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CONTRIBUTION OF EDUCATION TO THE SOCIO-ECONOMIC DEVELOPMENT OF THE SUBJECTS OF THE RUSSIAN FEDERATION

One of the key functions of the education system is the training of specialists for economics and social sphere. Education affects not only the individual's potential ability to increase their future income, but it can also be seen as the source of the socio-economic development of the region. The rise of future income of an employee graduating from the education system can be accounted for their potential contribution to common welfare. This paper contains the results gained from the assessment of the contribution of education to the socio-economic development of subjects of the Russian Federation. The assessment was conducted by the Center of Continuing Education Economics of the Institute of Applied Economic Research, the Russian Presidential Academy of National Economy and Public Administration in 2016. For conducting this assessment, the methodology of calculating the potential contribution of education to the socio-economic development of the subjects of the Russian Federation was prepared. The methodology proceeds on the basis that graduates of educational institutions potentially provide the economic growth and social sphere functioning after their introduction to the labor market. For the period of 2005–2016, the analysis of the contribution of education was conducted for the following system levels: general secondary education, initial vocational education, secondary vocational education, and higher education. For the sampling frame of ten subjects of the Russian Federation, the analysis of the contribution of higher education to the socio-economic development of Russian regions was conducted in the light of enlarged groups of training programs and specialties. According to the results of the research, the most substantial contribution to the socio-economic development of the subjects of the Russian Federation is made by the higher education system. The potential contribution of the general education to the socio-economic development of the subjects of the Russian Federation is primarily stipulated by the procurement of students for the next education levels, not their introduction to the labor market.

Keywords: education, secondary education, higher education, human capital, education outcomes, school-to-work transition, youth in employment, regional economy, socio-economic development, benefits of higher education

Introduction

One of the many functions of the education system is the training of specialists in economics and the social sphere. Education plays an important role in the establishment of human capital assets by fulfilling a function of educating and training the graduates of educational institutions, who, in their turn, contribute to the socio-economic development of the country. One may talk about the influence of education in terms of social benefits for both individuals and the society in general, but this paper will review only the economic benefits of getting an education.

As it is known, the investment in human capital assets procures the rise of future income of employees introduced to the labor market. For example, the research done by R. Blundell, L. Dearden, B. Sianesi shows that in Great Britain, the average bonus added to wages for getting higher education constitutes approximately 23.5 % [1]. According to the specified research, the additional earnings subjected to getting a higher level of education constitutes approximately 160 000 pounds for an individual throughout their lifetime [1]. The reliance between the rise of income and the educational level is also confirmed by the results of research conducted by L. Dearden, S. Harkness, S. Machin, A. Chevalier and Walker, S. McIntosh and G. Conlon and others [2–8].

The calculation of the rise of future incomes of employees can be the basis for the analysis of the contribution of education to the socio-economic development of the society and the growth of its welfare. This assessment has a potential character since the income level of employees is affected not only by their education but also by their gender, age and their labor experience [9–17]. Except that, a huge number of factors external towards the educational system affects the employee's introduction to the labor market — the structure of economy and the structure of the social sphere, the diversification of salary level of those employees who have similar training, the availability of opportunities for education migration and labor migration, etc. [18–25].

During the research by the Center of Continuing Education Economics of the Institute of Applied Economic Research, the Russian Presidential Academy of National Economy and Public Administration, the assessment of the contribution of education to the socio-economic development of the subjects of the Russian Federation was conducted in 2005–2016 for the following system levels: general secondary education, initial vocational education (since 2014 the programs of skilled workers training in secondary vocational education system are also reviewed), secondary vocational education and higher education. The analysis was conducted both for the Russian Federation as a whole and for the federal districts and regions of Russia.

During the research, the employee's ability to generate a certain income corresponding to their educational level was assessed. The minimum quantity of added value that an employee with a certain education level is able to generate is determined by the sum of their wages with allowance received by them during one year. The calculations are based on the official statistical data concerning the average gross payroll of employees[1] with a different education level. Moreover, the data concerning the number of graduates from institutions of relevant educational system level, the percentage of graduates continuing their education on the next level, the unemployment level among people with a relevant educational level and the number of graduates called up for military service were also used. Considering that a lot of data are missing from the official statistics and that the results of social studies do not fill in the existing gaps, only those factors were used to assess the contribution of education to the socio-economic development of Russian regions, the data on which can be found in the official statistical sources.

During the assessment of the contribution made by graduates of educational institutions of different level, as far as the actual statistical data allows, the number of graduates introduced to the labor market was corrected with regard to the information about those of graduates who were not introduced to the labor market after finishing their studies due to the variety of reasons, for example, to being called up for military service, to getting further education, to sickness, etc. Moreover, the data were corrected with regard to the official data on the unemployment level among the people of certain age and educational level. Therefore, the contribution of the graduates employed in the certain region to the socio-economic development of this region was calculated during the research.

It was also noted during the calculations that each employee generates the income exceeding the level of their wages at least by the value of set tax levy (payroll tax paid by the employees themselves and social insurance payments (that bore the title of unified social tax until 2010) paid by employers. In most cases, this income also exceeds the share of employer's profits, so the statistical data on the average gross payroll of employees with different levels of education was corrected with regard to the abovementioned fact.

The assessment of the potential contribution of education to the socio-economic development of a region was conducted according to the following models:

1) in absolute magnitude —

$$P^j(t) = \sum_i Z_{ij}(t)N_{ij}(t), \quad (1)$$

where: $P^j(t)$ is the assessment of the potential contribution of education to the socio-economic development of region j in a year t; $Z_{ij}(t)$ is an average wages with allowance and payroll tax (annualized) of a graduate of an educational institution of i-level in a region j in a year t (i = 1, 2, 3, 4 where 1 equals higher education, 2 equals training of mid-level specialists, 3 equals training of trained workers and employees and 4 equals general education); $N_{ij}(t)$ is the number of graduates of organizations of education level i in a region j in a year t (i = 1, 2, 3, 4 where 1 equals higher education, 2 equals training of mid-level specialists, 3 equals training of trained workers and employees and 4 equals general education).

