 2002-2009 time period, by entrepreneurship and economic development level. The study is based on individual and institutional variables, which are the main components of the Global Entrepreneurship and Development Index.

Keywords: Global Entrepreneurship and Development Index, entrepreneurial aspirations, entrepreneurial activity, entrepreneurial attitudes, Global Entrepreneurship Monitor.

JEL Classification: L26, O10, O57

Introduction

Recently, the relation between entrepreneurship and economic development appears to be a widely treated subject in the literature. According to Naudé (2008) despite the progress, entrepreneurship in economic development remains a relatively under-researched phenomenon. Acemoglu and Johnson (2005) affirmed that the economic development is strengthened by the productive entrepreneurial activity.

There are some research projects, which are actively involved in measuring the quality and quantity of entrepreneurship across countries and over time (i.e., Global Entrepreneurship Monitor, World Bank, The Heritage Foundation and the World Economic Forum projects).

Global Entrepreneurship Monitor (GEM) is a large-scale research program launched in 1997 by leading researchers in the field of entrepreneurship at London Business School and Babson College. The main aim

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of GEM research is to study the complex relationship between entrepreneurship and economic growth, to measure the level of entrepreneurial activity between countries, to uncover factors determining the levels of entrepreneurial activity and to identify policies which may stimulate the level of entrepreneurial activity. GEM, as a research program that focuses on a major driver of economic growth, on entrepreneurship, admits the widely acknowledged phenomena that entrepreneurship is one of the most important forces shaping the changes in the economic landscape.

Acs and Szerb developed in 2009 the Global Entrepreneurship and Development Index (GEDI), which offers a measure of the quality and quantity of the business formation process in 71 countries⁶ in the world. This index captures the contextual feature of entrepreneurship by focusing on entrepreneurial attitudes, entrepreneurial activity and entrepreneurial aspirations.

In this article we present a country level interpretation of Acs and Szerb's GEDI index and its three pillars (entrepreneurial activity, entrepreneurial aspiration, and entrepreneurial attitudes) regarding the Romanian entrepreneurship in international comparison.

Methodology and data

The GEDI index components are based on individual level or institutional level variables. All individual level variables are from the GEM Adult Population Survey. The institutional variables are obtained from various sources, like the World Economic Forum, The Heritage Foundation, Coface, UNESCO, etc. All pillars or indicators were calculated from the variables by multiplying the individual variable with the proper institutional variable. The indicators are the basic building blocks of the three sub-indexes: entrepreneurial attitudes, entrepreneurial activities, and entrepreneurial aspirations. The Penalty for Bottleneck⁷ method is used to calculate the three sub-indexes from the indicators. Finally, the GEDI is simply the average of the three sub-indexes (for details see Appendix 2).

⁶These countries participated in the Global Entrepreneurship Monitor project at least one year between 2002-2009 (see Appendix 1).

⁷The Penalty for Bottleneck takes into account the weakest pillar value of a particular sub-index and penalizes for the differences between pillars.

The entrepreneurial attitude (ATT) sub-index aims to identify entrepreneurial attitudes associated with the entrepreneurship-related behaviour of a country's population. This sub-index takes into consideration the following indicators: opportunity perceptions, start-up skills, non-fear of failure, networking and cultural support.

The entrepreneurial activity (ACT) sub-index is principally concerned with measuring high growth potential start-up activity based on opportunity start-up, technology sector, quality of human resources, competition.

The entrepreneurial aspiration (ASP) sub-index refers to the distinctive, qualitative, strategy related nature of entrepreneurial activity based on the novelty of the product and the technology, high growth aspirations, internationalisation (which takes into consideration the share of foreign customers), and risk capital.

