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Human Capital of Russia's Construction Industry

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Abstract: In the article, the authors analyze human capital challenges to be tacked by Russia's construction industry. The research into the industry's workforce is based on a sociological study involving three categories of respondents, including executives of construction companies, young professionals and final year students of universities of architecture and civil engineering based in eleven Russian regions. The study has revealed a deficit of skilled engineers having a set of professional and social competencies. The authors argue that deterioration of the industry's human capital is a major challenge, compare the condition of the workforce in Russia and in EU member states and propose their solutions to the problems in question.

Key words: Human potential · Workforce capacity · Human capital · Construction industry · Qualified personnel · Professional competencies · Social competencies · Social control

INTRODUCTION

Human capital is a set of knowledge, skills and practices pertaining to a specific profession and accumulated by an employee by obtaining his/her secondary, professional secondary, higher or vocational education and work experience. The notion of human capital was introduced by Theodore W. Schulz and Gary S. Becker in the second half of the 20th century. Schultz stated that improvements in the wellbeing of the poor did not depend on the land, technology or their strengths, but rather on their knowledge. He entitled this qualitative aspect of the economy as "human capital". Schultz compiled the following definition for this notion: "All human resources and capabilities are inborn or acquired. Every person is born with an individual set of genes which define inborn human potential. We call the valuable qualities acquired by the person that can be strengthened by relevant investment human capital." [1] The human capital theory earned Theodore W. Schulz and Gary S. Becker Nobel Memorial Prizes in Economic Sciences in 1979 and 1992, respectively. Gary S. Becker argued that schooling, a computer training course, expenditures on medical care and lectures on the virtues of punctuality and honesty were also capital … because they raised earnings, improved health, or added to a person's good habits over much of his lifetime [2].

Schultz's definition is narrow in its essence, as it only encompasses knowledge, high-quality productive labor and human health. Later, this term earned a broader interpretation. Today, the academic community offers no unified composition of the "human capital" notion. Different authors offer different wordings for this notion, approaches to its structure andclassifications of types of capital.

Some scholars include health capital, workforce capital, intellectual capital, entrepreneurial capital, cultural and moral capital, social capital, brand capital, structural capital and organizational capital into the structure of human capital [3].

Other scholars expand this notion. They argue that human capital comprises the availability of migrating human capital, respect for political and social stability in a country, personal proactive attitude, responsibility andcommunicative skills-the factors that are hard to measure and impossible to verify [4].

Therefore, we will not concentrate on the scope or essence of this definition. In this article, we will focus on the human capital constituent that encompasses education, knowledge, skills and professionalism of employees, mostly those engaged in the construction industry.

High-quality human capital is the principal driver of the innovative and knowledge-intensive economy in the

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post-industrial society. Those countries that can boast of highly developed human capital, as well as educated, healthy and able-bodied population, proactive and creative professionals engaged in research-intensive industries, education, management, production and services provision, set the vector for development of the international economy. The share of the human capital in the national welfare reaches 70-80% in mature economies. Per-capita human capital in the USA exceeds the one in Russia by 87 times; the human capital in Germany exceeds the one in Russia by 39 times; the Japanese human capital exceeds the Russian one by 42 times and the Chinese one-by 1.3 times [5].

Investments into education, health, research, and, on the whole, into generation of the healthy investment climate, support of young and ambitious professionals, development of the efficient elite in the economy, politics, research and art contribute to the accrual of human capital. Moreover, human capital is boosted by the inflow of immigrants from other countries and exhausted by the outflow of local residents to other countries. This process was triggered in Russia in the 90ies of the 20ieth century andit is still underway.

Russia's aggregate investments into human capital account for about 10% of the GDP, while the USA contributes 26% of the GDP into their human capital. "We rapidly lose our positions in intelligent, research and artistic communities," says Yuriy Alekseev, Director, Center for Research into Problems of Personnel Logistics and Human Capital Development of Russian Territories, Scientific Research Institute for Comprehensive Municipal Research of Section of Social Sciences of the Russian Academy of Sciences and President, OPTIMA PROJECT nonprofit partnership, Interregional Center for Development of Workforce and Territories [6].