2) in reference to the gross regional product —

$$p_j(t) = (P^j(t)/W^j(t))\ 100\ \%, \quad (2)$$

where $p_j(t)$ is the assessment of a potential contribution of education to the generation of the Gross Regional Product (*GRP*) of a region j in a year t as %; $W^j(t)$ is the *GRP* of a region j in year t.

[1] The calculations of the contribution of education were conducted at the interval of two years due to the fact that the data on the average wages is presented at such frequency.

The methodology of the assessment of the contribution of education is presented in greater detail in the report of T. Klyachko, S. Belyakov titled "The Methodology of the Assessment of the Contribution of Education to the Socio-Economic Development of the Russian Federation and its Subjects" [26].

The comparative assessment of the contribution of general secondary education, secondary vocational education and higher education

According to the results of the conducted analysis, the system of higher education has the highest rate of contribution to the socio-economic development of the Russian Federation compared to other researched levels of the educational system (see fig. 1). This being said, the contribution of higher education in Russia kept steadily growing in 2005–2016 as distinguished from the contribution of other educational system levels.

However, if the relation of the contribution of education to the GDP of the Russian Federation is being reviewed, then the dynamics of test items is essentially different, although higher education system keeps the dominant position (see fig. 2).

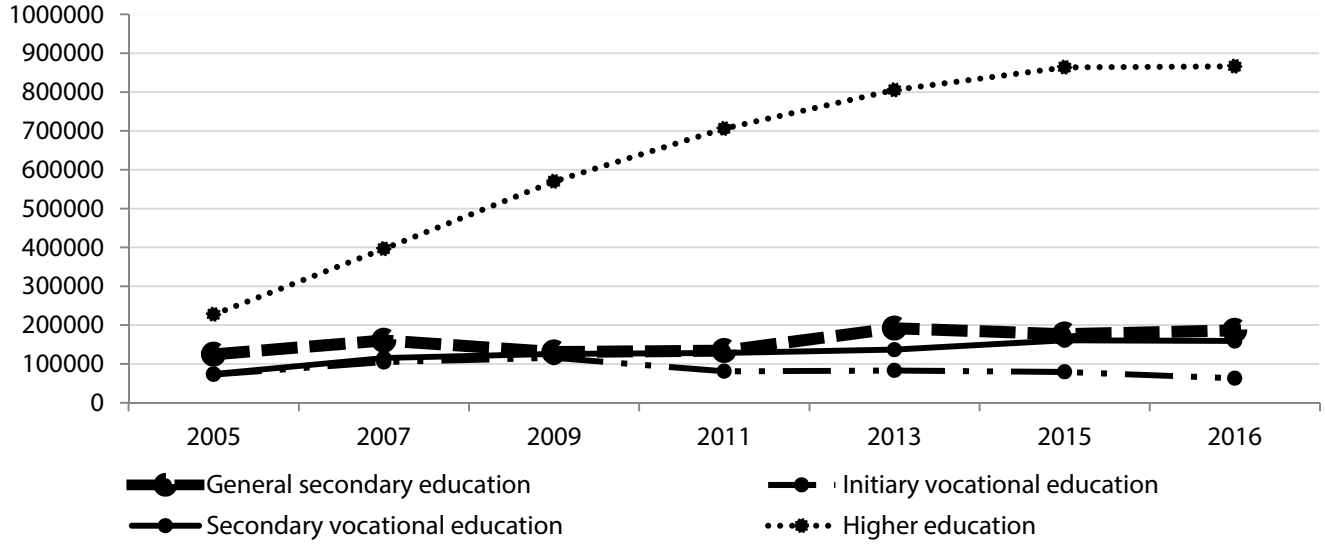

Fig. 1. *The contribution of general secondary education, initial and secondary vocational education and higher education to the socio-economic development of the Russian Federation (mln RUB) (Calculated according to the data from The Unified Interdepartmental Statistical Information System. (2016) Retrieved from: www.fedstat.ru (date of access: 14.06.2018). For 2016 the predicted rate value was calculated.)*

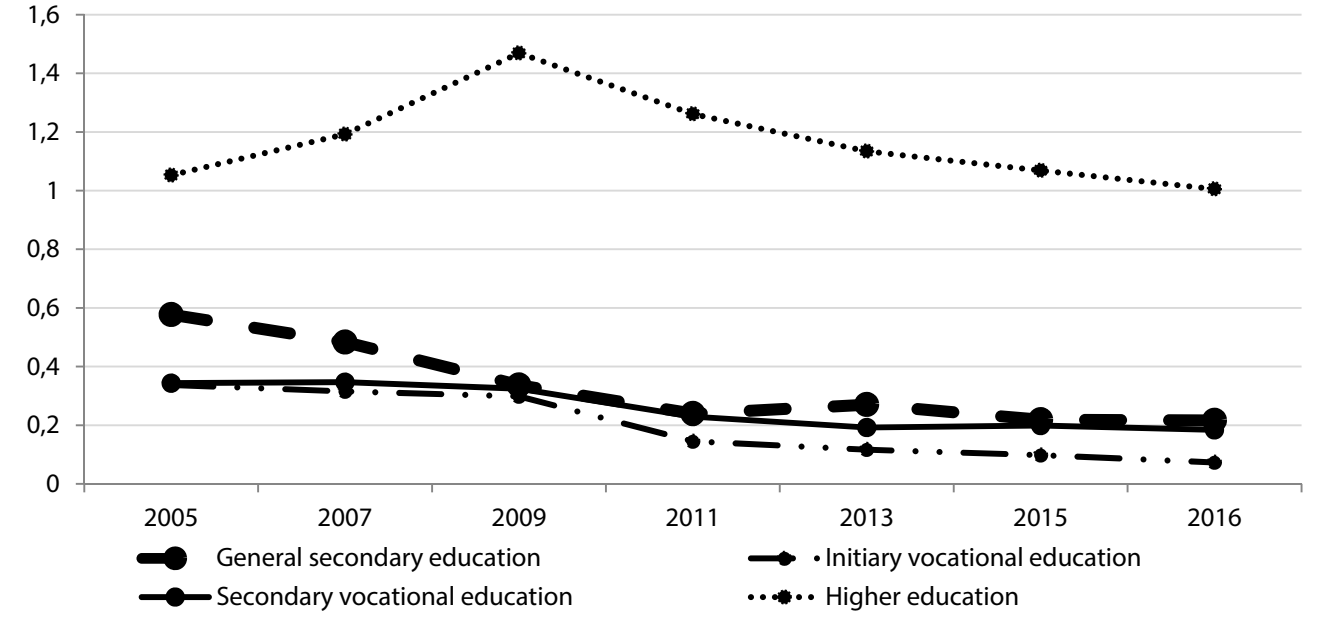

Fig. 2. *The contribution of general secondary education, initial and secondary vocational education and higher education to the GDP of the Russian Federation (%) (Calculated according to the data from the Unified Interdepartmental Statistical Information System. 2016 (www.fedstat.ru; Access date: 14.06.2018). For 2016 the predicted rate value was calculated.)*

