

# HUMAN CAPITAL AS A FACTOR OF REGIONAL DEVELOPMENT

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## Abstract

The paper aims to identify the distinctive features of “human capital” in the conditions of the industrial region (in the example of the Ural region). The authors consider the term “human capital” and its structural components in the historical perspective. It is stated that this concept has undergone considerable changes over the time. Currently, it contains many elements from physical-biological to socio-cultural. The Department of Applied Sociology (Ural State University of Economics) in cooperation with colleagues from Czech Republic and China conducted a sociological survey in 2017. This survey identified the key features of human capital in the region that include welfare (income), educational level (qualifications), values (attitude to work, to authorities, to job responsibilities, the value of proactive attitude), people commitment in the field of labour. The authors make a conclusion about a contradictory nature of modern human capital development. In some indicators, the population of the Ural region shows quite advanced performance (e.g. quite high educational level), whereas in the parameter of proactive attitude the population has paternalistic models of behaviour that were typical of the Soviet period.

**Key words:** human capital, distinctive features, income, education, values, proactive attitude at work

**JEL Code:** E24, R11, R13

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## 1 Introduction

The article aims to analyse some features of the human capital in the context of its interaction with the social environment (in the example of Sverdlovskaya Oblast). The specifics of modern advanced technical and information processes result in increased expectations for the labor capital. These are determined by changes in production technologies, a growing role of project activities, a need to set up temporary teams. At the same time, modern innovative and information processes are introduced not only in the production field, but also in other spheres of community life that causes the relevance and timeliness of studying a wider concept of

“human capital” and labor capital as one of its components. Even those people who do not participate in labor life tend to be involved in the processes that require a set of new qualities – mobility, attentional set-shifting and attention stability, good memory, profound knowledge, skills, creativity. To successfully adapt to rapidly changing conditions it is becoming more and more important to obtain well-developed human capital: ability to quickly assess the situation and find adequate strategic and tactical solutions, flexibility of thinking, competence, dynamism, the increasing importance of self-organization and self-adjustment. Being rather independent and having their own dynamics, these two processes – the development of labor capital and human capital, productive-economic capital and socio-cultural – societal capital – are interconnected: eventually, innovative processes are generated by people, representatives of society, and their human capital. The level of human capital development depends both on person’s own efforts, and on the conditions provided for people by their social environment.

## **2 Terminology**

Human capital as defined by most economists consists of the acquired knowledge, skills, motivation and energy that can be used by human beings during a certain period of time to produce and consume goods and services. It is a form of capital because it acts as a source of future earnings or future satisfactions, or both. It is called human because the main beneficiary is the person and social groups that are formed by people.

A large number of scientific works in various branches of knowledge focus on studying the phenomenon of human capital, analyzing its structure and factors that contribute to and interfere with its current functioning and development. Theodor Schultz and Gary Becker, Barton Veysbrod, George Mintser, Li Hansen have conducted research into this subject. Later a big contribution was made by M. Blaug, S. Bouls, R. Leyard, B. Chizvik and others. Many modern Russian authors consider and explore the subject of human capital in their scientific-research work (Bannykh & Kostina, 2016).

The concept “human capital” as an economic category has gone through several stages in its development (Zaborova, 2016). At the initial stage, it was restricted to people’s knowledge, experience, and education (Theodor Schultz). At the second stage, it gradually expands the framework and is complemented with such aspects as health, upbringing, information, culture and art. At the third stage, it becomes multidimensional and there are added such elements as investments into safety, formation of elite and civil society, overall improvement in the quality of life.

Overall, at the initial stages the concept of human capital concentrated on assessing some of people's qualities and characteristics, then it gradually begins to describe not only the individual, but also the social environment in the broad interpretation of its components. We consider that it is necessary to distinguish the concept of "human capital" as a qualitative characteristic of the personality or social and territorial community, and as spatial and territorial environment, which either creates conditions for its formation and development or neutralizes them.

Human capital characterizes all aspects of the individual's personality in terms of their readiness for performing labor functions and their real implementation in the results of their work. V. S. Yefimov considers human capital as a universal, independent component of the "production process" providing the additional product value. Also the author points out three aspects (modes) of the human capital: biological aspect – preservation of HC: demography + health + activity; social aspect – HC development: education + qualification + social self-discipline + leadership; economic aspect – HC capitalization: production systems + social institutes + infrastructure of opportunities (Yefimov, 2010).

