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ASSESSMENT OF THE IMPACT OF INSTITUTIONS ON INNOVATIVE ENTREPRENEURSHIP: A PANEL DATA STUDY

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Abstract

Innovation is the driving force of economic progress which is often developed and mainly implemented by a separate group of enterprises which is defined as innovative enterprises.

This paper explores the impact of institutions on innovative entrepreneurial activity in 27 countries all over the world with panel regression models. By using Global Entrepreneurship Monitor (GEM) data, we assess the influence of both formal and informal institutions on the level of innovative entrepreneurship during the time span 2013-2018.

Our research results underline that institutions are a crucial factor of innovative entrepreneurship and that the most positive impact on innovative entrepreneurship has the quality of regulation and property rights. Moreover, the impact of institutions on innovative entrepreneurship in developed economies differs from the impact in developing countries.

Additionally, we have detected a weak bidirectional causality between innovative entrepreneurship and institutions.

Key words: Innovation, Entrepreneurship, Institutional economics, Panel data, GEM statistics.

Introduction

A modern economy is a complex system that serves many functions. Its main function is no longer limited to distributing resources among people and other economic entities. In the context of meeting the needs of society using limited resources, decision-making for economic entities must be guided by efficient use of resources.

In this respect, the study of innovative entrepreneurship is of paramount importance, as on one hand the goods and services are produced by the enterprises and there is a consensus that entrepreneurship is an element of economic development, and on the other hand the innovation is the means of efficient use of limited resources carried out through enterprises.

Conflict setting

The main purpose of this research is to analyze the impact of the institutional environment on innovative entrepreneurship based on panel data regression models[1].

[1] Use of the panel regression model has a number of advantages over linear regression, such as taking into account the time series factor

Several hypotheses have been proposed for impact assessment, and models of econometric regression have been developed to test proposed hypotheses. There are 4 hypothesis: Institutions impact innovative entrepreneurship (1); the impact of institutions on innovative entrepreneurship in developed economies differs from the impact in developing countries (2); Informal institutions have a greater impact on entrepreneurship than formal institutions (3) there is a bidirectional causality between innovative entrepreneurship and institutions (4).

The innovative TEA from Global Entrepreneurship Monitor (GEM) [1] was used for this paper as dependent variable. It should be noted that after the development of this GEM database, the interest of economists in conducting quantitative research on entrepreneurial activity has increased [2]. GEM database supported a number of quantitative researches studying link between institutions and enterprises. Nevertheless, the majority of studies focus on the level of overall entrepreneurship or entrepreneurial motivation, while quantitative analyzes on innovative entrepreneurship almost do not exist.

Data and variables

To assess the impact of institutions on innovative entrepreneurship, we have developed a balanced panel dataset from a variety of trusted sources (Table 1). It contains both qualitative and quantitative indicators of entrepreneurship, formal and informal institutions.

As already mentioned, dependent variable is innovative TEA in models, which is an indicator of the GEM project, defined as the percentage within TEA of the adult population engaged in the process of setting up a new business or owning an established young business (up to 42 months) considering a new market (few/no business offers the same product).

Independent variables were sources from World Bank World Governance Indicators (WGI) [3], Global Innovation Index [4], WB Doing Business [5], Heritage Foundation Index of Economic Freedom [6], and the results of the GEM expert assessment of the business environment as explanatory factors [7].

Although the main focus was on developing a model to evaluate the impact of institutions, other factors may also influence entrepreneurial activity. To study the pure impact of institutions on innovative TEA and to exclude possible alternative factors, panel regression models also include a number of control variables. Control variables in the model are several economic indicators, in particular, real GDP per capita, GDP growth, Gini index, and several geographical indicators, in particular, proximity to the equator etc. The complete list of variables, description, source and rating scale are presented in the table below.

As data on innovative TEA are available for 2013-2018, those years were considered for the panel data.