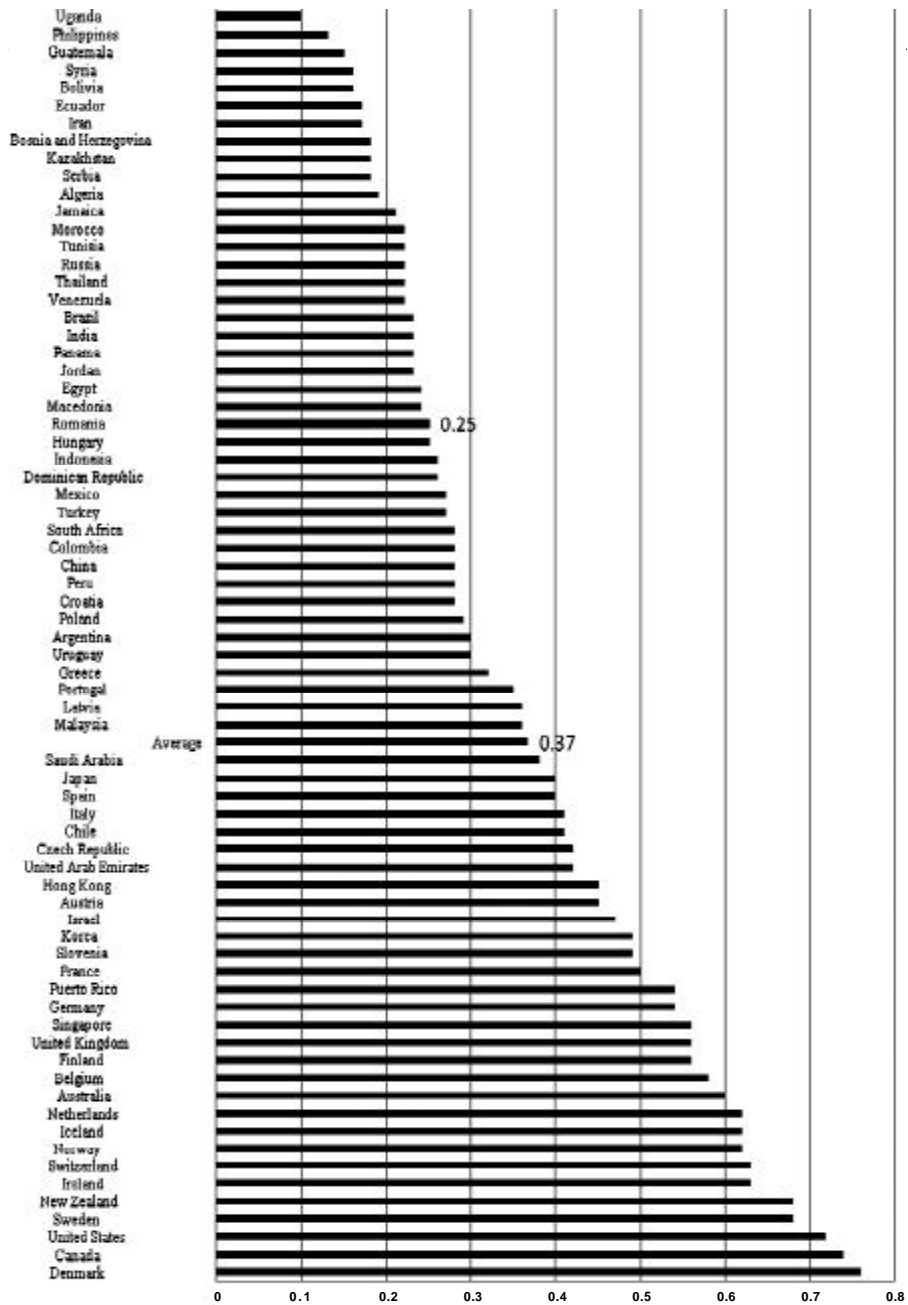
The data is based on the pooled data of 71 countries in the 2002-2008 time periods. Not all the countries participated in each year of the GEM survey. Romania's position is analysed based on the 2007 and 2008 data.

Global Entrepreneurship and Development Index in Romania

The values of the GEDI by countries can be seen in Figure 1. According to this figure, Romania ranks 48th, with 0.25 points. Denmark has the highest GEDI value, more than three times higher than Romania. The value registered in Romania is lower than the GEDI average (0.37) of the analysed GEM participating countries.

