

A.A.Zemtsov¹, E.V.Gartsueva²

¹National Research Tomsk State University, Russia;

²Ye.A.Buketov Karaganda State University
(E-mail: evg0283@mail.ru)

Theoretical approaches to the formation and development of human capital

At the present stage of development of the national economy a human capital plays an important role. Without involving it the transition to an innovative path of development is impossible. Thanks to the development of human capital, a competitiveness and economic growth, production efficiency can be increased. The article is devoted to theoretical approaches to the definition of human capital. The article is based on a method of comparative analysis. The authors have analyzed different definitions of human capital and summarized the views of the researchers in this field. The basic approaches reflecting the contents of the examined category are singled out.

Key words: capital, human capital, human capital theory.

The relevance of the research topic is determined by the fact that in terms of innovation economy, man is the generator of innovation, which means that the role of human capital increases dramatically, and resources provided by the labor market gain importance.

People are the main wealth of society as a whole and individual enterprises in particular. Their potential in modern conditions is realized in the form of human capital, which is the main driving force of economic and social development of contemporary society. Effective use in the manufacturing process of knowledge, innovation and creativity is becoming a critical factor in economic growth. Currently, a human (his education, qualifications and experience) is very important and at the same time under-utilized resource.

Human capital is different from physical capital that it is inseparable from the man. It cannot be bought, one can only take or provide for use under certain conditions, as well as the fact that knowledge and skills can be acquired without additional investment, but in practice, through training at work. At the same time the human capital, as well as physical one, is subject to wear and tear: human capabilities and knowledge may decrease over time, their support may degrade, and knowledge itself may become obsolete.

The quality of personnel, its ability and willingness to solve problems in terms of reforming largely determine the effectiveness of the entities. Forming a competent staff with an appropriate level of professional competence is an important condition for the successful solving the problems which businesses face.

In today's economic conditions every manager strives to maintain the pace of development and stability of the enterprise. Increased competitiveness and productivity are only possible with efficient use of human resources of the organization and a clear management system. Therefore, in addition to traditional forms of control at the company, a human resource control is gaining growing importance. Subjects have to use all their available reserves to make the staff really play a major role in improving the competitiveness of the organization, work productively and motivated.

Human capital is one of the basic elements of national wealth that characterize the value and quality of human resources, their intellectual and creative abilities, level of education, system of values. The concept of human capital is of great importance in the modern economic analysis. The modern world science has appreciated the role of intellectual property, found the necessity and high efficiency of investment in human capital and began to use the concept of human capital actively. The application of this concept provides new opportunities for studying such important issues as economic growth, income distribution, the place and the role of education in social reproduction, the content of the labor process.

Thus, human capital is an important type of investment in today's economy. The concept of «human capital» is gaining great importance not only for economists-theorists, but also for individual businesses. An interest of economics in human creative abilities, in ways of their formation and development has increased dramatically. Most companies begin to emphasize the accumulation of human capital as the most valuable of all types of capital. One way of accumulation of human capital is to invest in people, in their health and education. Today, studying the problems of the productive forces of men efficiency realized in the current condi-

tions in the form of human capital is not only relevant, but extends into the category of high priority in the structure of socio-economic research. This involves a deep research of this problem.

Formulation of the problem. Human capital theory has very old theoretical and methodological roots, however, it is a modern and very topical areas of neoclassical theory. Many scientists have made an undisputed contribution to the development of human capital issues. However, while appreciating the contribution of scientists, we have to admit that today there is no comprehensive definition of human capital. In this regard, the purpose of this article is to review and summarize the approaches to the treatment of human capital and to formulate a generalized definition of this category.

Methods of research. The paper uses methods such as a description of procedures, building schemes, methods of comparison.

Main part. Formation of the human capital concept was influenced by processes in the scientific, technical and economic areas of developed countries, which are called technological revolution. In scientific literature, questions of human capital are widely discussed, which is a complex, diverse and changing phenomenon. The researchers of the human capital focus on different aspects, which makes the difference of approaches in determining its essence and content.