Translation

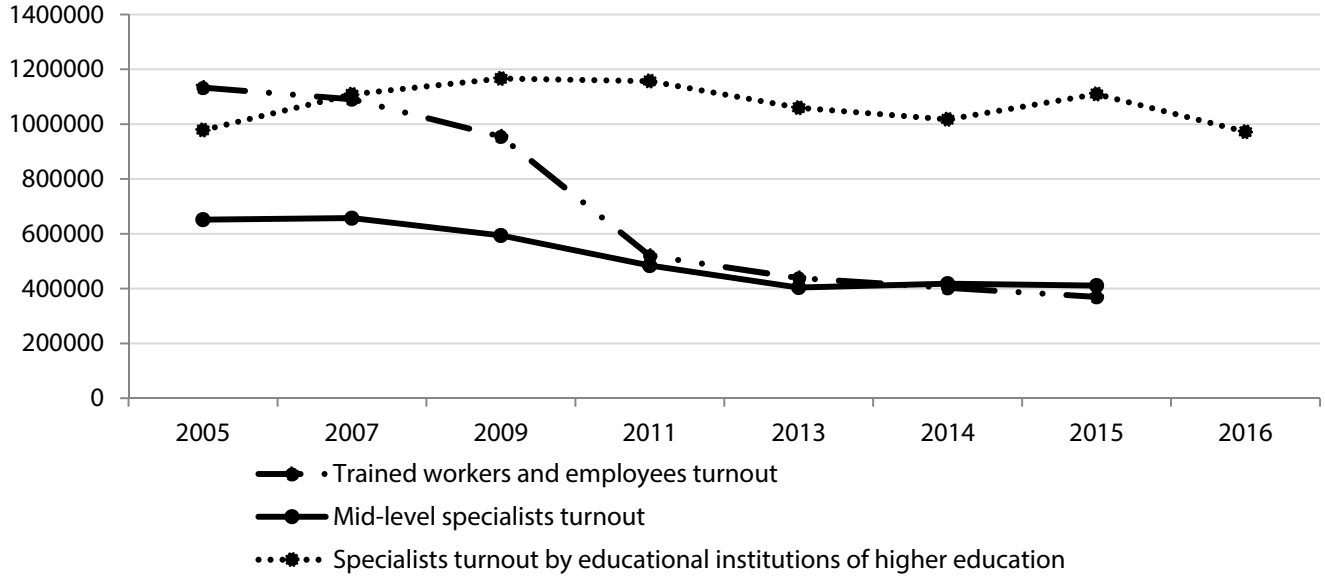

Fig. 3. *Specialists turnout by state and municipal educational institutions of higher education; trained workers and employees turnout; mid-level specialists turnout (person) (Calculated according to the data from the Unified Interdepartmental Statistical Information System. (2016)/ Retrieved from: www.fedstat.ru (date of access: 14.06.2018).)*

The contribution of higher education to the GDP was the most substantial in 2009 when it accounted for 1.47 % of GDP. After 2009, the decrease of higher education's contribution to GDP was noticed when it accounted for 1 % in 2016. The dynamic of such kind can be explained by the decrease in specialists' turnout after 2009 (fig. 3). The steady increase of the average gross payroll of persons with higher education in 2005–2016 allowed to compensate for the decrease in the number of graduates and in absolute terms, the contribution of higher education increased steadily. But, in relative terms, along with the continuous growth of the GDP value, this compensation was not enough and the contribution of education to GDP began to decrease after 2009.

The dynamic patterns of the contribution of general education, initial and secondary vocational education to GDP in 2005–2016 have similar traits. Each of the designated levels contributed most substantially in 2005 or in 2007, afterward, the rate of their contribution decreases in connection with the substantial decrease of the number of graduates from each of the reviewed educational levels.

The contribution rate of secondary vocational education to GDP was the highest in 2005 and 2007 when it accounted for 0.34 % of GDP. The most substantial contribution of initial vocational education to GDP was received in 2005 and it equaled 0.33 % of GDP. In the next years, the relation of this educational level's contribution to GDP was decreasing and reached 0.1 % in 2015 due to the decrease in the turnout of trained workers and employees by more than three times in 2005–2015. The contribution of general education was the most substantial in 2005 and it equaled 0.58 % of GDP. It was decreasing in the next years due to the decrease in numbers of students, who received the certificate of general secondary education. During the reviewed period this item decreased by almost two times.

The assessment of the contribution of education to the socio-economic development of the subjects of the Russian Federation

Determining the contribution of education in the GRP of the subjects of the Russian Federation allows not only to assess the annual dynamics of the item but also to conduct the comparative analysis of the received data in relation to the federal districts (fig. 4).

In terms of the contribution of general, initial and secondary vocational education to GRP, the leading positions belong to the Far Eastern Federal District and the Siberian Federal District[2]. The contribution of secondary vocational education to GRP in the Siberian Federal District goes from 0.93 % to 0.39 %, in the Far Eastern Federal District the contribution goes from 1.05 % to 0.36 % during the researched period. During the review of the contribution of initial vocational education to GRP, it

[2] The Crimea District led the way in the contribution of education to GRP practically in every education system level among the federal districts in 2015 due to the very low GRP rate. This rate is not just lower than in other federal districts, it is substantially lower than GRP rate in the most of Russian regions. Besides, the Crimea District became the part of the Southern Federal District since 2016. Therefore, the leading federal districts will be further studied without regard to the Crimea District.