All variables (except binary variables) have been scaled from 0-100 to understand the magnitude of the impact of each variable. This helps us to neutralize the existing differences between different rating systems in terms of determining the magnitude of the impact of factors.

In Table 2 descriptive statistics include: mean, standard deviation, minimum and maximum values, median, first and third quartiles of the variables.

Table 1

Description of variables[2]

Nature	Variable	Description	Scale	Source	Short name for model
1	2	3	4	5	6
Dependent variables	Innovative TEA	Percentage of those involved in TEA who indicate that their product or service is new to at least some customers AND that few/no businesses offer the same product	0-100	GEM APS 2011-2018	Innov_TEA
Non-formal institutions	Voice and Accountability	Reflects perceptions of the extent to which a country's citizens are able to participate in selecting their government, as well as freedom of expression, freedom of association, and a free media.	Index (0–100) where 0 is the lowest among economies and 100 is the highest	World Bank WGI 1996-2020	VOICE
	Political Stability and Absence of Violence/Terrorism	Political Stability and Absence of Violence/Terrorism measures perceptions of the likelihood of political instability and/or politically-motivated violence, including terrorism.	Index (0–100)		POL_ST
	Government Effectiveness	Reflects perceptions of the quality of public services, the quality of the civil service and the degree of its independence from political pressures, the quality of policy formulation and implementation, and the credibility of the government's commitment to such policies.	Index (0–100)		GOV_EF
	Regulatory Quality	Reflects perceptions of the ability of the government to formulate and implement sound policies and regulations that permit and promote private sector development.	Index (0–100)		REGUL
	Rule of Law	Reflects perceptions of the extent to which agents have confidence in and abide by the rules of society, and in particular the quality of contract enforcement, property rights, the police, and the courts, as well as the likelihood of crime and violence.	Index (0–100)		LAW
	Control of Corruption	Reflects perceptions of the extent to which public power is exercised for private gain, including both petty and grand forms of corruption, as well as “capture” of the state by elites and private interests.	Index (0–100)		CORR

[2] The table was developed by the author based on the sourced provided earlier

1	2	3	4	5	6
Formal institutions	GEM NES formal	Average of GEM NES 3 indicators: Governmental support and policies, Taxes and bureaucracy, Governmental programs	Index (0–100)	GEM NES 2000-2018	GEM_NES
	Ease of resolving insolvency	These variables are used to calculate the recovery rate, which is recorded as cents on the dollar recovered by secured creditors through reorganization, liquidation or debt enforcement (foreclosure or receivership) proceedings. To determine the present value of the amount recovered by creditors, Doing Business uses the lending rates from the International Monetary Fund, supplemented with data from central banks and the Economist Intelligence Unit. The data for the resolving insolvency indicators are derived from questionnaire responses by local insolvency practitioners and verified through a study of laws and regulations as well as public information on insolvency systems. The ranking of economies on the ease of resolving insolvency is determined by taking the simple average of their scores for the recovery rate and the strength of the insolvency framework index.	Index (0–100)	Global innovation index 2013-2020	RESOLV
	Getting credit	The ranking of economies on the ease of getting credit is determined by sorting their scores for getting credit. These scores are the sum of the scores for the strength of legal rights index and the depth of credit information index.	Index (0–100)	Doing Business	CREDIT
	Property Rights	The property rights component assesses the extent to which a country's legal framework allows individuals to acquire, hold, and utilize private property, secured by clear laws that the government enforces effectively. Relying on a mix of survey data and independent assessments, it provides a quantifiable measure of the degree to which a country's laws protect private property rights and the extent to which those laws are respected. It also assesses the likelihood that private property will be expropriated by the state. The more effective the legal protection of property, the higher a country's score will be. Similarly, the greater the chances of government expropriation of property, the lower a country's score will be.	Index (0–100)	Heritage Foundation 1996-2020	PROP_RIGHHT
	Government Spending	The government spending component captures the burden imposed by government expenditures, which includes consumption by the state and all transfer payments related to various entitlement programs. No attempt has been made to identify an optimal level of government spending. The ideal level will vary from country to country, depending on factors that range from culture to geography to level of economic development. At some point, however, government spending becomes an unavoidable burden as growth in the size and scope of the public sector leads inevitably to misallocation of resources and loss of economic efficiency. Volumes of research have shown that excessive government spending that causes chronic budget deficits and the accumulation of public debt is one of the most serious drags on economic dynamism. The Index methodology treats zero government spending as the benchmark. As a result, underdeveloped countries, particularly those with little government capacity, may receive artificially high scores.	Index (0–100)	Heritage Foundation 1996-2020	GOV_SP