A more proper analysis is to compare Romania's position to similarly developed countries. The highest ranked efficiency-driven economy⁸,

⁸ The Global Entrepreneurship Monitor Global Reports (Bosma et al., 2009, p.4; Bosma & Levie, 2010, p.5) classify the participating countries in three groups which are considered to be relevant to entrepreneurship in relation to economic development, on basis of the Global Competitiveness Reports: factor-driven economies, efficiency-driven economies and innovation-driven economies. The efficiency-driven economies begin to develop more efficient production processes and increase product quality than the factor-driven economies. In the efficiency-driven economies competitiveness is increasingly driven by higher education and training, efficient goods markets, well-functioning labor markets, sophisticated financial markets, a large domestic and/or foreign market, and the ability to harness the benefits of existing technologies. The efficiency-driven economies are: Argentina, Bosnia and Herzegovina, Brazil, Chile, China, Colombia, Croatia, Dominican Republic, Ecuador, Hungary, Iran, Jordan, Latvia, Macedonia, Malaysia, Mexico, Panama, Peru, Poland, Romania, Russia, Serbia, South-Africa, Thailand, Tunisia, Turkey, and Uruguay.



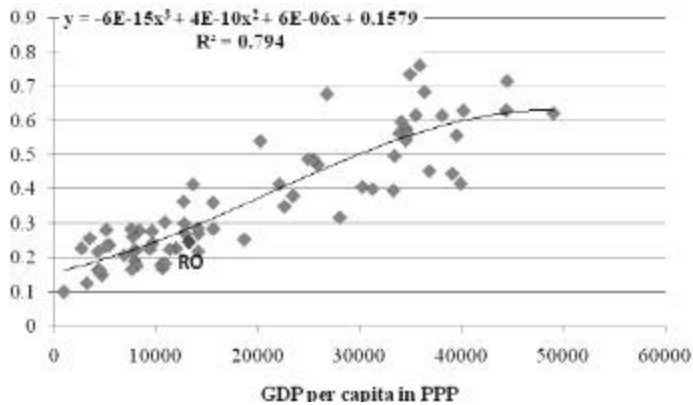
Source: www.gemconsortium.org

Figure 1. Global Entrepreneurship Development Index (GEDI) by country

Chile, has 0.41 GEDI value, which is 1.6 times higher than Romania's. The lowest value from these economies is reached by Ecuador (0.17). Of the 27 efficiency-driven economies, Romania is 16th, still in the second half. Among the transitional Central and Eastern European countries, Romania is in the middle position. Only three countries, Poland, Croatia, and Hungary, overtake Romania, Hungary by a very small margin. The other CEE countries, Macedonia, Russia, Serbia, and Bosnia and Herzegovina, are behind Romania.

The next four figures present Romania's relative position, not only in the GEDI, but also in the three sub-indexes in terms of GDP per capita. The curves represent the development implied trend line of the GEDI index and the three sub-indexes.

In case of Figure 2 the trend line⁹ is based on a third-degree polynomial fitting. Romania is situated below the trend line, which means that the Romanian entrepreneurial performance is relatively unfavourable.



Source: Calculations based on Acs, Z.A. & Szerb, L. methodology

Figure 2. Global Entrepreneurship Development Index by GDP per Capita

Romania is somewhat below the development implied trend line in all four cases. Romania ranks 53rd in the Entrepreneurial Attitudes Sub-index, 44th in the Entrepreneurial Activity Sub-index, and 47th in the Entrepreneurial Aspiration Sub-index among the 71 GEM participating countries (see Table 1).

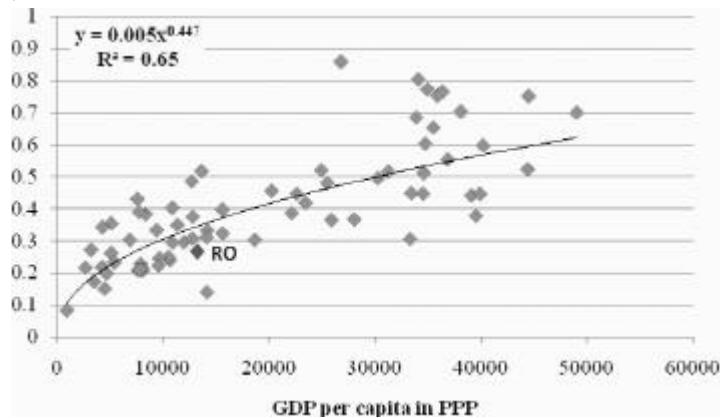
⁹ If a country's position is below the trend line, it means it has a lower level of performance of that particular factor than implied by its development trend. A position above the trend line means a relatively favourable entrepreneurial performance.

