

Evaluation of indicators of entrepreneurial potential in 2018

Оценка показателей предпринимательского потенциала в 2018 году

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Abstract

Entrepreneurial potential of the population is largely determined by how adults evaluate their intentions in terms of creating their own business. The purpose of the study was to assess the existing indicators in 2018 that characterize the potential entrepreneurial activity of the population in different countries. The self-assessment of people on such factors as their ability and ability to create their own businesses, entrepreneurial purposes, fear of failure in this activity, as well as the presence of familiar entrepreneurs were considered as the estimated indicators. The study used information from the Global entrepreneurship monitor for 2018 for 48 countries. Three hypotheses were tested using mathematical models representing the density functions of the normal distribution. Five indicators of entrepreneurial potential were used to determine their average values for the countries under consideration. Countries with high and low values of indicators were identified. A comparative analysis of the entrepreneurial potential in Russia and foreign countries is carried out.

Keywords: entrepreneurship, opportunities, abilities, intentions, Global monitoring, countries.

Аннотация

Предпринимательский потенциал населения во многом определяется тем, как взрослые люди оценивают свои интенции в части создания собственного бизнеса. Целью исследования являлась оценка сложившихся в 2018 году показателей, характеризующих потенциальную предпринимательскую активность населения в различных странах. В качестве оцениваемых показателей были рассмотрены самооценки людей по таким факторам, как наличие у них возможностей и способностей к созданию собственных бизнесов, предпринимательских намерений, боязни неудачи в этой деятельности, а также наличия знакомых предпринимателей. В исследовании использовалась информация Глобального мониторинга предпринимательства за 2018 год по 48 странам. Тестировались три гипотезы с использованием математических моделей, представляющих собой функции плотности нормального распределения. По пяти показателям, характеризующим предпринимательский потенциал, были определены их средние значения по рассматриваемым странам. Выявлены страны с высокими и низкими значениями показателей. Проведен сравнительный анализ предпринимательского потенциала в России и зарубежных странах.

Ключевые слова: предпринимательство, возможности, способности, интенции, Глобальный мониторинг, страны.

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Introduction

Development entrepreneurship in modern conditions is aimed at solving various socio-economic problems, such as increasing competitiveness, economic growth, reducing unemployment, efficient use of resources, developing new markets, and improving the welfare of the population (Decker et al., 2014; Pinkovetskaia et al., 2019a; Pinkovetskaia et al., 2020).

The analysis of the potential for entrepreneurship development in different countries is based on the identification of individual perception of the available opportunities for entrepreneurial activity and the availability of people's abilities for this type of activity. Opportunities for people to create their own businesses are associated with the presence in a particular country of legislative, organizational, institutional and other prerequisites that facilitate this process (Eckhardt & Shane, 2003). In addition, as indicated in the research, a potential entrepreneur should have an understanding of their individual characteristics, as well as in which area of production of goods or services there are free niches for their activities (De Massis et al., 2018).

Entrepreneurial opportunities are closely intertwined with the abilities of potential entrepreneurs, their intuition, and information obtained from previous experience (Gorgievski & Stephan, 2016). Entrepreneurial opportunities take many forms, including saturation of existing markets, new technologies, and economic and information asymmetries. They are usually specific to different countries. The article is devoted to the study of entrepreneurial opportunities in Taiwan (Wang et al., 2013). In (Medvedeva & Kutsova, 2017) the results of a survey of people's business opportunities are presented on the example of Moscow. It is shown that the development of entrepreneurship is hindered due to high taxes, corruption, and administrative barriers.

In the study (Kibalchenko & Eksakusto, 2015), it was concluded that the entrepreneurial potential is directly proportional to the availability of abilities for this activity, as well as the corresponding intentions, due to internal motivation to conduct business independently. The article (Alexandrova & Verkhovskaya, 2015) examines the positive impact on people's entrepreneurial activity of having an acquaintance with existing entrepreneurs, as well as the negative impact on it of fear of unsuccessful activities.

The article (Chokaeva, 2015) presents the evolution of views on entrepreneurial abilities. In (Ilyin & Terebova, 2013), the results of the analysis of entrepreneurial abilities in accordance with the concept of qualitative characteristics of the population are presented. The article (Korsun, 2016) draws attention to the need to develop the entrepreneurial abilities of the population based on the use of scientific, managerial and technical knowledge.

