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Educational Background as a Factor of National Welfare Boosting

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Abstract

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The article presents the identifying the relationship between the level of education and the level of income in the national economy. As the title implies the article describes the education as a factor of accelerating economic growth: the concept of human capital. Data are given about the educational factor in the economy of developed countries. The article gives the analysis of educational markets in Russia and its impact on the welfare of the population. It is dealt with the state system of higher education in Russia. The main problems of higher education were identified. Recommendations are given for solving the main problems of the higher education system. This article presents such data as indexes of the educational level of the world countries (20 countries), a ranking of countries and territories according to the size of GNI per capita, the relationship between the level of education and the level of income across regions, the relationship between the level of education and socio-economic development of the region (correlation of indicators of socio-economic development of the region and the proportion of people who have vocational education).

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1. Introduction

The issue concerning major factors of economic advance plays crucial role for the world economy, since, regardless of the fact that a big number of countries have been able to reach the comfort level of social welfare, the intercountry income gap is still rather big.

The technology development leads to the intensification of the role of human capital assets, as only with the qualified workforce the state is capable of introducing all the novelties that make the economy function efficiently in the current climate. Therefore, it is necessary to take this marker into account

while analyzing the chief factors of economy growth. Besides, the statistical investigations show that the total factor productivity contributes more and more to the economic advance; the former, in turn, shows the level of progress in science and technology and – consequently – depends on education.

One of the main tasks of the modern economics is to search the methods of reducing the intercountry income gap and to fight poverty in the less developed countries. In order to provide an answer to the question as to which direction the economic policy must take so that the per-capita income can increase, it is important to evaluate the significance of diverse factors for the economy. One of those factors is the educational background of the nation. Hence, the scientific investigations aimed at the study of the national educational background as a factor of social welfare boosting remain a hot topic.

The purpose of writing this article is to study the level of education of population as a factor of national welfare boosting.

The Subject of research: the level of education as a factor of economic growth.

Problem statement:

- to research the relation of education level and income level of the population in the national economy, in particular, to consider education as a factor of acceleration of economic growth: the concept of human capital, as well as educational factor in the developed countries economies.

- to analyze state educational markets of Russia and its impact on the welfare of the population, namely, to analyze the state system of higher education of Russia, to explore market transformation of the higher education system of Russia.

1.1. The interconnection between educational background and income level in the national economy

The modern progress in science and technology has resulted in the significant alteration of the material-and-technical factors of manufacture and life in general; an equally important result lies in the crucial change of the structure, content, and the nature of the reservoir of knowledge, skill, and experience of the workforce. The increasing complexity of the manufacturing process has stipulated the breakpoint in the significance of education for the further manufacture development. While the manufacturers were able to satisfy their need in workforce by employing the unskilled workers, the education had very bare connections with the economy.

Before the beginning of the twentieth century the system of training an inconsiderable number of skilled workers, technicians, and engineers was not arranged in the social terms. The workers were trained ‘on the spot’, whereas the science was a prerogative of certain research workers, and the former did not have a big impact on the development of the manufacturing process. The main purpose of education – which was of common cultural nature – resided in the performance of social functions. The situation changed when mass use of highly qualified workers became essential. Education became an immanent condition of the manufacturing process along with the tools of trade.

The role of sci-tech progress in economy increased, which resulted in the change of the attitude of the western economists to the issues of the manpower replacement. Scientists became focused on the problem of the brand new workforce formation. The ubiquitous automation of manufacturing process, as well as the introduction of the complicated machinery, demanded radical reconsideration of the

attitude to the 'basic material', which led to the formulation of a completely new notion of human resources (HR). The latter expressed a totally different entity and quality of labour per se and labour relations.

The human capital assets involve the reservoir of knowledge, skills, abilities, and motivations, which stimulates the growth of people's productivity and influences the growth of their income (earnings). All kinds of salaries that are useful by nature and determine the future income of man are considered to be 'the investments to human capital assets.' Rewards are defined as anticipated higher income, the prestigious job opportunity, social status boosting, etc. In turn, expenditures are defined as monetary valuation of the costs of educating and training, as well as the alternative cost of such investments.

In macroeconomic sense the human capital assets acts as the chief factor of economic advance.

Investing to the human capital provide a long-term economic and social effect. The investment horizon of the human capital is much longer than that of the physical capital. Only within the frame of education it can last from twelve to eighteen years (Dobrynin, & Tarasevich, 2004).