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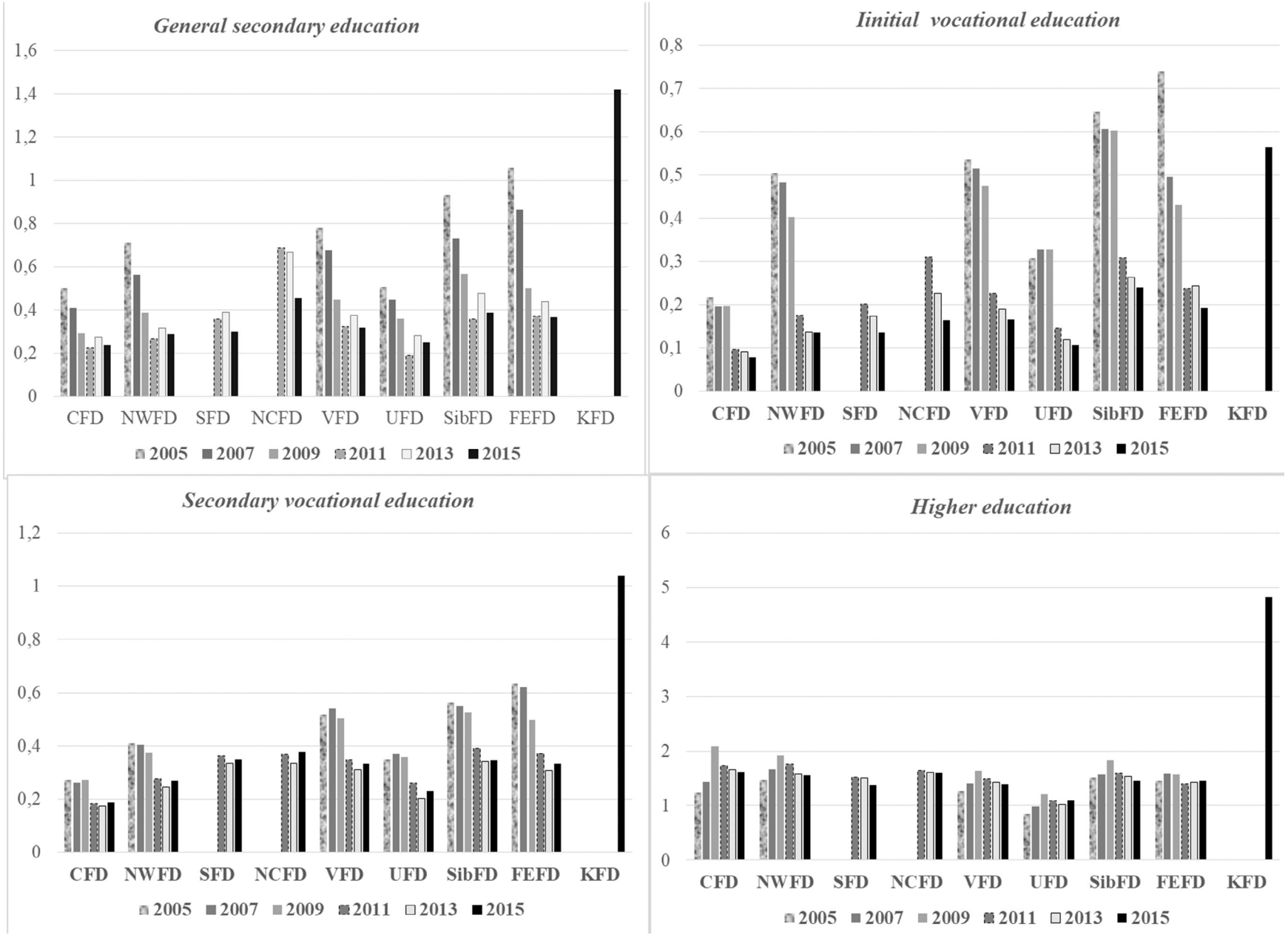

Fig. 4. *The contribution of general secondary education, initial and secondary vocational education and higher education to the GRP in the federal districts (%) (Calculated according to the data from the Unified Interdepartmental Statistical Information System. (2016). Retrieved from: www.fedstat.ru (date of access: 14.06.2018).)*

can be noted that the maximum values of this mark were received in 2005 in the period of 2005–2013 and they equaled 0.74 % of GRP in the Far Eastern Federal District and 0.64 % in the Siberian Federal District. In the following years, the gradual decline of this mark is evidenced.

From 2005 to 2013, the relation of the contribution of secondary vocational education to GRP in the Far Eastern Federal District went from 0.64 % to 0.33 %. In the Siberian Federal District, the contribution of secondary vocational education to GRP decreased from 0.57 % in 2005 to 0.35 % in 2015 due to the substantial decrease in mid-level specialists turnout.

During the review of the relation of the contribution of higher education to GRP in each federal district, it can be noted that the leading positions in 2005 and 2007 belonged to the Siberian Federal District (1.5 % of the GRP), the Northwestern Federal District (1.5 % and 1.7 % of GRP) and the Far Eastern Federal District (1.5 % and 1.6 % of the GRP). In 2009, the Central Federal District took the lead (2.1 %), followed by the Northwestern Federal District (1.9 %) and the Siberian Federal District (1.8 %). In 2011, the Northwestern Federal District took the lead again by a slender margin (1.8 %). In 2013 and in 2015, the Central Federal District took the first place again (1.7 % and 1.6 %) (fig. 4).

By determining which subjects of the Russian Federation have the lowest or the highest rates of the contribution of education to GRP, the several exemplary groups of Russian regions were allocated.

The first group can be represented by those subjects of the Russian Federation which are on the top of the list of the socio-economic status of Russian regions and have the high-volume production of goods and services. This, despite the high numbers of graduates of each educational level, does not allow the contribution of education to loom large in GRP (Moscow and Saint-Petersburg and the Khanty-Mansijsk Autonomous District for general secondary education system; and the Moscow region and the Tyumen region for higher education system).