In General, the analysis of previous studies suggested that the availability of opportunities and abilities for entrepreneurship, familiarity with entrepreneurs, as well as the appearance of entrepreneurial intentions in people have a directly proportional impact on the emergence of new entrepreneurs. In turn, the fear of failure in business constrains the entrepreneurial potential of people.

The analysis of previous studies has shown the relevance of the problem of people's self-assessment of their potential entrepreneurial activity. However, a comprehensive assessment of the relevant indicators has not yet been carried out. The aim of the study was to assess the indicators that have developed in 2018 that characterize the potential business activity of the population in different countries. The self-assessments of people based on such factors as their ability and ability to create their own businesses, entrepreneurial intentions, fear of failure in this activity, as well as the presence of familiar entrepreneurs were considered as the estimated indicators.

Methodology and design

Socioeconomic research conducted in accordance with the Global entrepreneurship monitor project is of great importance in the study of modern entrepreneurship in different countries. These surveys include a large number of indicators that describe the activities of people who are the creators of their business. The indicators that were collected during the monitoring process included data directly related to the assessment of the potential for new entrepreneurs. We are talking about people's self-assessment of entrepreneurial opportunities and their abilities, people's fear of failure in business activities, personal acquaintance with existing entrepreneurs, as well as the presence of intentions to start a business.

Our study used information from the corresponding project for 2018 (Global Entrepreneurship Monitor, 2019). This project presents data for 48 countries, which is almost a quarter of the total number of independent countries. These countries are distributed by region as follows: Europe - 20 countries, Latin America-9 countries, Asia and Oceania-12 countries, Africa-5 countries, North America-2 countries. They belong to one of the three main income groups: 30 countries have high incomes, 11 countries had average incomes in 2018, and 7 countries had low incomes. For each country, at least 2000 randomly selected adults (between age of 18 and 64 years) were interviewed during the survey.

Our study evaluates the values of the following five relative indicators that have developed in 2018:

- the first indicator is the perceived opportunities for starting a business. It describes the percentage of adults who see good prospects for starting a business in their country;
- the second indicator is self-assessment of entrepreneurial abilities (assessment of a person's ability to create their own business). This indicator describes the percentage of adults in the country who, in their own opinion, believe that they have enough necessary skills and knowledge to start a business;
- the third indicator is the fear of showing entrepreneurial activity. It describes the proportion of adults who view their business opportunities positively, but do not want to pursue them because they are afraid of failing along the way;
- the fourth indicator is the relationship with the business community. The indicator describes the percentage of adults in the country who are personally familiar with at least one person who started a business in the last two years;
- the fifth indicator-characterizes the presence of the population of the country's intentions to start their own business. It describes the percentage of adults who are not entrepreneurs who expect to join this activity in the next three years.

Three hypotheses were tested during the study:

- hypothesis 1 - that there are currently significant differences in the values of

each of the above five indicators in different countries;

- hypothesis 2 - the values of each of the five indicators do not depend on the level of economic development of countries;
- hypothesis 3 - the values of each of the five indicators are not determined by the geographical location of the countries.

These hypotheses were based on the modeling of empirical data using the density function of the normal distribution. The development of these functions, as shown by the author's previous work, allows us to obtain unbiased characteristics of the studied economic processes. The methodology for using normal distribution density functions to estimate specific indicators is given in the articles (Pinkovetskaya, 2015; Pinkovetskaia et al., 2019b).

At the final stage of the study, a comparative analysis of the values of the above five indicators of entrepreneurial potential for Russia and foreign countries was carried out.

Results

This article presents the models developed by the authors. The development of these models was based on information collected during the population survey of various countries under the global entrepreneurship monitoring project for 2018. As models, we developed dependencies that characterize the normal distribution of the five studied indicators across the 48 countries under consideration. Such functions (Y_1) describing the distribution each of the indicators ($X, \%$) are given below:

- according to perceived opportunities

$$y_1(x_1) = \frac{510.10}{15.93 \times \sqrt{2\pi}} \cdot e^{\frac{-(x_1 - 44.85)^2}{2 \times 15.93 \times 15.93}} \quad ; \quad (1)$$