1	2	3	4	5	6
Control variables	PPP income per capita	Provides per capita values for gross domestic product (GDP) expressed in current international dollars converted by purchasing power parity (PPP) conversion factor. GDP is the sum of gross value added by all resident producers in the country plus any product taxes and minus any subsidies not included in the value of the products. Conversion factor is a spatial price deflator and currency converter that controls for price level differences between countries. Total population is a mid-year population based on the de facto definition of population, which counts all residents regardless of legal status or citizenship.	Index (0–100)	World Bank dataset 1960-2020	INCOME
	Economic growth rate	Annual percentage growth rate of GDP at market prices based on constant local currency. Aggregates are based on constant 2010 U.S. dollars. GDP is the sum of gross value added by all resident producers in the economy plus any product taxes and minus any subsidies not included in the value of the products. It is calculated without making deductions for depreciation of fabricated assets or for depletion and degradation of natural resources.	Index (0–100)	World Bank dataset 1960-2020	GROWTH
	Tropical	% Tropical climate. Using detailed temperature and precipitation data from the Climatic Research Unit of the University of East Anglia and the Global Precipitation Climatology Centre of the German Weather Service, Kottek, Grieser, Beck, Rudolf, and Rubel (2006) classify each cell on a 30 arc-minute grid covering the entire land area of the Earth into one of 31 climates in the widely-used Köppen-Geiger climate classification. Based on these data and the country boundaries described above, we calculate the percentage of the land surface area of each country that has any of the four Köppen-Geiger tropical climates.	0-100	Review of Economics and Statistics https://diegopuga.org/data/rugged/	TRPOIC
	GINI index	Gini index measures the extent to which the distribution of income (or, in some cases, consumption expenditure) among individuals or households within an economy deviates from a perfectly equal distribution. A Lorenz curve plots the cumulative percentages of total income received against the cumulative number of recipients, starting with the poorest individual or household. The Gini index measures the area between the Lorenz curve and a hypothetical line of absolute equality, expressed as a percentage of the maximum area under the line. Thus, a Gini index of 0 represents perfect equality, while an index of 100 implies perfect inequality.	Index (0–100)	World Bank dataset 1960-2020	GINI

Table 2

Descriptive statistics on data series[3]

Variables	Obs.	Mean	Std. Dev.	Min	1st Qu.	Median	3st Qu.	Max
Innov_TEA	162	27.955	11.065	0.800	21.450	26.400	33.850	57.100
VOICE	162	70.065	26.099	4.695	60.099	76.440	92.611	99.507
POL_ST	162	57.245	26.714	9.524	34.762	60.238	80.357	98.104
GOV_EF	162	71.764	19.842	23.558	57.003	72.554	91.501	99.519
REGUL	162	70.949	23.363	4.808	60.457	73.031	93.750	99.052
CORR	162	66.389	24.486	15.865	44.712	62.981	93.269	98.578
LAW	162	67.128	24.961	12.500	49.519	67.788	91.971	99.531
GEM_NES	162	46.607	25.661	0.000	26.652	47.130	65.043	100.000
RESOLV	162	59.137	20.734	17.700	45.175	56.150	78.400	96.100
PROP_RIGHT	162	61.329	23.866	10.000	45.000	60.350	87.650	93.800
GOV_SP	162	54.999	24.300	0.000	39.025	51.100	77.875	95.300
CREDIT	162	60.238	23.612	0.000	42.660	65.574	73.770	100.000
GROWTH	162	13.022	10.873	0.000	6.791	10.745	16.494	100.000
INCOME	162	25.102	20.045	0.000	9.365	20.247	36.294	100.000
TRPOIC	162	20.437	36.294	0.000	0.000	0.000	39.447	100.000
GINI	162	36.593	7.583	24.200	31.700	34.850	40.725	53.900