Based on K. K. Platonov's theory, it is possible to distinguish four basic elements in the human capital structure: a biological substructure (age, sexual attributes, temperament, type of nervous system), psychological properties (individual manifestations of memory, thinking, abilities, feelings), social experience (knowledge, abilities, skills, habits that overall generate the so-called intellectual capital (Kuzminov, Frumin & Ovcharova, 2018) and orientation (this factor integrates in itself all other factors) – inclinations, purposes, interests, desires. We tend to believe that this methodological approach can be applied to analyze the human capital of both individuals and social-cultural groups.

Currently, many authors also consider the interaction of the human capital and environment (Gennaioli et al., 2014; Lall & Yilmaz, 2001; Svoboda & Mastalka, 2013; Zhang & Zhang, 2014). In our work, the emphasis is on studying the human capital as a factor of developing Sverdlovskaya Oblast.

### **3 Methodology**

This article is based on two surveys: in 2017 together with the Faculty of Corporate Strategy, the Institute of Technology and Business in Ceske Budejovice, Czech Republic there was conducted a sociological survey. In the framework of this research project, there were surveyed 1,140 Czech employees and 1,202 Russian employees from Sverdlovskaya

Oblast. The sample of respondents included 395 Czech and 308 Russian blue-collar workers from both manufacturing and non-manufacturing companies, service companies and state-owned companies. Respondents were chosen by random selection where each population unit had the same degree of probability of getting into the sample.

The first part of the questionnaire focused on the socio-demographic and qualification characteristics of the employees in the areas compared in the research. This part provided us with the fundamental data about our respondents, in terms of their age, gender, number of years of work in a company, completed education and job position.

The second part of the questionnaire was designed to determine employee motivation preferences. Respondents showed their preferences by choosing one of the five grades of importance ranked on the Likert scale (1-unimportant to 5 – very important). The statistical program SPSS by IBM was used for data processing. Descriptive statistics was used to characterize basic sets. Statistical characteristics were calculated for each motivation factor.

In addition to the simple comparison of the descriptive characteristics values, due to the selective nature of the data obtained, the test of the conformity of the arithmetic means was applied. We test the significance of the differences in the arithmetic mean of the groups of motivation factors of the monitored sets so that the significance level of 95% excludes that the observed differences in descriptive characteristics were not caused solely by the representation error. To test the compliance of the average factors of motivation factors, a dual t-test was used. The null hypothesis was tested against the alternative one:  $H_0 : \sigma_1^2 = \sigma_2^2$  vs.  $H_1 : \sigma_1^2 \neq \sigma_2^2$ .

$H_0$ : it is assumed that the arithmetic averages of the preference of groups of motivation factors of the Czech and Russian (Sverdlovsk region) blue-collar workers are equal to each other. At the same time, it is believed that the difference between them, if any, is caused only due to random fluctuations in the selection results.

$H_1$ : it is assumed that the arithmetic averages of the preference of groups of motivation factors of the Czech and Russian (Sverdlovskaya Oblast) blue-collar workers are not equal to each other. At the same time, it is believed that the difference between them, if any, is not caused only due to random fluctuations in the selection results. As a test criterion, the random variable  $t$  was used and it had  $t$ -distribution. At the end of the test we compared  $t$  with  $t_{\alpha/2; f}$ . In the case where  $t \leq t_{\alpha/2; f}$ ,  $H_0$  was accepted and the tested difference was not considered as significant. Otherwise, if  $t_{\alpha} > \frac{t_{\alpha}}{2}; f$ ,  $H_0$  was rejected at the significance level of  $\alpha$  % and the alternative hypothesis  $H_1$  was accepted.

The research findings were compared with the earlier research: “Information culture of the Population of Sverdlovskaya Oblast: Settlement and Social-Demographic Aspects” that was conducted as a part of Russian Foundation for Humanities grant in 2014–2015 (N = 1130), selection by settlement type, age and gender parameters.