The second group of regions can be represented by the regions with a low number of graduates of each reviewed educational level and, inevitably, with a low rate of the contribution of education to GRP (for example, Chukotka Autonomous District, Jewish Autonomous Region, Nenets Autonomous District and Magadan Region for secondary vocational education system; the Yamalo-Nenets Autonomous District, Leningrad Region, Sakhalin Region and Amur Region for higher education system).

The third group can be represented by the Russian regions with low GRP rates in the reviewed period and, thuswise, also with the high rate of the contribution of education to GRP (for example, the Republic of Tuva and the Republic of Altai for secondary vocational education system).

The fourth group can be represented by the regions with the very high number of graduates of a certain educational system level and the high rate of the contribution of education (for example, Moscow and Saint-Petersburg, and also Novosibirsk Region and Nizhniy Novgorod Region for higher education system).

Another group of the subjects of the Russian Federation with the high rate of the contribution of education to GRP can be notionally named as “medium”. They have medium GRP rates and medium numbers of graduates, and they are in the top ten by the relation of the contribution of education to GRP (for example, Penza Region, Kirov Region and Smolensk Region for secondary vocational education system).

The contribution of higher education in the light of enlarged groups of training programs and qualifications

More detailed research of the contribution of higher education in the light of enlarged groups of training programs and qualifications is now possible through the results of the monitoring of educational institutions of higher education efficiency conducted by the Ministry of Education and Science of the Russian Federation in 2015. Under the 2015 monitoring, the information concerning the outcomes of employment of educational institutions graduates in 2014 was assembled. In 2016, the monitoring was conducted one more time, but there were no comparable results presented. Thereby, the results presented below are relevant only to 2014.

For analysis, ten Russian regions were selected. They differ in socio-economic position, they compose different federal districts and have the high, medium or low rate of the contribution of higher education (fig. 5).

In absolute terms, the contribution of higher education in Moscow is approximately four times higher than in Saint-Petersburg. Among the remaining eight subjects of the Russian Federation, the

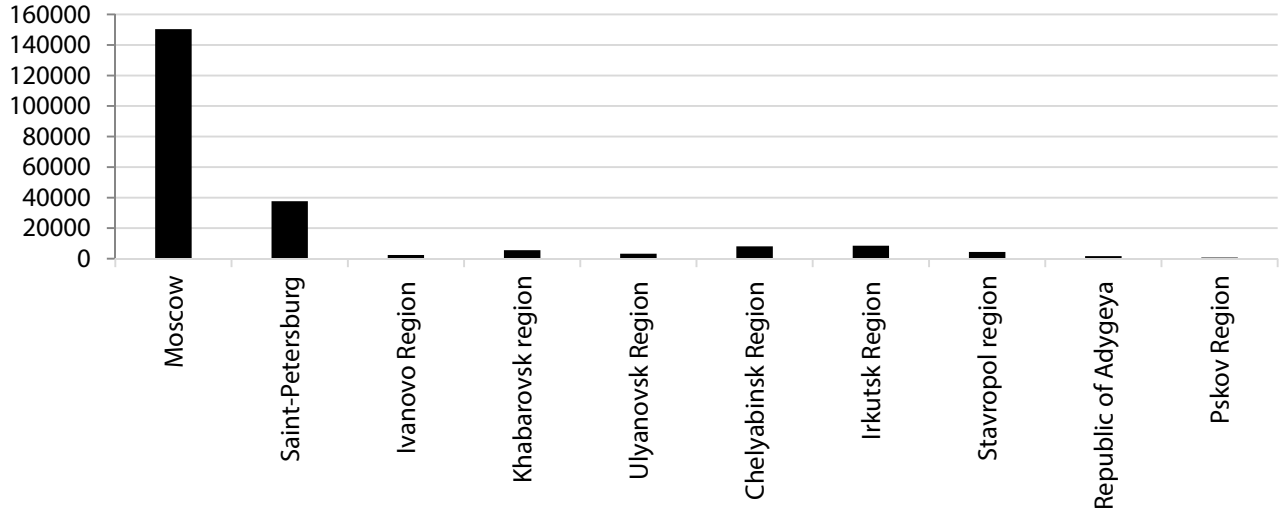

Fig. 5. *The contribution of higher education in 10 subjects of the Russian Federation (mln. RUB) (Calculated according to the information analysis content concerning the results of conducting the monitoring of operating efficiency of educational institutions of higher education (See The Ministry of Science and Education of the Russian Federation. (2016). Retrieved from: http://indicators.miccedu.ru/monitoring/2015/ (date of access: 01.05.2017).)*

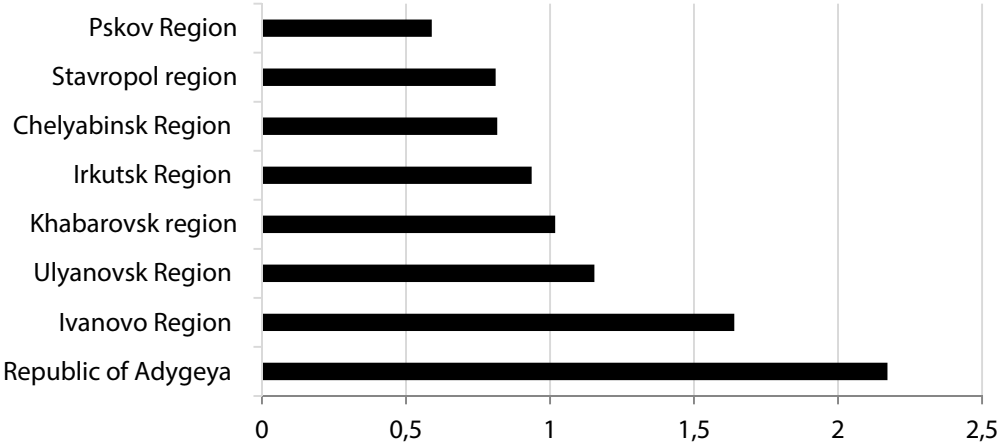

Fig. 6. *The contribution of higher education to GRP in 8 subjects of the Russian Federation (%) (Calculated according to the information analysis content concerning the results of conducting the monitoring of operating efficiency of educational institutions of higher education (See The Ministry of Science and Education of the Russian Federation. (2016). Retrieved from: http://indicators.miccedu.ru/monitoring/2015/ (date of access: 01.05.2017).)*

highest rate of the contribution of higher education is in Irkutsk Region and Chelyabinsk Region and the lowest rate of the contribution is in Pskov Region.