In order to reduce the error level of models and to make the panel model complete, a balanced panel database has been developed, which means for each year each variable must be known. The number of such countries is 27. These countries are listed in Table 3.

Table 3

List of countries observed in the modeling

Country	Country code	Redion (World Bank classification)	Income group (World Bank classification)
Argentina	ARG	Latin America & Caribbean	Upper middle income
Brazil	BRA	Latin America & Caribbean	Upper middle income
Canada	CAN	North America	High income
Switzerland	CHE	Europe & Central Asia	High income
Chile	CHL	Latin America & Caribbean	High income
China	CHN	East Asia & Pacific	Upper middle income
Colombia	COL	Latin America & Caribbean	Upper middle income
Germany	DEU	Europe & Central Asia	High income
Spain	ESP	Europe & Central Asia	High income
United Kingdom	GBR	Europe & Central Asia	High income
Greece	GRC	Europe & Central Asia	High income
Guatemala	GTM	Latin America & Caribbean	Upper middle income
Croatia	HRV	Europe & Central Asia	High income
India	IND	South Asia	Lower middle income
Ireland	IRL	Europe & Central Asia	High income
Iran, Islamic Rep.	IRN	Middle East & North Africa	Lower middle income
Italy	ITA	Europe & Central Asia	High income
Luxembourg	LUX	Europe & Central Asia	High income
Netherlands	NLD	Europe & Central Asia	High income
Panama	PAN	Latin America & Caribbean	Upper middle income
Peru	PER	Latin America & Caribbean	Upper middle income
Poland	POL	Europe & Central Asia	High income
Slovak Republic	SVK	Europe & Central Asia	High income
Slovenia	SVN	Europe & Central Asia	High income
Sweden	SWE	Europe & Central Asia	High income
Thailand	THA	East Asia & Pacific	Upper middle income
Uruguay	URY	Latin America & Caribbean	High income

[3] The table was developed by the author based on the statistical calculation

Methodology

For empirical specification, we consider a panel regression general model shown in equation 1 [8].

$$Y_{it} = \beta_0 + \beta_1 X_{it} + \alpha_i + \varepsilon_{it} \quad (1)$$

Where: Y_{it} is the dependent variable (Innovative TEA); β_0 is the intercept; α_i represents all the stable characteristics of countries; i is the number of country, t is the period; X_{it} represents the vector of independent variables; β_1 are the coefficients; ε_{it} is the error term.

Based on this general model, the several models have been developed to test our hypotheses. Hypothesis 1 (institutions impact innovative entrepreneurship) and Hypothesis 3 (informal institutions have a greater impact on entrepreneurship than formal institutions) can be tested with the Model 1.

Model 1.
$$Innovative\,TEA_{it} = \beta_0 + \beta_1 VOICE_{it} + \beta_2 POL_{ST_{it}} + \beta_3 + GOV\_EF_{it} + \beta_4 REGUL_{it} \beta_5 LAW_{it} + \beta_6 CORR_{it} + \beta_7 GEM_{NES_{it}} + \beta_8 RESOLV_{it} + \beta_8 CREDIT_{it} + \beta_8 PROP\_RIGHT_{it} + \beta_8 GOV\_SP_{it} + \beta_8 INCOME_{it} + \beta_8 GROWTH_{it} + \beta_8 TRPOIC_{it} + \beta_8 GINI_{it} + \alpha_i + \varepsilon_{it} \quad (2)$$

To test whether Hypothesis 2 (the impact of institutions on innovative entrepreneurship in developed economies defers from the impact in developing countries) is confirmed or rejected, an additional independent binary variable has been added that provides information on the development of the economy.