Table 1. Romania's ranking among GEM participating countries by GEDI and the three sub-indexes

	GEDI	ATT	ACT	ASP
Global (71 countries)	48	53	44	47
Efficiency-driven economies (27 countries)	16	18	11	14

Source: Own calculations based on *GEMbynation.xls*¹⁰

Figure 3 presents the Entrepreneurial Attitudes Sub-index by GDP per capita. In this case the trend line is based on a power regression. The opportunity perception is the weakest between the Entrepreneurial Attitudes Sub-index components, which has a negative influence on the other four components of the sub-index.



Source: Calculations based on *Acs, Z.A. & Szerb, L. methodology*

Figure 3. Entrepreneurial Attitudes Sub-index by GDP per Capita

Romanian entrepreneurs have a low level of the skills needed for a successful start-up, the vital cultural recognition and support of entrepreneurs is also missing. The difference from the trend line is the greatest in the case of Entrepreneurial Attitudes Sub-index, which can be seen in Figure 3. At the same time, the other two attitude pillars, the level of networking and the risk tolerance, are acceptable, as Table 2 shows it.

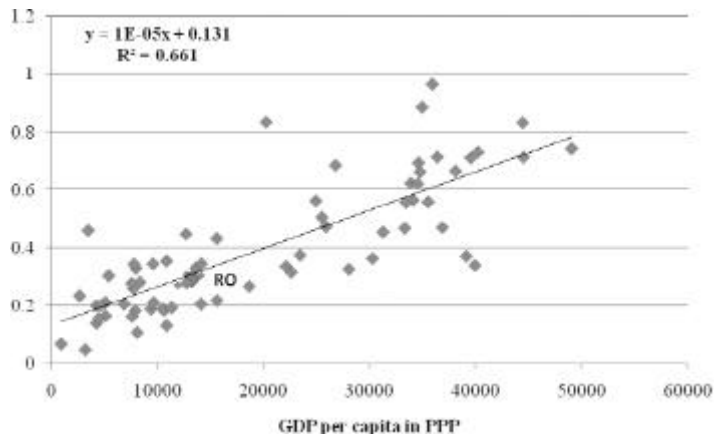
¹⁰ [www.gemconsortium.org/Members area](http://www.gemconsortium.org/Members%20area)

Table 2. Romania's ranking among GEM participating countries by the components of the Entrepreneurial Attitudes Sub-index

	Opportunity perception	Start-up skills	Non fear of failure	Net-working	Cultural support
Global (71 countries)	63	58	40	32	56
Efficiency-driven economies (27 countries)	23	23	9	6	21

Source: Own calculations based on *GEIbynation.xls*

Also, we can observe on the figure below (Figure 4), that this difference is the least in case of the Entrepreneurial Activity Sub-index. The low level of technology sector start-ups limits the activity. Next to start-ups in the technology sector, the high level of competition is the weakest pillar of the activity. High competition means that Romanian start-ups mainly occur in sectors that already have many similar businesses.



Source: Calculations based on Acs, Z.A. & Szerb, L. methodology

Figure 4. Entrepreneurial Activity Sub-index by GDP per Capita

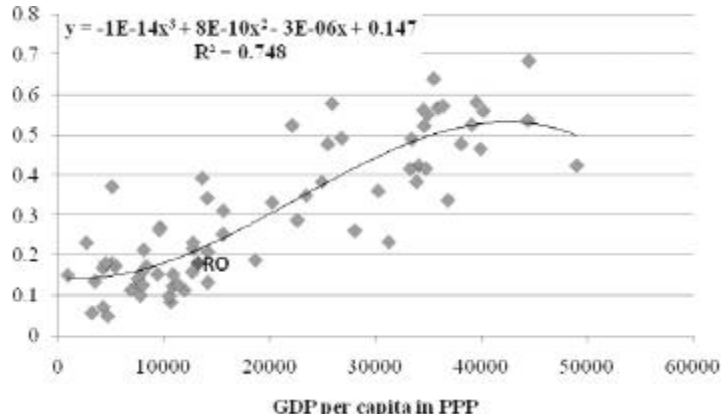
The strongest pillar value is the quality of human resources (which value is the highest among the efficiency-driven economies), meaning that entrepreneurs, who have at least a postsecondary education, start new start-ups and young businesses in Romania.