The contribution of higher education in Moscow and Saint-Petersburg is so much higher in absolute terms than in other studied Russian regions that it is meaningless to make comparisons. Therefore, the results of analysis of Moscow and Saint-Petersburg are presented separately.

In relative terms, Saint-Petersburg outperforms Moscow by the contribution of higher education to GRP in 2014 (1.4 % and 1.2 % respectively). Among other reviewed Russian regions, the Republic of Adygeya is in the lead by the rate of the contribution of higher education to GRP (the contribution of higher education to GRP equals 2.2 %), followed by Ivanovo Region (1.6 %) and Ulyanovsk Region (1.2 %). The lowest rate of the contribution of higher education to GRP in 2014 was observable in Pskov Region (0.6 %) (fig. 6).

Among the reviewed regions, Pskov Region has the lowest number of employed graduates with higher educational attainment, and also these graduates have the lowest average wages. Thuswise, this subject of the Russian Federation has the lowest rate of the contribution of higher education to GRP. The Republic of Adygeya, Ivanovo Region, and Ulyanovsk Region are not by any means in the lead by the number of employed graduates with higher educational attainment among the reviewed regions. However, they have the lowest GRP rates, therefore, they have the highest rate of the contribution of higher education to GRP.

Translation

Table 1

The contribution of higher education in Moscow and Saint-Petersburg in the enlarged groups of training programs and specialties that made the highest contribution of education (mln RUB)*

The enlarged group of training programs and specialties	The contribution of higher education
Moscow	
38.00.00 — Economics and management	71256,1
40.00.00 — Legal studies	23598,4
09.00.00 — Information and computer sciences	5517,7
08.00.00 — Building methods and technology	4441,5
23.00.00 — Ground transportation methods and technologies	4052,5
44.00.00 — Education and pedagogical sciences	3889,1
37.00.00 — Psychological sciences	3205,3
42.00.00 — Mass media and information library science	2457,1
13.00.00 — Power industry and heat power industry	2165,3
39.00.00 — Social science and social work	1867,0
Saint-Petersburg	
38.00.00 — Economics and management	14524,0
40.00.00 — Legal studies	1860,8
23.00.00 — Ground transportation methods and technologies	1559,5
09.00.00 — Information and computer sciences	1467,1
44.00.00 — Education and pedagogical sciences	1412,2
08.00.00 — Building methods and technology	1221,7
31.00.00 — Clinical medicine	1027,6
13.00.00 — Power industry and heat power industry	893,3
15.00.00 — Mechanical engineering	850,9
42.00.00 — Mass media and information library science	846,9

* Calculated according to the information analysis content concerning the results of conducting the monitoring of operating efficiency of educational institutions of higher education (See The Ministry of Science and Education of the Russian Federation. (2016). Retrieved from: http://indicators.miccedu.ru/monitoring/2015/ (date of access: 01.05.2017).

According to the results of data analysis in view of 55 enlarged groups of training programs and qualifications, Moscow has the higher rate of the contribution of higher education in terms of the most major programs than Saint-Petersburg. Saint-Petersburg has leading positions only in terms of such qualifications as engineering physics and technologies, weapons and weapon systems, aerial navigation and aviation and aerospace equipment, shipbuilding and water transport engineering and technologies, health sciences and preventive medicine, agriculture, forestry and fishery, consumer services and tourist trade, art studies, cultural studies and socio-cultural projects (Table 1).

The first two groups of qualifications that are in the lead both in Moscow and in Saint-Petersburg are economics and law management. The top ten by the contribution of higher education to the socio-economic development in both Moscow and Saint-Petersburg includes information and computer sciences, building methods and technology, ground transport methods and technology, education and pedagogical sciences, media and information and library services, power industry and heat power industry.

The differences between two cities are found only in two groups of qualifications in the top ten list. In Moscow, the top ten list includes psychological sciences and social sciences and social work, and in Saint-Petersburg, it includes clinical medicine and mechanical engineering.

Among the enlarged groups of training programs and qualifications that have the lowest contribution rate in Moscow and Saint-Petersburg there are 4 shared groups either — chemistry, philosophy, ethics, and religious studies, weapons and weapon systems, nanotechnologies and nanomaterials (Table 2).

In all Russian regions selected for the research, just like in Moscow and in Saint-Petersburg, the group "economy and management" is in the lead by the contribution of higher education to the socio-economic development among enlarged groups of training programs and qualifications. Almost every

Table 2

The contribution of higher education in Moscow and Saint-Petersburg in the enlarged groups of training programs and specialties that made the lowest contribution of education (mln. RUB)*

The enlarged group of training programs and specialties	The contribution of higher education
Moscow	
04.00.00 — Chemistry	144,2
47.00.00 — Philosophy, ethics and, religious studies	136,6
50.00.00 — Art studies	91,6
16.00.00 — Physicotechnical science and technology	87,3
26.00.00 — Shipbuilding and water transport methods and technologies	84,5
48.00.00 — Theological studies	66,5
32.00.00 — Health science and preventive medicine	43,7
17.00.00 — Weapon and weapon systems	43,1
30.00.00 — Fundamental medicine	31,8
28.00.00 — Nanotechnologies and nanomaterials	
Saint-Petersburg	
36.00.00 — Veterinary and animal sciences	110,6
29.00.00 — Consumer goods manufacturing technologies	85,1
07.00.00 — Architecture	81,3
17.00.00 — Weapon and weapon systems	64,3
06.00.00 — Biological sciences	64,1
04.00.00 — Chemistry	63,7
14.00.00 — Nuclear power engineering and technologies	51,6
47.00.00 — Philosophy, ethics, and religious studies	46,6
48.00.00 — Theological studies	4,0
28.00.00 — Nanotechnologies and nanomaterials	3,6

* Calculated according to the information analysis content concerning the results of conducting the monitoring of operating efficiency of educational institutions of higher education (See The Ministry of Science and Education of the Russian Federation. (2016). Retrieved from: http://indicators.miccedu.ru/monitoring/2015/ (date of access: 01.05.2017).

reviewed subject of the Russian Federation has legal studies and education and pedagogical sciences included in the list of leading programs.