Model 2.
$$Innovative\,TEA_{it} = \beta_0 + \beta_1 VOICE_{it} + \beta_2 POL\_ST_{it} + \beta_3 GOV\_EF_{it} + \beta_4 REGUL_{it} + \beta_5 LAW_{it} + \beta_6 CORR_{it} + \beta_7 GEM_{NES_{it}} + \beta_8 RESOLV_{it} + \beta_8 CREDIT_{it} + \beta_8 PROP\_RIGHT_{it} + \beta_8 GOV\_SP_{it} + \beta_8 INCOME_{it} + \beta_8 GROWTH_{it} + \beta_8 TRPOIC_{it} + \beta_8 GINI_{it} + \beta_8 DEVELOPED_{it} + \alpha_i + \varepsilon_{it} \quad (3)$$

To test whether there is a bidirectional causality between innovative TEA and institutions a group of models has been developed by the concept presented in the Equation 4.

Model 3.
$$Institution_{it} = \beta_0 + \beta_1 Innovative\,TEA_{it} \beta_8 CONTROL\_VAR_{it} + \alpha_i + \varepsilon_{it} \quad (4)$$

Three methods can be used to evaluate models with panel data. The first is the Pooled OLS (Ordinary Least Squares) approach, which does not involve country-specific effects. An alternative assessment approach that incorporates country heterogeneity is the Fixed effect model, which perceives country-specific heterogeneity at the intersection (it varies from country to country). The third evaluation method used for panel data analysis is the Random effect approach.

Which of the three assessment methods to use is usually determined by three statistical tests. Below are these tests, the method used for each of their results.

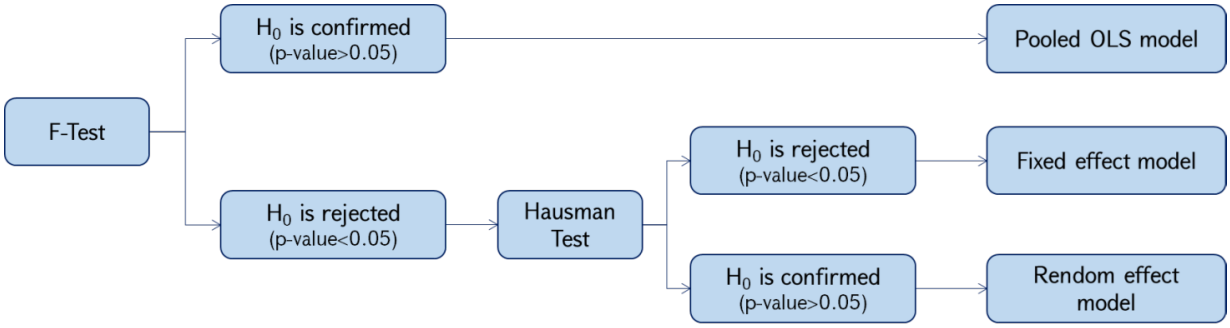

Fig. 1 Map to select the appropriate panel regression method[4]

Accordingly, before discussing the model results, we performed the F-test and the Hausman test for each model to understand the corresponding method.

In addition to the above tests, a time fixed-effect test and a random effect test was performed using the Breusch-Pagan LM test.

Research results

The results of tests of the models are presented in Table 4.

Table 4

Selection of the appropriate method[5]

Model	F-test	Time fixed-effect test	B-P LM test	Hausman test	Conclusion
Model 1	0.02746	0.09819	0.04201	0.00013	Fixed effect method
Model 2	0.02889	0.09817	0.45600	0.04200	Rendom effect method
Model 3	0.6345-0	0.3645-1	0.0002-0.9985	0.7549-0.9927	Pooled OLS

The tests performed show that in the case of Model 1 it is expedient to use the fixed effect method while in the case of the Model 2 a more accurate result can be obtained by the random effect method. In the case of Model 3 (set of models), no time-economy effect was observed (p-value is less than the significance level according to the Time fixed-effect test), that is why the Pooled OLS model was used. The results of the models based on this methodology are summarized in the Table 5 and Table 6.