### **3 Some characteristic features of the human capital of Sverdlovskaya Oblast**

The region’s innovative development is impossible without socio-cultural prerequisites – human capital and various forms of social activities, performed by the population. Sverdlovskaya Oblast, as the largest territorial subject of the Russian Federation, is a part of the Ural Federal District. The Oblast is located in the center of Russia, the population is over 4.3 million people (2018), the capital of the oblast is Yekaterinburg. Historically, over a long period the Oblast saw the large-scale formation of the mining industry. Currently, the Oblast is carrying out a gradual step-by-step transition to more advanced production technologies, the role of the base materials sector, undergoing dramatic technical reequipment, is growing, as well as its involvement into the processes of economic modernization. More than 40 defensive enterprises and not less than 200 component-producing (civil) enterprises operate in the middle Urals which overall make up a powerful military industrial complex.

The Ural region stands out due to its highly developed social component (Lapin, 2015). However, being rather developed in general terms, in practice the Oblast human capital is differentiated regarding both its economic, socio-cultural characteristics, and manifestation of various forms of labor, political and socio-cultural activity (engagement). Therefore, the most important indicator of the human capital is its educational level. Education is the investment field that predetermines the scale of future economic growth. The residents of Sverdlovskaya Oblast tend to have quite a high educational level. According to the All-Russian Population Census (Rosstat, 2018), the educational level of the oblast population (aged 15 years old and over) was the following (see tab. 1).

**Tab. 1. Educational level of Sverdlovskaya Oblast population, 2010, %**

	Groups	%
1	illiterate	0.5
2	primary	5.4
3	general secondary education (complete)	30.9

4	secondary vocational training	38.9
5	higher (complete and incomplete)	23.8
6	postgraduate	0.5
	Total	100

Source: Rosstat, 2018.

The able-bodied population has mainly professional education (38.9 %) that corresponds to the level of technical complexity and production expectations of the oblast.

The environment created in large cities provides the most comfortable conditions for human capital development as it is rich in information, educational, and scientific institutions. In Yekaterinburg, there are 164 secondary educational institutions, 20 state universities, a network of branches of higher education institutions based in other cities. The city houses the Presidium and about 20 institutes of the Ural Branch of the Russian Academy of Sciences, 66 scientific research institutes. In Russia Sverdlovskaya Oblast ranks 2<sup>nd</sup> by the number of students at higher educational institutions.

According to the report of Global Human Capital 2017 published by the World Economic Forum in September, 2017, Russia ranks 4th by the human capital volume (the measurement of the population coverage with different levels of formal education). Yet, Russia ranks only 42<sup>nd</sup> in terms of the real use of skills in work-related activities. Even though the correlation between education and economic success is proved (Cree, Kay & Steward, 2012), in general, the educational level manifests itself in other components of human capital – stereotypes, and value orientations.

The Ural community tends to retain the value orientations of the previous period, the community conservatism manifests itself in maintaining traditional hierarchy of value orientations which constrain the expansion in individuals' activity. Traditionally, the Russian cultural matrix is characterized by a considerable imperial influence on all aspects of the individual's life, reliance upon power authorities and the idea of paternalism. Historically, the embeddedness of the economy of the Ural cities into the top down executive power has inevitably led to the formation of such features as great power statehood, responsibility to the state, domination of the statist moods (Barazgova, Vandyshev & Likhacheva, 2012). The majority of the population is characterized by the conservatism of these features while the value-based attitude to the state is more likely to be referred to as "fear" rather than "trust". As Ural residents traditionally worked in large labor collectives it has generated such feature of the city community as well-developed communication skills. However, residents feel trust

only towards their closest people; social network tends to be limited. Individual trust is manifested only at interpersonal level that is between people who know each other well, whereas impersonal trust between two strangers, who belong to the same community, remains one of the weakest elements of social interaction. People are likely to feel mistrust to those who are not a part of their immediate environment. In terms of behavior, the Ural residents are characterized by tolerance brought about by their common mission that is to be realized regardless of the national identity and ethnic values.

Most residents of Sverdlovskaya Oblast do not recognize the value priorities of “new” liberal values that are the value foundation for individualism as a principle of activism. As a result, the majority of the population rejects innovations and makes the emphasis on stability.