There is a definite correlation between the income of the worker and their educational background: the former increases with the increase of the latter (as well as with the age increase). Yet, this progression has its limits (normally it is the age of 55 or 60, which coincides with retirement period). Upon reaching the mentioned limit, the income of the worker – irrespective of their educational background – tends to decrease in a sharp manner.

For evaluation of efficiency of human capital investment there exists a specific index of intrinsic norm for the education profit. This norm shows a definite income norm anticipated in the process of a certain investment project accomplishment. While choosing a project, the investor must compare its intrinsic norm with the effective interest rate. If the value of the former is more or equals to the latter, the education investment project is thought to be profitable.

The norm rate index can be used in the long-term trends analysis within manpower market. The deficiency of labor supply in certain sectors / areas / education levels (taking into account the laissez-faire conditions) causes the increase in the relative level of salary for the demanded workers. This results in the growth of the training expenses. The increase of the expenses norm rate leads to the growth of the number of people getting qualified in a certain area. With the flow of time the supply increases, and the lack of manpower is annihilated. In case of the supply vs. demand balance the correlation between the workforce training expenses and the workforce salary level becomes optimal, whereas the intrinsic norm rates become stabilized. In conclusion, we can argue that education is a leading sector of human capital formation, the foundation of social welfare in general and individual well-being in particular. The most effective fulfilment of educational factor is a key issue for the economic advance of the country.

The evolution and progress of the whole human civilization confirms a peculiar role of education in the common cultural development of the society, its moral and spiritual improvement, as well as in the growth of both economic potential and the level of social welfare of the nation. The educational background was in the society attention focus at all times; it determined the social status and served as the base of the individual welfare.

In the current climate the development of the system of education is also considered as a base of the social and economic development of the country and the increase of the national well-being.

According to the World Bank data, the current fraction of human capital in the formation of the national wealth makes from 60% to 80%. The similar trend can be traced in the dynamic pattern of the corporative cost element. Thus, the Watson Wyatt's investigations demonstrated that the capital structure of Nokia corporation was 95% comprised of fictitious assets involving qualifications, skills, talent of the workers, as well as the know-how matters.

The second half of the twentieth century made obvious the fact that the leading country of the twenty-first century would be the one with the most efficient system of education. This fact has fueled the developed countries to reconsider 1) the role, place, and mission of education and 2) the necessity to set new priorities of its development.

The research conducted by UNESCO provides evidence of the globally increasing role of higher education. Throughout the recent decades there have been figured out several global trends in the development of higher education system. The most significant of them are the following:

since 1960 the population of students has become 6 times as big as before. It is estimated that by 2020 the student population will have reached the number of 130–140 million; thus resulting in the expansion material and technical facilities employed in the educational sector and in the growing expenditures in this sector of economy;

the national expenditures maintaining the system of higher education have significantly increased. An exception to this are the countries of the socialist camp. In America the educational expenditures have increased by 3 times, in the Western Europe – by 3.4 times, in China – by 2 times, in the Eastern Asia – by 4 times. The decreasing tendency is traced only for the former countries of the socialist camp (25%);

the migration of research workers to the developed countries has become a much more frequent phenomenon; the science and education fractionation has mass proportions; the multilevel Anglo-Saxon educational system has influenced a lot of non-English speaking cultures; the global educational mega-systems have emerged recently. Currently the educational mega-systems are located in the USA, India, China, Russian, Japan, Indonesia, Korea, Germany, the Philippines, and Canada. Higher education as a phenomenon has transformed from the educational system to the worldwide industry of educating and training;

due to globalization and digital revolution higher education has become open and diversified. Integration to the economic and social spheres has led to the systemic integration of Western European educational policies, which imply that higher education takes the priority. At the present time both quality and level of education has a direct influence on the economic advance of any state. The current manufacturing process places high requirements both on the technological environment and on the worker's qualifications and their regular upgrading.

From this point of view, the level of education within a particular region can be considered as one of the factors that determine the value of the gross regional product. The development experiences of a vast range of countries prove the existent correlation between the level of education and the process of economic advance.

Within a market economy, one of the main goals of the policy aimed at backing of the national educational potential is to maintain the sufficient number of investments to the educational system. Thanks to high-quality education, an individual can reach their set lifetime objectives, the employers are able to satisfy their economic needs, the society and state become capable of developing human resources.