Model 1 and Model 2 are above the level of significance (P-value is less than 0.05). Both models explain innovative entrepreneurship (R^2 = 0.51, R^2 = 0.54). In addition, the resulting model can be considered as significant, as the unique researches conducted through the panel model in the field of innovative entrepreneurship had very low significance [9]. In other words, unlike ordinary entrepreneurship, innovative entrepreneurship is much multifactorial and the result of our research is applicable and relevant.

In the case of Model 3, almost all variables are at the significance level.

[4] The figure was developed by the author based on the study of literature
[5] The table was developed by the author based of performed econometric tests

Table 5

Results of panel regression models (Model 1 and Model 2) [6]

	Model 1	Model 2
Intercept[1]		19.068358***
		(0.0009884)
GOV_EF	-0.234509*	-0.230956*
	(0.030778)	(0.0321137)
REGUL	0.219759**	0.218104**
	(0.006752)	(0.0079204)
GEM_NES	0.132367**	0.126865**
	(0.006527)	(0.0096753)
PROP_RIGHT	0.132979.	0.121464.
	(0.060586)	(0.0657388)
GOV_SP	0.157896**	0.093779.
	(0.001181)	(0.0915712)
CREDIT	-0.163121***	-0.111438***
	(0.000007951)	(0.0009089)
GROWTH	0.12038.	0.125495.
	(0.096414)	(0.0695356)
TRPOIC	-0.112065***	-0.116816***
	(0.00008805)	(0.00006763)
DEVEOLPED		-1.921024
		(0.5799276)
F-test	0.02746	0.02889
DF	127	125
Time fixed effects	YES	YES
B-P LM test	0.04201	0.45600
Hausman test	0.00013	0.04200
R^2	0.51228	0.53875
P-value	< 2.22e-16	< 2.22e-16

Standard errors in parenthesis

Statistical significance: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

1. Panel fixed effects model does report an intercept (constant)

Source: author

Table 6

Results of panel regression models (Model 3)

	R^2	P-value	Estimate
VOICE	0.1361	0.0000	0.8800
POL_ST	0.1259	0.0000	0.8748
GOV_EF	0.1736	0.0000	0.7580
REGUL	0.1700	0.0000	0.8837
CORR	0.0245	0.0000	1.0597
LAW	0.1962	0.0000	1.0119
GEM_NES	0.2771	0.0000	1.2306
RESOLV	0.0186	0.0460	0.2943
PROP_RIGHT	0.2134	0.0000	1.0076
GOV_SP	0.0031	0.4798	-0.1228
CREDIT	0.0065	0.1541	-0.2401

Source: author

[6] The table was developed by the author based of performed econometric analysis. Each variable's significance level in the model was checked, and some variables were removed as a result

Conclusion

In conclusion, the panel regression models confirm Hypothesis 1, which demonstrates that institutions have an impact on innovative entrepreneurship. In addition, the intensity of this impact varies from institution to institution.

More specifically, the institutions that have the most positive impact on innovative entrepreneurship are: the quality of regulation (0.2198) property rights (0.1330). The empirical research shows that access to credit (-0.1631) is one of the institutions negatively affecting the level of innovation.

It is also important to note that being close to the equator has a negative impact on innovation, which is a problem talked about by other authors, and in fact proven by an analysis of the level of innovative entrepreneurship.

Hypothesis 2 (the impact of institutions on innovative entrepreneurship in developed economies differs from the impact in developing countries) is also confirmed: institutions have different impacts on innovative entrepreneurship in developed and developing countries. This should be considered when applying research findings from developed countries to other countries.

Model 3 shows that there is bidirectional causality between innovative entrepreneurship and institutions, and the impact of innovative institutions on institutions is weaker than the opposite effect.

