

**CDSSES 2020****IV International Scientific Conference "Competitiveness and the development of socio-economic systems" dedicated to the memory of Alexander Tatarkin****EDUCATION COSTS AS AN INVESTMENT IN HUMAN CAPITAL**

Natalia Mineeva (a)\*

\*Corresponding author

(a) Ural Federal University, 13b, Lenin St., Yekaterinburg, Russia;  
Institute of Economics Ural Branch of the Russian Academy of Sciences, 29, Moskovskaya St., Yekaterinburg,  
Russia, 9220350757@mail.ru

**Abstract**

At the stage of the post-industrial development of social production, human capital becomes the basis for obtaining incomes for most of the population in the form of wages. It determines the standard of living in a region or country, which, in turn, is a reflection of the level of development of productive forces and the nature of production relations. The fall in real incomes of the population observed in recent years is an objectively observed risk of violation of the conditions of a decent life and free human development guaranteed by Art. 7 of the Constitution of the Russian Federation. The study results show a directly proportional relationship between the level of education, the level of income of the population in the form of wages, and the quality of life in a post-industrial society, which explains the relevance of the topic of this study. This dependence weakens at the meso-level of the economy, but retains its importance at the mini- and micro-level, although it is limited by subjective factors associated with the labor market's instability.

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## 1. Introduction

The main provisions of the theory of human capital were formulated in the middle of the twentieth century in the United States. Economists, considering investing in human capital, pay special attention to investments in the capital of education. This topic is devoted to such economists as Becker (1985); Schultz (1972), and etc.

In domestic economic science, the study of the problems of the formation and use of human capital is a traditional subject of outstanding research and is considered by many Russian scientists in various aspects. However, in establishing the relationship between individual investments in human capital and the level of wages, the research carried out does not consider the influence of the variety of subjective factors in the context of falling real incomes of the Russian population.

## 2. Problem Statement

Expenditures on education, made to increase labor productivity and contribute to the growth of an individual's income, along with investments in special training, physical condition and motivation, are investments in human capital, particularly in its intellectual component. Investments in human capital - the time and money required to obtain education and training.

The sources of investment in education are personal funds of the population, business and government funds.

Accordingly, the return on investment in education can be:

- a high level of individual earnings;
- an increase in value added in economic structures (Dearden & Sianesi, 2001);
- contribution to the social and economic development of the state (Zborovsky & Ambarova, 2018).

The distribution aspect is of particular importance in determining income for human capital, since the income received depends on the type of capital to which they relate. So, the income for pure labor is wages at the minimum wage level. The income derived from the physical and mental natural abilities of a person is a kind of rent on natural abilities. The difference between the actual wages and the minimum wage will be considered as income for the intellectual capital received as a result of higher education.

However, this distribution is rather arbitrary. The main problem is that work is the result of emotional and rational motivations, as well as biophysical and mental abilities of a person, which, in turn, are either inherited natural abilities, or acquired during life, and not necessarily in the process of direct training.

Equally, it is impossible to clearly divide the income received by the entrepreneur in the form of added value into income from the employment of labor and into income from the use of means and objects of labor.

In addition, in the conditions of the currently objectively existing disproportions of the Russian economy, the direct dependence of wages on its qualitative and quantitative characteristics becomes very conditional.

However, as world practice shows, it is education that is the determining factor in earning income from employment. So, in particular, in Great Britain, the average salary premium for obtaining higher education is about 25%, and the additional earnings due to the level of education for an individual throughout his life exceeds the cost of obtaining education 10 times (McGranahan & Sianesi, 2005).

Moreover, human capital researchers argue that each new level of education received has its own additional share of income (Harkness & Machin, 2016). So, for example, higher education's economic effect will be equal to the difference in the lifetime earnings of two persons - one who graduated from a higher educational institution, and the other who received a secondary education (Blundell, 2016).

In addition to direct education costs, economists include "alternative income" in the composition of education costs. These are incomes in the form of wages that students could receive for paid work instead of training (Howarth & Kennedy, 2016). This loss of profits is about half of the total training costs; their share ranges from 50-60 % of the total cost of higher and secondary education (Chevalier & Walker, 2018).

Education also affects a person's income. Moreover, they vary significantly from the level of education. Accordingly, the size of the cost of obtaining it, which unambiguously links the distribution of national income between social groups in the field of macroeconomics and personal income in the field of microeconomics (McIntosh, 2017).

### **3. Research Questions**

During the study, the following issues were resolved:

- generalize the existing approaches to assessing the relationship between investment in education and the level of wages; generalize the existing approaches to assessing the relationship between investment in education and the level of wages;
- assess the mechanism of the influence of education on the size of personal income;
- determine the influence of the level of education on the formation of personal incomes of the population in the form of wages.