The world experience concerning the financial backing solutions shows that since the 1980s the majority of the developed countries have reduced the fraction of the budget means and enhanced the ratio of non-budgetary funding spent on educational purposes.

In the developed world countries the state plays an exclusive chief role in terms of financial backing of educational process.

The goal of the state in a developed civilized society is to boost the life standards of the citizenry. The achievement of the goal can be made possible via the national economy advance and the all-sector manpower high-quality training.

Employers, as market participants, are bound to be interested in employees with high capacity and highly developed professional skills / characteristics. The latter function as primary factors in the process of enhancing efficiency and income rate. Furthermore, efficiency includes not only the profit return but the socially crucial functions performance (oriented toward profit gains as well).

The fundamental principle of modern company management tools is the maximal employment of manpower sources. Subsequent to this, the personnel is considered to be the crucial factor, which determines the efficiency of the disposable resources usage. The best foreign business practices prove that 1) investment to manpower and 2) the formation of improvement-friendly and 'troubleshootable' workplace conditions give the highest and the fastest profit return of the funds invested. Annually big Western corporations spend from 2% to 5% of the company budget on the training of their employees.

Thus, the sector of education appears to be one of the most profitable investment area for the advanced economy countries. Besides, this sector has a high extent of investment loss risk and a high rate of investment profit returns.

1.2. Analysis of the Russian educational market and its influence on the social welfare

Education index is a complex figure devised by the United Nations Development Programme (UNPD). Education index can be calculated through the combination of adult competence index and aggregate share of students' number.

The index under analysis measures the achievements of the country in terms of the education level of its people according to the two major factors:

- adult competence index (2/3 of weight number);
- aggregate share of students' number in sectors of primary, secondary, and higher education (1/3 of weight number).

The two measurement aspects are combined in the summarized Index which is normalized in the form of numeric values from 0 (min) to 1 (max). It is universally accepted that developed countries must have the minimum index of 0.8 although most of them have the index of 0.9 and higher. While being placed within the world rating, all countries are arranged on the basis of Education index (see the

table below); the first place corresponds to the highest value of this factor, the last place – respectively – corresponds to the lowest one.

Table 1. Rating table: education index of the world countries.

Place	Country	Index
1	Australia	0.927
2	New Zealand	0.917
3	Norway	0.910
4	Netherlands	0.894
5	USA	0.890
6	Ireland	0.887
7	Germany	0.884
8	Lithuania	0.877
9	Denmark	0.873
10	Czech Republic	0.866
11	South Korea	0.865
12	Slovenia	0.863
13	Great Britain	0.860
14	Estonia	0.859
15	Israel	0.854
16	Canada	0.850
17	Iceland	0.847
18	Switzerland	0.844
19	Sweden	0.830
20	Poland	0.825

The gross national income (GNI) index is one of the fundamental ones in the world statistics. This factor is frequently thought to be the life standard and welfare indicator within a country or a region.

In the World Bank methodology aimed at the annual calculation of the per-capita GNI indices, all the countries and territories fall under three major categories:

- countries with a high per-capita income (\$ 12,616 and higher);
- countries with a medium per-capita income (from \$ 1,036 to \$ 12,615);
- countries with a low per-capita income (from \$ 1,035 and lower).

Table 2. Countries and territories rating according to the value of per-capita gross national product.

Place	Country	Revenue (\$)
1	Bermuda	106 140
2	Norway	103 630
3	Qatar	92 200
4	Switzerland	88 120
5	Macao	76 270
6	Luxembourg	75 990
7	Australia	64 540
8	Sweden	61 610
9	Denmark	61 310
10	USA	55 200
11	Singapore	55 150
12	Netherlands	51 890
13	Canada	51 630
14	Austria	49 670
15	Kuwait	49 300
16	Finland	48 420
17	Germany	47 640

18	Iceland	46 350
19	Belgium	47 260
20	Ireland	46 550

The constituent correspondence can be traced between the educational background and the regional income rate. The correspondence is visualized in the following graph.