Table 3. Romania's ranking among GEM participating countries by the components of the Entrepreneurial Activity Sub-index

	Opportunity start-up	Technology sector	Quality of human resource	Competition
Global (71 countries)	43	59	11	56
Efficiency-driven economies (27 countries)	10	24	1	19

Source: Own calculations based on GElbynation.xls

Romania's lowest sub-index value is in the Entrepreneurial Aspiration Sub-index, which means that the difference between Romania and the leading nations is the highest in case of the Entrepreneurial Aspiration Sub-index.



Source: Calculations based on Acs, Z.A. & Szerb, L. methodology

Figure 5. Entrepreneurial Aspiration Sub-index by GDP per Capita

The aspiration sub-index contains the most diverse value pillars. The application of new technology and the missing formal and informal venture capital are the two weakest performing pillars, not only in the Entrepreneurial Aspiration Sub-index but also in the whole system. The new technology component is the weakest among all GEM participating countri-

es. The internationalisation is the strongest pillar, meaning that Romanian start-ups are open to export to international markets (3rd place among the efficiency-driven economies). The large number of Romanians working abroad probably fuels internationalisation. To improve Entrepreneurial Aspiration Sub-index, the product and technology innovation as well as the venture finance position should be strengthened.

Table 4. Romania's ranking among GEM participating countries by the components of the Entrepreneurial Aspiration Sub-index

	New product	New tech	High growth	Internationalisation	Risk capital
Global (71 countries)	46	71	31	16	63
Efficiency-driven economies (27 countries)	15	27	9	3	23

Source: Own calculations based on GEIbystation.xls

Conclusions

Romania appears among the lowest 33 percentage of the entrepreneurial economies and ranks 48th by GEDI. It performs the worst on the Entrepreneurial Attitudes Sub-index. At the pillar level, Romania is strong in internationalisation, quality of human resources and networking, but weak in new technology, risk capital and opportunity perceptions. The improvement of opportunity recognition capabilities can be done through educational changes. The low ranking regarding the new technology usage is caused mainly by the lack of new technology-oriented individual initiatives. Informal venture capital is identified also as being problematic. Formal venture capital investment could be improved by further development of stock and capital markets.

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Appendix 1. The GEM participating countries between 2002–2008 and the new countries in 2009 (Source: *www.gemconsortium.org*)

Country	2002	2003	2004	2005	2006	2007	2008	2009
Algeria								x
Argentina	x	x	x	x	x	x	x	
Australia	x	x	x	x	x			
Austria				x		x		
Belgium	x	x	x	x	x	x	x	
Bolivia							x	
Bosnia&Her.							x	
Brazil	x	x	x	x	x	x	x	
Canada	x	x	x	x	x			
Chile	x	x		x	x	x	x	
China	x	x		x	x	x		
Colombia					x	x	x	
Croatia	x	x	x	x	x	x	x	
Czech Republic					x			
Denmark	x	x	x	x	x	x	x	
Dominican Rep.						x	x	
Ecuador			x				x	
Egypt							x	
Finland	x	x	x	x	x	x	x	
France	x	x	x	x	x	x	x	
Germany	x	x	x	x	x		x	
Greece		x	x	x	x	x	x	
Guatemala								x
Hong-Kong	x	x	x			x		
Hungary	x		x	x	x	x	x	
Iceland	x	x	x	x	x	x	x	
India	x				x	x	x	
Indonesia					x			
Iran							x	
Ireland	x	x	x	x	x	x	x	
Israel	x		x			x	x	
Italy	x	x	x	x	x	x	x	
Jamaica				x	x		x	
Japan		x	x		x	x	x	

Country	2002	2003	2004	2005	2006	2007	2008	2009
Jordan								x
Kazakhstan						x		
Korea	x						x	
Latvia				x	x	x	x	
Macedonia							x	
Malaysia					x			
Mexico	x			x	x		x	
Morocco								x
Netherlands	x	x	x	x	x	x	x	
New Zealand	x	x	x	x				
Norway	x	x	x	x	x	x	x	
Panama								x
Peru			x		x	x	x	
Philippines					x			
Poland	x		x					
Portugal			x			x		
Puerto Rico						x		
Romania						x	x	
Russia	x				x	x	x	
Saudi Arabia								x
Serbia						x	x	
Singapore	x	x	x	x	x			
Slovenia	x	x	x	x	x	x	x	
South Africa	x	x	x	x	x		x	
Spain	x	x	x	x	x	x	x	
Sweden	x	x	x	x	x	x		
Switzerland	x	x		x		x		
Syria								x
Thailand	x			x	x	x		
Tunisia								x
Turkey					x	x	x	
Uganda		x	x					
United Arab Em.					x	x		
United Kingdom	x	x	x	x	x	x	x	
United States	x	x	x	x	x	x	x	
Uruguay					x	x	x	
		x		x		x		