The scientific novelty of the research lies in the disclosure of contradictions in the relationship «level of education – remuneration», which will neutralize the risks associated with overcoming these contradictions.

### **4. Purpose of the Study**

The purpose of the study is to review and research the importance of education in the modern economy. The object of the research is the relationship between education costs and incomes on human capital in the form of wages at various levels of the economy. The subject of the research is the feasibility of investing in education in the face of a decrease in personal incomes of the population in the form of wages. The study was carried out in the period 2015-2019.

## 5. Research Methods

Depending on the solution of specific problems in the course of the study, modern theoretical and empirical scientific methods were used: historical, statistical and economic, monographic, experimental, computational-constructive, balance, abstract-logical, complex-program-target, economic and mathematical.

## 6. Findings

According to the results of the study, there is a fairly stable relationship between earnings and the level of education of workers in Russia as a whole, despite significant differences across regions and industries. The growth in earnings by education, relative to the minimum wage, in Russia varies by industry from 130% to 475%, and the weighted average growth exceeds 250%.

In addition to additional income, an increase in a person's education level often gives him quantitatively weakly measurable, but qualitatively significant advantages in the form of improved working conditions, leisure and consumer choice. In addition, a person receives additional professional prospects, as well as an increase in social status in society and the possibility of self-realization, since, according to research results (Clark et al., 2016):

60% of the difference in people's incomes is related to differences in education;

40% - depend on all other factors (health, natural abilities, social origin).

Thus, the relationship «education level – wage level» can be described by the Cobb-Douglas function (Charles & Douglas, 1928), but taking into account some restrictions.

So, in particular, the tightness of the relationship is affected by two oppositely directed trends.

On the one hand, the level and quality of education contribute to an increase in the individual's personal income in the form of wages.

At the same time, the population with a low income level has rather limited opportunities for obtaining a quality education.

In the context of deep socio-economic differentiation of the population of Russia in terms of income, the relationship between the level of disposable income and the possibility of obtaining a quality education becomes obvious. Sections of the population with low incomes are not only unable to present an effective demand for educational services, but also do not experience an objective need for higher education. High-income groups of the population (3-5 %) are indifferent to higher education in Russia, since the income level of this social group provides it with a quality education abroad. In addition to these polar groups, a broad stratification group is observed in the transforming Russian economy, which is distinguished by certain professional and educational characteristics that provide its representatives with high socio-economic significance due to their mass character.

This group is characterized by high income differentiation depending on the region and industry, i.e. the amount of remuneration for workers in different sectors of the economy and territories performing a conditionally equal volume of duties may be incommensurable.

If we take the size of the average monthly accrued wages per employee in nominal terms as a basis, then the level of wages in the country as a whole is more than 2 times higher than this indicator in

such industries as the extraction and transportation of fuel and energy minerals, financial activities, building.

The lowest level (from the average for the economy) of the average monthly wage in other sectors is:

agriculture, hunting and forestry - 40%,  
textile and clothing production - 50%,  
science and education - 60%.

In addition, there is a differentiation of income depending on the region of residence and the category of the settlement (Klyachko & Semionova, 2018). Thus, the leading cities in terms of income are traditionally Moscow and St. Petersburg, the level of wages exceeds the national average by 1.5 times. Also, the regions with the highest earnings are KhMAO-Yugra and YaNAO (Ilyasov et al., 2019).

Consequently, the direct relationship between education, quantitative and qualitative assessment of labor and real wages in the economy as a whole can be estimated with an acceptable margin of error when the "region / industry" restriction is introduced. So, wages largely depend on the position held, the appointment to which is determined mainly by education (qualifications) and work experience in this specialty, taking into account the influence of the territorial and sectoral factor.

## 7. Conclusion

The Russian economy is distinguished by the acceleration of the processes of socio-economic stratification of the population along a variety of determinants, among which the most important are the levels of income and education. The impoverishment of the majority of the population leads to significant restrictions on demand in the education market, which, together with declining budget funding and the structuring of educational institutions, does not increase the quality of educational services. Simultaneously, the education system continues to play a leading role in the development of all spheres of society. Despite the loss of direct dependence of the size of wages on education in the Russian Federation economy as a whole, at the level of macro- and microeconomics, the efficiency of investments in education remains.

At the level of mesoeconomics, there is also an indirect effect of return on investment in education, expressed as an increase in GRP, and as the inverse effect of GDP growth on the social and economic well-being of society in the form of an increase in socially significant budget expenditures (Soldatova, 2018).

Thus, it can be argued that the level of education, for the most part, determines not only the socio-economic structure of society but also acts as a factor for smoothing social tension, contributes to the adaptation of the population to the dynamic conditions of a market economy.

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