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ՆՈՐԱՐԱՐԱԿԱՆ ՁԵՌՆԱՐԿՈՒԹՅԱՆ ՎՐԱ ԻՆՍՏԻՏՈՒՏՆԵՐԻ ԱԶԴԵՑՈՒԹՅԱՆ ԳՆԱՀԱՏՈՒՄ. ՊԱՆԵԼԱՅԻՆ ՏՎՅԱԼՆԵՐԻ ՎԵՐԼՈՒԾՈՒԹՅՈՒՆ

Թարփոշյան Հ.Վ.
Հայաստանի Հանրապետության պետական կառավարման ակադեմիա

Նորարարությունը տնտեսության առաջընթացի շարժիչ ուժն է, որը հաճախ մշակվում և իրագործվում է ձեռնարկությունների առանձին խմբի՝ նորարարական ձեռնարկությունների կողմից:

Այս հոդվածը ուսումնասիրում է ինստիտուտների ազդեցությունը նորարարական ձեռնարկատիրական գործունեության վրա 27 երկրների վերաբերյալ տվյալների հիման վրա պանելային ռեգրեսիոն մոդելներով: Օգտագործելով 2013-2018 թվականների ընթացքում Գլոբալ ձեռնարկատիրության մոնիտորինգի (GEM) կողմից հավաքագրված տվյալները՝ մենք գնահատել ենք ինչպես ֆորմալ, այնպես էլ ոչ ֆորմալ ինստիտուտների ազդեցությունը նորարարական ձեռնարկատիրության մակարդակի վրա:

Հոդվածի շրջանակներում իրականացված քանակական վերլուծությունը ցույց է տալիս, որ ինստիտուտները նորարարական ձեռնարկատիրության համար չափազանց կարևոր գործոն են, և որ նորարարական ձեռնարկատիրության վրա առավել մեծ ազդեցությունն ունի կարգավորման որակը և սեփականության իրավունքը: Ավելին, զարգացած տնտեսություններում ինստիտուտների ազդեցությունը նորարարական ձեռնարկատիրության վրա տարբերվում է զարգացող երկրներում դրանց ազդեցությունից:

Բացի այդ, վերլուծությունը ցույց է տալիս, որ կա թույլ հակադարձ կապ նորարարական ձեռնարկատիրության և ինստիտուտների միջև:

Բանալի բառեր. նորարարություն, ձեռնարկատիրություն, ինստիտուցիոնալ տնտեսագիտություն, պանելային տվյալներ, GEM վիճակագրություն:

ОЦЕНКА ВЛИЯНИЯ ИНСТИТУТОВ НА ИННОВАЦИОННОЕ ПРЕДПРИНИМАТЕЛЬСТВО. АНАЛИЗ ПАНЕЛЬНЫХ ДАННЫХ

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Инновации являются движущей силой экономического прогресса, который часто разрабатывается и внедряется в основном отдельной группой предприятий, инновационными предприятиями. Хотя это довольно новая научная область, инновационное предпринимательство имеет решающее значение для решения экономических, социальных и экологических проблем.

В данной статье исследуется влияние институтов на инновационную предпринимательскую деятельность в 27 странах мира с моделями панельной

регрессии. Используя данные Global Entrepreneurship Monitor (GEM), мы оцениваем влияние как формальных, так и неформальных институтов на уровень инновационного предпринимательства в период с 2013 по 2018 год.

Наши выводы показывают, что институты являются важнейшим фактором инновационного предпринимательства и что наиболее положительное влияние на инновационное предпринимательство оказывают качество регулирования и права собственности. Влияние институтов на инновационное предпринимательство в развитых странах отличается от воздействия в развивающихся странах.

Кроме того, мы обнаружили слабую двунаправленную причинно-следственную связь между инновационным предпринимательством и институтами.

Ключевые слова: инновации, предпринимательство, институциональная экономика, панельные данные, статистика GEM.

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