- according to the entrepreneurial abilities

$$y_2(x_2) = \frac{582.86}{13.25 \times \sqrt{2\pi}} \cdot e^{\frac{-(x_2 - 48.48)^2}{2 \times 13.25 \times 13.25}} \quad ; \quad (2)$$

- for fear of failure

$$y_3(x_3) = \frac{377.14}{9.44 \times \sqrt{2\pi}} \cdot e^{-\frac{(x_3-35.65)^2}{2 \times 9.44 \times 9.44}} \quad ; \quad (3)$$

- meeting an entrepreneur

$$y_4(x_4) = \frac{514.29}{11.53 \times \sqrt{2\pi}} \cdot e^{-\frac{(x_4-36.07)^2}{2 \times 11.53 \times 11.53}} \quad ; \quad (4)$$

- by the presence of entrepreneurial intentions

$$y_5(x_5) = \frac{640.26}{15.11 \times \sqrt{2\pi}} \cdot e^{-\frac{(x_5-22.29)^2}{2 \times 15.11 \times 15.11}} \quad . \quad (5)$$

Three tests were used to check the quality of the developed models. The corresponding calculations showed that the calculated values of statistics for the Kolmogorov-Smirnov test are located in the range from 0.035 to 0.099. These values are smaller than the table value of 0.152 (significance level 0.05). The calculated values for the Pearson test range from 0.54 to 2.23, which is significantly less than the table value (9.49). The calculated values of statistics for the Shapiro-Wilk test exceed the table value of 0.93 (with a significance level of 0.01). Econometric analysis of these three tests showed high quality of each of the functions (1)-(5).

Discussion

Using the density functions of the normal distribution (1)-(5), estimates were obtained showing the values of indicators that characterize the entrepreneurial capabilities, abilities and intentions of the adult population in different countries achieved in 2018 (table 1). The average values are shown in column 2, and column 3 of this table shows the range of changes in the values of indicators for most (68%) countries.

Table 1. Values of indicators that characterize the potential of business activity in 2018, %

Indicators	The average value	Values, typical for most countries
1	2	3
perceived opportunities	44.85	28.92-60.78
having the ability	48.48	35.23-61.73
fear of failure	35.65	26.21-45.09
getting to know the entrepreneur	36.07	24.54-47.60
presence of entrepreneurial intentions	22.29	7.18-37.40

Note: Developed by the authors

The national average of the percentage of adults who perceive the possibility of starting a business was 44.85% in 2018. That is, almost half of the people surveyed in 48 countries saw real opportunities for their participation in entrepreneurship. The level of this indicator higher than the upper limit of the interval (61%) shown in column 3 of the table was observed in countries such as Canada, United Arab Emirates (UAE), the Netherlands, Poland, the United States, Saudi Arabia, Angola and Sweden. That is, in these countries, almost two-thirds of the population positively perceive the possibility of entrepreneurial activity. Values of this indicator smaller than the lower limit of the interval

occurred in Japan, Greece, Bulgaria, Iran, Russia, and Taiwan. Therefore, in these countries, the possibility of creating your own business is estimated by adults rather pessimistic.

The average percentage of people in the countries under review who have the ability to start a business according to their self-assessment was 48.48%. Therefore, about half of the people in 48 countries reported in the survey that they have enough competencies to create their own business. The level of this indicator higher than the upper limit of the interval (62%), shown in column 3 of the table, occurred in 2018 in countries such as Indonesia, Guatemala,

Colombia, Chile, Peru, Sudan, Angola, and Saudi Arabia. Low values of the indicator (from 10% to 30%) were observed in Italy, Morocco, Taiwan, Russia, China and Japan. This large differentiation in the values of this indicator may be due to different requirements for the knowledge and personal qualities of entrepreneurs in different countries.

The average fear of failure in entrepreneurship in 48 countries reached 35.65%. Consequently, almost a third of adults in the process of sociological survey considered a real negative result of business activity. The highest values of the indicator (from 47% to 64%) were observed in countries such as Luxembourg, Israel, Cyprus, India, Italy, Greece, Thailand, and Morocco. In these countries, between half and two-thirds of the population surveyed are afraid to start a business due to the risk of failure. Low values of this indicator were observed in UAE, Colombia, Lebanon, Puerto Rico, Panama and Angola, where potential entrepreneurs are more optimistic and only about a quarter of them are afraid of failure.