Presumably, other enlarged groups of training programs and qualifications which have leading positions in one or another Russian region reflect the regional features of manpower training and the region's economy need for manpower.

For example, in Ulyanovsk Region, the leading programs are aerial navigation and aviation and aerospace equipment and agriculture, forestry and fishery. In Irkutsk Region and the Stavropol territory, the leaders are applied geology, mining, oil and gas engineering and geodesy, and also building methods and technology. Industrial ecology and biotechnology are also in the lead in Irkutsk Region. In Ivanovo Region, the list of enlarged groups of training programs and qualifications which has the highest rate of contribution of education to the socio-economic development of the region in 2014 includes chemical engineering, power industry, and heat power industry. In the Khabarovsk territory, building methods and technology and ground transportation methods and technology lead the way. In Chelyabinsk Region, the leaders are clinical medicine and agriculture, forestry and fishery. Physical training and sports, power industry and heat power industry, agriculture, forestry, and fishery made the top list in Pskov Region. Building methods and technology and ground transportation methods and technology came forward in the Republic of Adygeya.

The lists of enlarged groups of training programs and qualifications that have the lowest rate of the contribution of education differ in eight reviewed Russian regions. In Ivanovo Region, this list includes architecture, physics, and astronomy. The Khabarovsk territory has a different list — it includes information security, geosciences. The enlarged groups of training programs and qualifications that have the lowest rate of the contribution of higher education are represented by computer sciences and

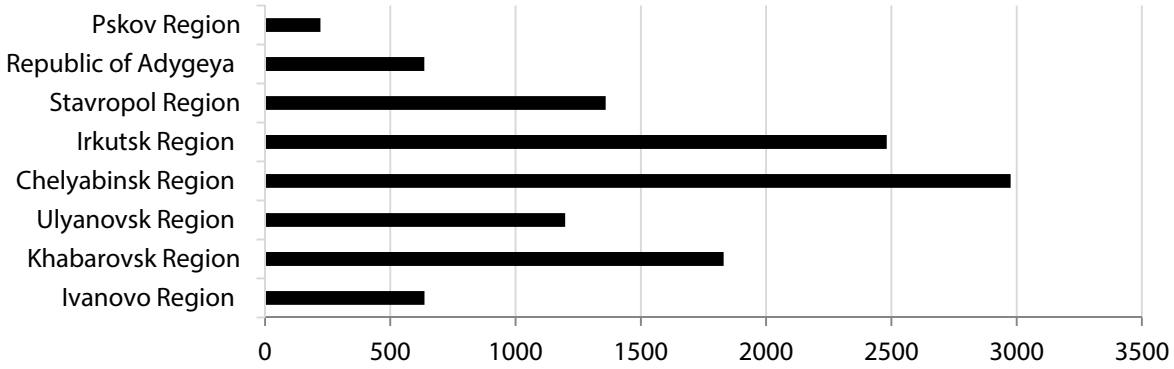

Fig. 7. *The contribution of higher education to GRP in 8 Russian regions in the "economics and management" enlarged group of specialties (mln. RUB)(Calculated according to the information analysis content concerning the results of conducting the monitoring of operating efficiency of educational institutions of higher education (See The Ministry of Science and Education of the Russian Federation. (2016). Retrieved from: http://indicators.miccedu.ru/monitoring/2015/ (date of access: 01.05.2017).)*

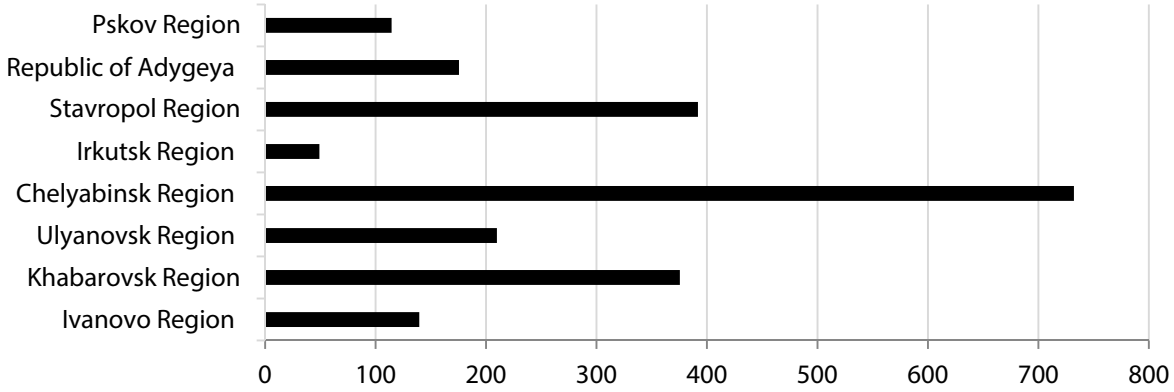

Fig. 8. *The contribution of higher education to GRP in 8 Russian regions in the "education and pedagogical sciences" enlarged group of specialties (mln RUB)(Calculated according to the information analysis content concerning the results of conducting the monitoring of operating efficiency of educational institutions of higher education (See the Ministry of Science and Education of the Russian Federation. (2016). Retrieved from: http://indicators.miccedu.ru/monitoring/2015/ (date of access: 01.05.2017).)*

information sciences and materials engineering in Ulyanovsk Region. In Chelyabinsk Region, these groups are represented by chemistry, screen arts, and consumer industry technologies.

The lowest rate of the contribution of higher education in Irkutsk Region was received in the following training programs—"philosophy, ethics and religious studies", "fundamental medicine", "nanotechnologies and nanomaterials". In the Stavropol territory, it was received in such training programs as electronics, radio engineering, and communications systems, consumer goods manufacturing technologies. In the Republic of Adygeya, the list includes the following—engineering systems management, mass media, and informational library science. In Pskov Region, the list consisted of social sciences and social work, biological sciences, technogenic safety, and environmental engineering.