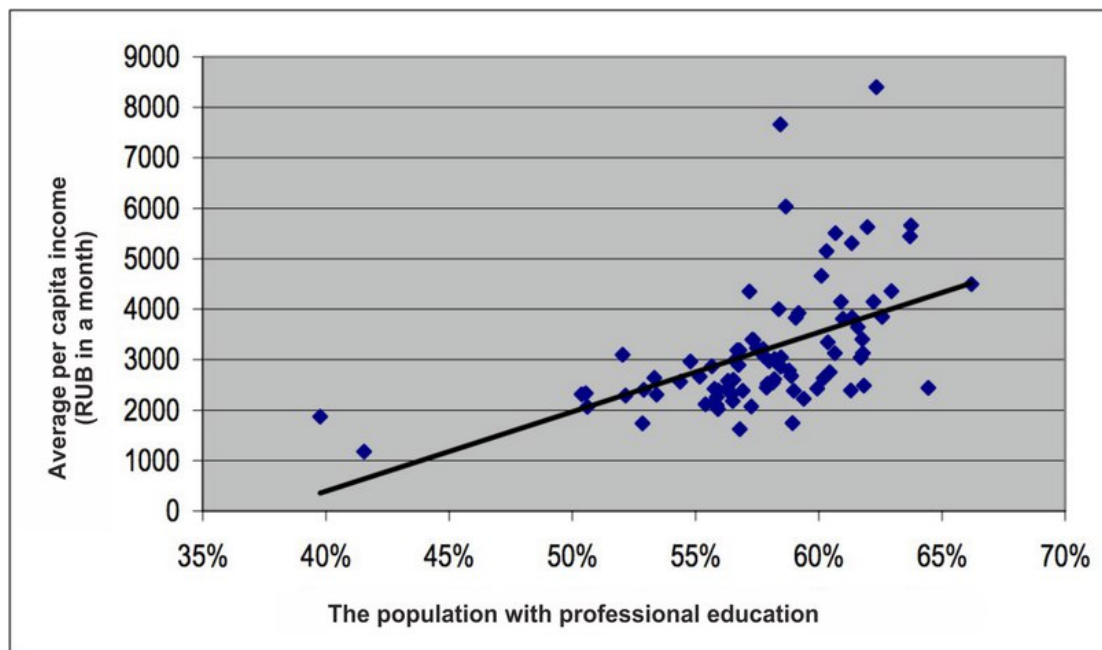


Fig. 1. The relation of education level and regional income.

A similar, even more evident correspondence is traced while comparing the proportion of the population with professional education to the regional socio-economic factor. There exists an apparent positive dependence between the proportion of qualified people and the per-capita GRP. Moreover, this dependence exists both for professional education on the whole and for its certain stages (apart from primary vocational education).

Table 3. Correlation between the educational background and socio-economic advance of the region.

socio-economic indicators	The proportion of the population having			
	professional education	higher professional education	secondary vocational education	primary vocational education
Gross Regional Product per capita	0,42	0,42	0,44	0,04
Own fiscal revenue per capita	0,19	0,22	0,10	-0,03

The socio-economic and political reformation of 1990s have significantly changed the Russian educational system and allowed to transform the educational institutions into self-sustaining relatively

independent ones, to diversify academic curricula and syllabi, to develop the non-budgetary educational sector. The listed processes received a sound legal framework in the Constitution and in the Federal Law “On Higher and Post-Graduate Professional Education”.

The recent decades have been characterized by the increase in the number of educational institutions and university students.

Yet, despite the seemingly positive changes, the socio-economic crisis of 1990s has had a dramatic impact on the system of higher education in Russia. Since 1991, Russia has lost a significant portion of its potential in the higher education sphere: about 300 thousand highly qualified professors and scholars have left their jobs; part of them have emigrated; the amount of research projects has become 20 times smaller; the area of research practical application has become surprisingly narrow; the number of registered author certificates and patents has decreased by 100. The budget backing of higher educational institutions has been reduced; the lab equipment influx has almost stopped.

There was no longer a correlation between national economy and the system of higher education; the latter has transformed to a facility meeting the momentary needs of entrants and their parents wishing to obtain a prestigious job. As a result, the quality of education per se and teaching staff decreased. While analysing the higher education system there have been figured out the following problems, which require an urgent solution: (Romanova, 2006)

- demographic crisis capable of unrecoverable damaging the higher school potential – unless properly treated;
- non-equal availability of the higher education institutions for the school-leavers from non-central regions, rural areas, and low-income family background;
- gap between entrance exams requirements and the skill level of the graduates; wide popularity of private tutors and commercial programmes;
- decaying system of research and academic work;
- low mobility and flexibility of the population leading to the educational regionalization;
- reduction of financial backing and outdated laboratory equipment;
- absence of adjustment system for young specialists in the sphere of public production. The need in such adjustment is caused by the fact of discrepancy between the graduate major and the actual demands of the regional labour markets;
- the ageing of higher education academic staff;
- inability of the whole system to respond to the new social demands in a quick and adequate manner.