The average percentage of adults who had well-known entrepreneurs was 36.07% in 2018. More than half of the respondents had business acquaintances in Saudi Arabia, Peru, Madagascar, Israel, Panama, Sudan, UAE, Angola and Indonesia. Values lower than the lower limit of the interval (24%) were in Germany, Greece, Japan, Puerto Rico and Egypt. The national average for the percentage of adults who had entrepreneurial intentions in 2018 was 22.29%. That is, almost a quarter of respondents planned to create their own business in the coming years. The greatest intentions in this direction were observed in countries such as Peru, Morocco, Chile, Colombia, Egypt, Angola and Sudan. In these countries, business intentions accounted for more than 39%. Values of this indicator smaller than the lower limit of the interval (from 2% to 7%) occurred in Japan, Bulgaria, Russia, Germany, Spain and Switzerland.

The data shown in column 3 of table 1 showed significant differences in the values of each of the five indicators by country. Thus, we can conclude that the previously proposed hypothesis 1 has been confirmed. An analysis of the lists of countries with high and low values for each of

the five indicators led to the conclusion that hypotheses 2 and 3 were also confirmed.

A comparative analysis of indicators of the entrepreneurial potential of people in different countries, taking into account the mutual relations between the considered indicators, is of particular interest. So, in a number of countries, people see opportunities around them to start a business, but few of them take real steps in this direction. We are talking about India, Sweden, Poland, Saudi Arabia and UAE. In Sweden and Poland, this gap may be due to the fact that people see opportunities but do not believe they have enough capacity to implement them. In India and Saudi Arabia, the perception of potential is slightly higher than the perception of opportunity, which suggests that people see opportunities and believe they are able to pursue them, but relatively few actually take steps to start a business. In Asia, there is a balance between perceptions of opportunity and entrepreneurial ability. In most Latin American countries, the adults surveyed believe that they can start a business, despite the fact that there are not always opportunities to do so.

In some Asian countries, such as India and Thailand, among people who say there are good opportunities for entrepreneurship, more than half can't start a business for fear of failing in it. In Europe and North America, there is a curious paradox - despite the high value of the fear of failure, many people start their own business. Latin American countries have a low level of fear of business failure. In each of the region's economies, less than a third of those who see opportunities but say that fear of failure will prevent them from starting a business.

Such an indicator as the presence of a good friend among entrepreneurs has a significant differentiation even in two relatively close countries: Saudi Arabia (79%) and Egypt (12%). This indicator has diametrically opposite values in Asian countries such as Japan (19%) and Indonesia (72%).

Let's focus on the values of the five considered indicators obtained in the process of monitoring entrepreneurship in Russia in 2018 (table 2). For comparative analysis, column 3 of the same table for each of the indicators shows the ratio of values for Russia and the average values for foreign countries.

Table 2. Assessment of indicators of entrepreneurial potential in Russia in 2018

Indicators	Russia, %	Relations between the values for Russia and the average for all countries
1	2	3
perceived opportunities	22.8	0.50
having the ability	27.5	0.57
fear of failure	46.4	1.30
getting to know the entrepreneur	35.7	0.99
presence of entrepreneurial intentions	2.2	0.09

Note: Developed by the authors on the basis of official statistics

The data shown in table 2 show relatively low values of perceived capabilities and abilities of Russian citizens. The corresponding values are almost twice as low as the average for all countries. At the same time, the fear of failure in our country is significantly higher than the average country value. Only the indicator of acquaintance with the entrepreneur is at the average level. The worst situation is when people have entrepreneurial intentions. In Russia, this indicator is less than 0.1 of the corresponding average for all countries. This situation is largely due to the fact that, as indicated in the article (Medvedeva & Kutsova, 2017), most people in our country have no idea about the meaning of business and its role in modern society.

Conclusion

The study achieved its goal. All tasks were solved. Its results have a significant novelty and originality:

- the average values and intervals of change for most countries in the values of such indicators of people's self-esteem as perceived opportunities, the presence of abilities and intentions, fear of failure in business, as well as familiarity with the entrepreneur;
- it is proved that the highest average values for countries are typical for such indicators as the presence of entrepreneurial abilities and perceived opportunities, and the lowest average value is for the indicator of the presence of entrepreneurial intentions;
- it is shown that each of the five indicators of entrepreneurial potential is significantly differentiated by the 48 countries considered;

- the absence of links between the values each indicators of entrepreneurial potential and such factors as the level of income of the population in specific countries and their territorial location is confirmed.