Among eight selected Russian regions, the highest rate of the contribution of higher education to the socio-economic development in the most "profitable" enlarged group of specialties, namely, economics and management was received in Chelyabinsk Region and Irkutsk Region. The lowest rate of the contribution of education in these training programs was received in Pskov Region due to the smallest number of employed graduates of these training programs (fig. 7).

In the enlarged group of such training programs as "education and pedagogical sciences", Chelyabinsk Region leads the way again. However, Irkutsk Region shifted to the very end of the list—in this region, the rate of the contribution of higher education in the training program "education and pedagogical sciences" is the lowest among the reviewed regions in 2014. The leaders in the training program "education and pedagogical sciences" are the Stavropol territory and the Khabarovsk territory (fig. 8).

In the "legal studies" training program, Irkutsk Region and the Khabarovsk territory outperform other subjects of the Russian Federation once again. The Republic of Adygeya is also one of the leaders

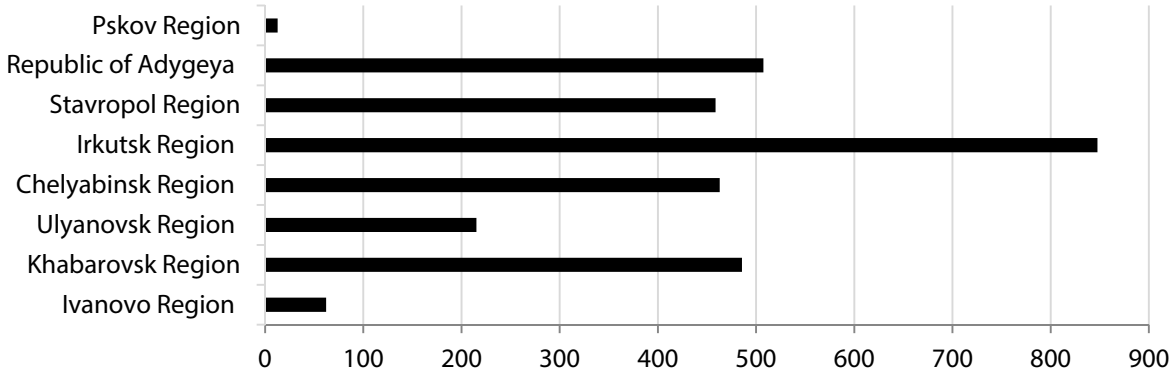

Fig. 9. *The contribution of higher education to GRP in 8 Russian regions in the "legal studies" enlarged group of specialties (mln. RUB) (Calculated according to the information analysis content concerning the results of conducting the monitoring of operating efficiency of educational institutions of higher education (See the Ministry of Science and Education of the Russian Federation. (2016). Retrieved from: http://indicators.miccedu.ru/monitoring/2015/ (date of access: 01.05.2017).)*

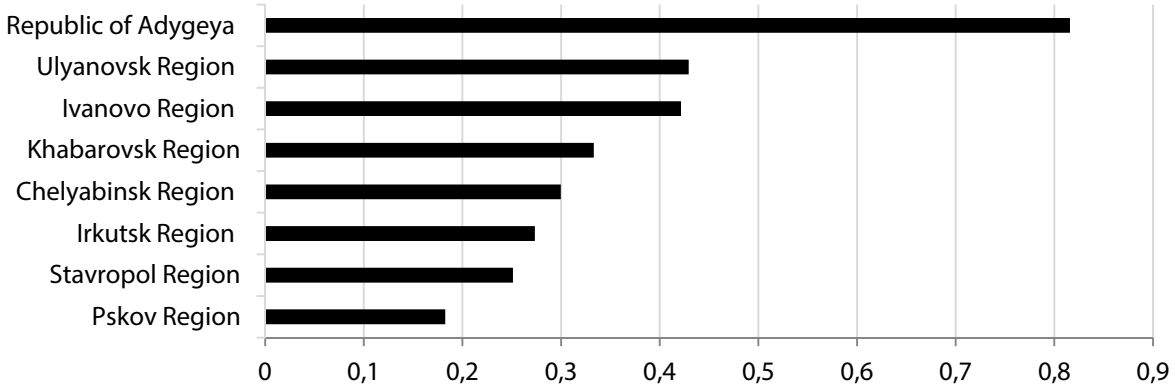

Fig. 10. *The contribution of higher education to the GRP in 8 Russian regions in the "economics and management" enlarged group of specialties (%)(Calculated according to the information analysis content concerning the results of conducting the monitoring of operating efficiency of educational institutions of higher education. (See the Ministry of Science and Education of the Russian Federation. (2016). Retrieved from:// http://indicators.miccedu.ru/monitoring/2015/ (date of access: 01.05.2017))*

in this training program. Among the eight Russian regions, the lowest rate of the contribution of higher education to the socio-economic development in this training program is evidenced to be in Pskov Region (fig. 9).

During the calculations of the relation of the contribution of higher education to the GRP of each selected Russian region, the Republic of Adygeya comes forward almost in every enlarged group of training programs and specialties due to the lowest rate of GRP in 2014 among other reviewed Russian regions. That prompts the more substantial contribution of higher education to GRP accordingly. As an example, the results of calculations of the contribution of higher education to GRP in the "economics and management" enlarged group of specialties in eight Russian regions are presented in figure 10.

Conclusion

It is noteworthy that the main contribution to the socio-economic development of the subjects of the Russian Federation is made by the higher education system. It is fair to assume that as long as the substantial part of graduates of initial and secondary vocational education systems continue their education and, correspondingly, are not accounted during the calculations, the contribution of these educational levels to the socio-economic development of Russian regions are substantially lower than the contribution of the higher education system.

The potential contribution of the secondary education system to the socio-economic development of the subjects of the Russian Federation is primarily determined by the fact that it provides the training of students for the following stages of education, and does not provide graduates' introduction to the labor market.

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Translation

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