Well-weighted and mature contributions into the human potential will generate fast and considerable feedbacks. For example, one-year extension of the education term may cause the GDP to go up by 5-15% [7].

The quality of the human capital is a strategic challenge to the socioeconomic development of a country. In order to meet this challenge, the government needs to enhance the role of education, professional and vocational training, to bring young, talented and motivated university graduates into production enterprises and research institutions, to halt the process of ageing of the lecturing staff at universities and the research staff at research institutions.

If we address mature economies, we will find out that their experience and challenges in respect of human capital are different from those in Russia. For example, some European metropolitan areas hosting high-order corporate functions have a disproportionate supply of universities and it means short supply of specialists. However, on the contrary, a large stock of human capital does not lead to a high rate of economic growth. The analysis performed by H. Izushi and R. Huggins in their Empirical Analysis of Human Capital Development and Economic Growth in European Regions, demonstrates that the rate of economic growth is associated with the accumulation of human capital and a key to economic growth is continuous development of high-order human capital. Now human capital development represents a complex model based on interactions between knowledge workers andit requires continuous human capital development [8]. Russia urges for more education and knowledge, while Europe strives for its diversity, although both head for the human capital accrual.

If we limit our research to the study of human capital in the construction industry, we will have to admit that Russia's construction sector is in need of a technological upgrade and innovative breakthrough. Any breakthrough requires educated professionals and highly skilled specialists. The core reason for decelerated development of construction technologies in Russia consists in the low quality of its human capital and the unfriendly research environment failing to facilitate innovations. On the contrary, Russia's construction industry employs numerous unskilled workers. Employers are not willing to purchase expensive machinery or technologies; rather, they make heavy use of the manual labor of migrants from the republics of Middle Asia to generate substantial revenues by underpaying their unskilled workers, who need no special training, professional skills or good command of the Russian language. Presently, the construction industry suffers a shortage of highly skilled specialists, including architects, designers, managers, logistics specialists, engineers, budget officers and site supervisors. The industry also suffers a shortage of highly and semi-skilled workers, including electricians, electric welders and crane operators. In the coming five years, the shortage of skilled employees will remain and the same about the excessive supply of unskilled manpower. Systems of vocational training designated for workers and degree specialists need reengineering and drastic improvement [9].

MATERIALS AND METHOD

Department of social and political sciences of Moscow State University of Civil Engineering conducted a sociological study (a poll) of human resources of

Russia's construction industry in 11 regions of the Russian Federation. The poll was conducted in November and December 2011 andit involved three categories of respondents: employers, young specialists and graduate students.

Core Text: The sociological study has revealed shortage of skilled civil engineers, whereas the total number of engineers employed with design/construction companies is sufficient. Some regions may accrue the number of their graduates in industrial and civil engineering, architecture, utility networks, engineering methods of fire safety, occupational safety and ecology and information systems in civil engineering. The shortage mainly deals with the level of training demonstrated by graduates of civil engineering universities and the need to have the skills of engineers improved by various vocational training courses. Poll findings have proved that all employers, except for those based in Novosibirsk, consider that the level of training provided by civil engineering universities is far below the one needed for civil engineers to perform their duties as employees of construction companies. In response to the question "what is the origin of problems experienced by young civil engineers in finding jobs?", 70% of executives of construction companies in Samara, 60%-in Volgograd, 66.7% in Voronezh and 55%-in Moscow responded that "it is a low level of skills demonstrated by applicants".

Presently, the construction market needs engineers who have both theoretical knowledge and practical skills. The value of education depends on compliance between the knowledge of an employee and operations of an employer. 80-100% of respondents believe that the "ability to use theory in practice" is "important" or "very important". This competency was most highly ranked by the employers from St. Petersburg, Tyumen and Penza.