Appendix 2. The Global Entrepreneurship and Development Index and its components

Individual Variables	Institutional Variables	Pillars (Indicators)	Sub-Indexes	GEDI
Opportunity ¹¹	x	Marketagglom ¹²	=	Global Entrepreneurship Development Index
Skill ¹³	x	Educpostsec ¹⁴	=	
Nonfear ¹⁵	x	Business risk ¹⁶	=	
Knowent ¹⁷	x	Internetusage ¹⁸	=	
Carstat ¹⁹	x	Corruption ²⁰	=	
Teapport ²¹	x	Freedom ²²	=	
Techsect ²³	x	Techabsorp ²⁴	=	
Higheduc ²⁵	x	Stafftrain ²⁶	=	
Compet ²⁷	x	Markdom ²⁸	=	
Newp ²⁹	x	Gerd ³⁰	=	
Newt ³¹	x	Innov ³²	=	
Gazelle ³³	x	Buss strategy ³⁴	=	
Export ³⁵	x	Glob ³⁶	=	
Infinv ³⁷	x	Ventcap ³⁸	=	
			ACTIVITY	
			ASPIRATION	

Source: Acs, Z.J. and Szerb, L. (2010b): pp. 46–51)

¹¹ The percentage of the 18-64 aged population recognizing good conditions to start business next 6 months in area he/she lives.

¹² The size of the market: a combined measure of the domestic market size and the urbanization that later measures the potential agglomeration effect.

¹³ The percentage of the 18-64 aged population claiming to possess the required knowledge/skills to start business.

¹⁴ Gross enrolment ratio in tertiary education.

- ¹⁵ The percentage of the 18-64 aged population stating that the fear of failure would not prevent starting a business.
- ¹⁶ The business climate rate reflects whether corporate financial information is available and reliable, whether the legal system provides efficient creditor protection, and whether a country's institutional framework is favorable to inter-company deals.
- ¹⁷ The percentage of the 18-64 aged population knowing someone who started a business in the past 2 years.
- ¹⁸ The number of internet users in a particular country per 100 inhabitants, 2008, except 2009 countries that are from 2009.
- ¹⁹ The status and respect of entrepreneurs.
- ²⁰ The Corruption Perceptions Index (CPI) measures the perceived level of public-sector corruption in a country.
- ²¹ Percentage of the opportunity-driven early-stage entrepreneurs (TEA).
- ²² Business freedom is a quantitative measure of the ability to start, operate, and close a business that represents the overall burden of regulation, as well as the efficiency of government in the regulatory process.
- ²³ Percentage of the TEA businesses that are active in technology sectors (high or medium).
- ²⁴ Firm level technology absorption capability.
- ²⁵ Percentage of the TEA businesses owner/managers having participated over secondary education.
- ²⁶ The extent of staff training.
- ²⁷ Percentage of the TEA businesses started in those markets where not many businesses offer the same product.
- ²⁸ Extent of market dominance.
- ²⁹ Percentage of the TEA businesses offering products that are new to at least some of the customers.
- ³⁰ Gross domestic expenditure on Research & Development (GERD) as a percentage of GDP.
- ³¹ Percentage of the TEA businesses using new technology that is less than 5 years old average (including 1 year).
- ³² Innovation index points from GCI.
- ³³ Percentage of the TEA businesses having high job expectation average (over 10 more employees and 50% in 5 years).
- ³⁴ Refers to the ability of companies to pursue distinctive strategies, which involves differentiated positioning and innovative means of production and service delivery.
- ³⁵ Percentage of the TEA businesses where at least some customers are outside country (over 1%).
- ³⁶ A part of the Globalization Index measuring the economic dimension of globalization.
- ³⁷ The amount of informal investment.
- ³⁸ A measure of the venture capital availability.