Analysis of the business potential in Russia has shown the need to solve three main tasks at the federal, regional and municipal levels of government:

- increasing the level of entrepreneurial opportunities perceived by people by improving the legal framework for entrepreneurship, reducing administrative barriers in all types of economic activity, and improving the public's understanding of the positive role of entrepreneurs in the economy and society;
- development of entrepreneurial abilities of the population on the basis of training in relevant competencies and knowledge in higher and secondary special educational institutions, as well as schools. Training of people interested in business in special courses, preferably free of charge, on legal, financial, tax, personnel and other issues. Creation of network structures for the exchange of entrepreneurial experience, including youth, women's and social entrepreneurship;
- stimulating people's entrepreneurial intentions by significantly improving measures to support small and medium businesses, including loan guarantees, grants, information and consulting assistance, and the creation of business incubators and technology parks.

References

- Alexandrova E.A. & Verkhovskaya O.R. (2015). Entrepreneurial intentions in Russia: empirical analysis. *Russian journal of management*, 13(2), 3-28.
- Chokaeva N.O. (2015). Theoretical explanation of the motives of entrepreneurial activity. *Society and law*, 1(51), 326-330.
- Decker R., Haltiwanger J., Jarmin R. & Miranda J. (2014). The Role of Entrepreneurship in US Job Creation and Economic Dynamism. *Journal of Economic Perspectives*, 28(3), 3-24.
- De Massis A., Kotlar J., Wright M. & Kellermanns F.W. (2018). Sector-Based Entrepreneurial Capabilities and the Promise of Sector Studies in the Entrepreneurship. *Entrepreneurship Theory and Practice*, 42(1), 3-23.
- Eckhardt J. & Shane, S.A. (2003). Opportunities and entrepreneurship. *Journal of Management*, 29(3), 333-349.
- Global Entrepreneurship Monitor 2018-2019. (2019). *Global Entrepreneurship Research Association (GERA)*.
- Gorgievski M.J. & Stephan U. (2016). Advancing the psychology of entrepreneurship: A review of the psychological literature and an introduction. *Applied Psychology*, 65(3), 437-468.
- Ilyin V.A. & Terebova S.V. (2013). Entrepreneurial abilities of the population of the region: approaches to assessment and directions of development. *Bulletin of the Russian humanitarian scientific foundation*, 4(73), 79-89.
- Kibalchenko I.A. & Eksakusto T.V. (2015). Structural features of entrepreneurial skills. *Fundamental research*, 2(9), 1999-2004.
- Korsun T.A. (2016). Entrepreneurship as a sphere of realization of abilities of owners in modern conditions, *Bulletin of VSGUTU*, 6(63), 125-131.
- Medvedeva N.V. & Kutsova K.O. (2017). Research of entrepreneurial activity of citizens in the Russian Federation: limitations and potential opportunities. *World of Economics and management*, 17(3), 112-120.
- Pinkovetskaya I. (2015). Modeling indicators of small and medium-sized businesses in the regions using the density function of the normal distribution. *Problems of territorial development*. 6(80). 93-107.
- Pinkovetskaia, I., Arbeláez Campillo, D.F., Rojas-Bahamón, M.J., Gromova, T., Nikitina, I. (2019a). Female entrepreneurship development in the Russian Federation. *Amazonia Investiga*. 8(18). 111-118.
- Pinkovetskaia, I., Lyubovtseva, E., Arbeláez-Campillo, D., & Rojas-Bahamón, M. (2020). Small and medium enterprises in Russia and other countries. *Amazonia Investiga*. 9(25). 99-106.
- Pinkovetskaia, I., Nuretdinova, Y., Treskova, T., & Neif, N. (2019b). Estimation of fixed capital investment in Russian small enterprises and microenterprises in 2018. *Amazonia Investiga*, 8(21), 42-51.
- Wang Y., Ellinger A. & Wu Y.J. (2013). Entrepreneurial opportunity recognition: an empirical study of R&D personnel. *Management Decision*, 51(2), 248-266.