Individual human capital also comprises such elements as "the ability to assume the responsibility and take the lead", "the ability to find the solution in an abnormal situation" and "commitment to ongoing self-development". 70-80% of respondents based in all regions believe that these competencies are very important.

An employer does not need a mere skilled specialist. He needs a specialist having social competencies, including teamwork skills and motivation, to attain the objectives pursued by the employer. The majority of executives specified "teamwork skills" as a most important competency. In particular, this viewpoint is shared by 70.0% of Novosibirsk-based executives, 57.1% of Moscow-based executives, 53.8% of Penza-based executives and50.0% of Tomsk-based executives. In the EU, workers are increasingly expected to have good basic communication skills, including the ability to communicate with colleagues and project partners. Besides, the Russian construction industry urges for skilled workers, while the EU strives for the demarcation of trades and multi-skilling, which indicates a general shift from strictly demarcated trades towards a more general, multi-skilled occupational profile [10].

The ability to take the lead and to set and attain objectives was marked as an important skill by the employers based in Novosibirsk, Samara, Penza andTyumen. Responsibility, discipline and duty performance are also listed among the most important abilities. Any decision to fire an employee is driven by "low discipline and failure to perform duties", according to the employers in Tyumen (100%) and Samara (42.9%). Therefore, the system of education shall train a specialist with a pre-determined pattern of behavior: a responsible employee capable of taking initiative and using his/her creativity. Towards this end, the training process must facilitate development of a proactive attitude, leadership and management skills.

According to the respondents, conditions must be established for the generation of competencies which are of primary importance and attention must be driven to the teaching of the courses that may facilitate the generation of these competencies.

While Russia suffers from unsatisfactory training of construction specialists, Europe has to overcome both similar and different types of problems. As the EU construction market is highly fragmented, thus, there is a considerable difficulty in spreading good practices and innovation. Russia's construction industry suffers from lack of skilled manpower and a gap between theoretical knowledge and practical skills, while the EU construction sector faces the need to replace its skilled labor, because a huge number of skilled workers will retire between now and 2020. Moreover, the EU construction industry is in the process of transition to resource-efficient and low-carbon economy, which is an irrelevant issue in the Russian construction industry. Same as in Russia, the European construction industry suffers from insufficient investments and innovations. Unlike Russia's construction industry, the EU's construction sector drives substantial attention to the re-use of materials and treatment of waste [11].

Employers could exercise the most efficient control over the quality of training provided by universities and colleges in Russia. However, due to a huge gap between the construction industry and educational institutions,

construction companies are not interested in investing into their future employees and in tailoring their skills and competencies to specific needs. An employer does not have to fight for the person he needs and any vocational courses are cheaper than compensation of university tuition payments: 6.5% of tuition payments are made by construction companies in Volgograd and this is the highest figure across the country. The Russian construction industry could adopt the best practices of Germany. There, the construction sector is the joint responsibility of the federal government, federal states, social partners and enterprises. The main advantage of this system is the link between theory and practice, as a substantial part of practical training takes place in companies and it enables updated curricula in line with the labor market needs [10].

CONCLUSIONS

If we address the share of the human capital engaged in Russia's construction industry, we will find out that about 6% of Russia's workforce is employed there [12]. Its considerable portion represents negative human capital, or unskilled migrants who are unwilling to train and who cannot perform any technology-intensive responsibilities.

The quality of Russia's human capital keeps deteriorating. Education expenses reach 3.8-4% of the total GDP (education costs the USA about 5.5% of their GDP; Sweden and Norway invest 6.7% of their GDPs, France-5.6% and Slovenia-5.2% [5].

Against this background, responsible joint efforts of universities and the construction industry in control of the quality of training will improve the quality of the human capital for the young specialists to be able to fill the gap between theory and practice and to accumulate the skills that they may need at work.

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