The historical “closeness” of the territory caused by the military production did not allow residents to show horizontal and territorial mobility. Even now, if there is lack of jobs, inhabitants are not ready for active territorial mobility at long distances. However, the population is characterized by the mobilization activity: if important political and economic tasks are set, people become more active and show outstanding talents and abilities. Overall, the advanced part of the Ural community combines in its socio-cultural component such features as conservatism and overall industrial character with a clearly pronounced innovative trend.

These facts show the weakness of the real impact of the population’s formally high education level on the economic growth and innovative tendencies in the Oblast. The major factor influencing human capital activity is its income. In Sverdlovskaya Oblast almost every seventh inhabitant is well off (13.9 %), every fourth – gains a rather high monthly income that is sufficient to financially support the family (24.6 %), every tenth is able to provide himself with the minimum set of benefits and services (10.2 %). At the same time, nearly 10 % of the population are below the poverty line, with the total monthly income of no more than 10 thousand rubles. It should be taken into account that the degree of income differentiation can be regarded as high: half of the population total income is concentrated in the hands of 20 per cent of the richest inhabitants (Silin, 2017).

Importantly, 16.7 % of the population income is generated due to welfare payments rather than salary and wages. In other words, in terms of labor activity, a considerable part of the Oblast population lives at the expense of the state and its benefits and allowances. In small towns the population considers the local authorities to be the main influence actor, followed by the city-forming enterprises, while its own influence the population estimates at 20 % (Animitsa, 2012). The citizens of small towns show strong paternalistic moods and tend to

prefer stronger vertical power structure. The trust-based strategy index that characterizes people's deep-rooted readiness for consolidation and cooperation is falling steadily in line with the reduction in settlement populousness (in cities with the population over 1 million inhabitants it is equal to 0.69; in cities with up to 1 million inhabitants – 0.60; in small towns – 0.53; in villages – 0.53) (Petrenko, 2008). People do not feel responsible for what is going on in their houses and yards. However, the passionate part of the Oblast population is capable of extraordinary actions, for instance, B. N. Yeltsin, the first President of Russia, and some other famous political leaders, who come from Sverdlovskaya Oblast.

The influence of the income factor on the population activity was also revealed during the Czech-Russian research project. The analysis of motivational factors showed that the Czech and Russian blue-collar workers place the greatest emphasis on financial rewards. This preference is different from other job positions, for example, managers and white-collar workers in the Czech Republic definitely prefer the workplace atmosphere. This may be related to the fact that blue-collar workers often have lower wages than white-collar workers and managers. In addition, Czech workers prefer relationship factors (good work team and atmosphere in the workplace), financial factors (fair appraisal system) and work-related factors. Russian workers clearly prefer financial factors, such as basic salary and additional financial rewards, then work-related factors (working time, workplace safety, working environment), followed by relationship factors (good work team ranks 3rd and workplace atmosphere ranks 7th).

The second most preferred group of motivational factors are relationship motivational factors. The Czech employees showed the lowest demand for social factors (score 3.75), while Russian employees – career-related factors (score 4.08). The results are estimated at a significant level of 95 %. Based on the t-test, their preference is the same in both groups (the H<sub>0</sub> is confirmed). Considering the other groups of motivational factors, a statistically significant difference between the preferences of the Russian and Czech blue-collar workers has been confirmed (the H<sub>0</sub> is rejected in case of career, work-related and social factors and the alternative one is favoured). The third most influential group of motivational factors is the group of work-related – this is identical in both monitored groups of Czech and Russian employees. However, higher demands can be observed in the group from Sverdlovskaya Oblast.

## **Conclusion**

The relevance of human capital development meeting the expectations of the information era is measured by the proportion of advanced innovative production facilities that already exist in the community or the proportion that the community strives to achieve. The low level of human capital development leads to the fact that citizens not only are not ready for creative production, but also appear to be unable to appreciate and consume the materialized achievements and innovations, which, in its turn, impacts negatively the consumption market. This means that human capital as the major element of innovative economy has to be studied both as an independent phenomenon, and in the context of the social environment, community. Overall, at the moment, the high educational level of residents in Sverdlovskaya Oblast is not manifested in high labor activity, as the Oblast still has strong stereotypes inherited from the past. At the same time, the factor of income acts as the major motivational force that encourages the population to boost their labor activity.

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