To solve the listed problems, there has been devised a special programme entitled “Conception of Russian Education Upgrade”. The programme claims to complete a list of assignments:

- to guarantee the availability and equality of good education;
- to upgrade the quality of professional education;
- to form the legal norms and economic mechanisms for non-budget investments to education;
- to enhance social status and professional skills of the academic staff; to back and support them on the governmental and social levels;

- to develop education as an open national system 1) based on the principle of responsibility distribution between the performers of educational policy and 2) reinforcing the role and significance of all the parties involved (i.e., students, teachers, parents, and educational institution).

Still, the educational system upgrade is being fulfilled under rather controversial conditions. The federal power tends to transfer the expenditures to the local budget funds – an approach capable of breaking the unitary educational environment of Russia and consequently reducing flexibility and availability of higher education. The functional transference of such manner appears to be a kind of burden shift on the part of the governmental authorities.

Thus, the current upgrading of higher education leads to the formation of isolated markets of manpower and educational services and widens the gap between central and non-central universities, as the main goal of the process lies solely in the realm of meeting the local consumer demands.

The development of market relations in Russia greatly influenced the economic environment of budget-funded universities. The instability and uncertainty of the external environment are increasing; the budget funding of higher education keeps on being reduced. The higher education institutions are to provide their maintenance using their own resources, launching financial non-academic initiatives, and seeking new investors by themselves. Non-budget activities have proved to be the most obvious way to solve aforementioned problems. On the one hand, those activities have helped to enhance and enrich the supply sources; on the other hand, they have stimulated the adjustment of academic institutions to the rules of market economy.

Currently Russia disposes of educational services market that can be described as a system of cross-unit economic relations in the sphere of purchase and sale of educational services performing the function of goods.

The main role of the educational market is the chain linking between manufacturer and consumer of educational services (Lukashenko, 2013).

Enterprises and organisations as consumers of the academic units 'goods' are interested in obtaining the qualified, positively motivated workforce able to join the manufacturing process with minimum time and money costs.

The employers often seek cooperation with academic environment; on the one hand, the latter offset the costs of qualified workforce training; on the other hand, they require diversification and dissemination of the standard academic curricula.

In turn, the student – as an educational service consumer – strains after their educational background improvement in order to be highly sought-after within the labour market and, consequently, to be able to increase their income and social status.

The correlation between the educational background and the per-capita income rate is evident. It is estimated that increase in the training period increases GDP by 5–15%. Payoff from educational expenditures in developing countries is higher: in the Central Africa the investment to primary education provides 24% GDP growth, while in the countries with low income it makes 23% of GDP growth. Analysing economic advance factors for developed countries, it becomes possible to draw a conclusion about the definite correlation between the income growth and the educational background.

World developmental practices in the realm of education allows to conclude that in several factors are necessary in order to guarantee the stability of educational system:

- decentralized and democratic management;
- multi-way backing system;
- efficient motivators and mechanisms of private investment promotion;
- availability of all educational stages for all social strata; the concurrence of central and non-central priorities;
- the development of the system of educational quality assessment;
- the governmental support for the educational services market and manpower market;
- systemic structuring of education; the formation of unitary structure of lifelong education.

2. Conclusions

The analysis of Russian educational market and its impact on the social welfare has shown that current educational environment is presented by two models of non-central markets: namely, monopolistic and oligopolistic with the utter domination of the latter. To be an effective unit of educational market, a non-central institution needs to develop a complex ideology of entrepreneurship.

Competitiveness of educational institutions and their training services are directly correlated: the higher is the competitiveness of the graduates coming from a certain institution, the more they are welcome in the workforce market; hence, they are capable of gaining a high income rate, thus promoting the competitiveness of the institution.

References

- Dobrynin, A.I., Tarasevich, L.S. (2004). *Economic theory: coursebook*. Saint Petersburg: PITER. (in Russian)
- Lukashenko, M.A. (2003). *Higher education institution in the educational market: hot management topics*. Moscow: Market DS. (in Russian)
- Romanova, I.B. (2006). *Ensuring competitiveness of higher education institution in the non-central educational market: theory and practice: thesis*. (Unpublished doctoral thesis). Middle Volga scientific center, Ulyanovsk, Russia. (in Russian)