The problem of human capital development is deeply rooted in the history of economic thought. The British economist, one of the founders of classical political economy in England, V. Petti was the first one to attempt to estimate the monetary value of the productive qualities of the person (XVII century). He wrote that the wealth of a society depends on the nature of employment of people, distinguishing useless activities and activities that «increase the qualifications of people and have them to this or that kind of ctivity, which in itself is of great importance» [1].

V. Petti also saw great benefit in public education. His view was that «schools and universities should be organized so as to prevent the possibility of the ambitions of parents preferred to flood these places with blockheads, and that, really talented could be elected as students» [1].

Later, A. Smith in his book «The Wealth of Nations» (1776), considered the quality of a productive worker as the main engine of economic progress. He noted that «the increase of labor efficiency depends on a total increase of a worker's agility and skill, and then on improving the machines and tools he worked with» [2]. The main idea of his research, which is one of the key ideas in human capital theory, is that the costs associated with the productive investments in human contribute to productivity growth and are compensated with a profit.

J. Mill wrote: «The human himself.. I do not consider as wealth. But his acquired abilities that exist only as a means and created with labor, with good reason, I think, fall into this category» [3]. He believed that the category of «country's wealth» can include the skill, energy and determination of the workers.

Karl Marx saw the production of man - a consumption production - as the second kind of social production. In this process of consumption production, labor force does not only recur but also improves, evolves. More skilled labor, Marx thought, materializes in equal intervals of time in relatively higher costs [4].

The concept of human capital has formed in an integrated theory only in the second half of XX century thanks to the works of «Chicago School» representatives. T. Schulz and G. Becker who paid attention to investment in human capital and their effectiveness assessment are considered the pioneers of human capital as a consistent concept.

T. Schulz believed that the welfare of poor people does not depend on the land, machinery or effort, but rather on knowledge. According to him, the key means of overcoming poverty are the science-based investments in land and skills of agricultural workers. He proposed the following definition: «All human abilities are either congenital or acquired. Everyone is born with an individual set of genes determining their innate abilities. Acquired valuable human qualities that can be amplified with corresponding investment, we call human capital» [5]. He saw the human capital as accumulation of the cost of labor power reproduction in the country, regardless of their source of coverage. The results of these investments are the accumulation of people's ability to work, their creative activity in society, the maintenance of most people's lives, health, etc. So T. Schulz connected the concept of «human capital» with the characteristics of «human factor», its «quality level», as well as its increasing role in economic development, growth and welfare of the population in the fight against poverty.

G. Becker's major work «Human capital» has become one of the classics of modern economic thought [6]. A model formulated in it has become a basis for all subsequent research in this area. Despite the fact that the main contribution to the development of the concept of human capital was introduced by T. Schulz, development of microeconomic foundations of this theory was given in Becker's fundamental work. G. Becker

stops on the «theory of investment in human capital». Under the subject of such investment the author implies not the advance money capital, but the very ability to work as a certain set of skills and knowledge of a worker of any specialization.

G. Becker bases the analysis on ideas about human behavior as rational and appropriate, applying concepts such as price, rareness, alternative costs, etc., to the most diverse aspects of human life. Thus, when investing in training and education, students and their parents behave rationally, weighing relevant costs and benefits. Like entrepreneurs, they consider expected marginal rate of return on such investments with a yield of alternative investments. Depending on what is economically feasible, they either decide to continue their studies or on their termination. Therefore rates of return serve as a regulator of the distribution of investments among different types and levels of education and between the education system as a whole and the rest of the economy. The high rates of return indicate underinvestment; low rates indicate overinvestment [7].

G. Becker was the first to realize a statistically valid calculation of the cost-effectiveness of education. To determine the revenue of, for example, higher education, from lifetime earnings of those who graduated from college he subtracted lifetime earnings of those who did not go beyond high school. As part of the training costs, he highlighted as the main item the «lost earnings», i.e. income lost by students during the years of study. According to G. Becker's calculations, in the US, return of higher education was at the level of 10–15%, exceeding the profitability for most companies. This confirmed his assumption of rational behavior of students and their parents [7].

A distinction between specific and general investment in people introduced by G. Becker had a great theoretical significance (Figure).

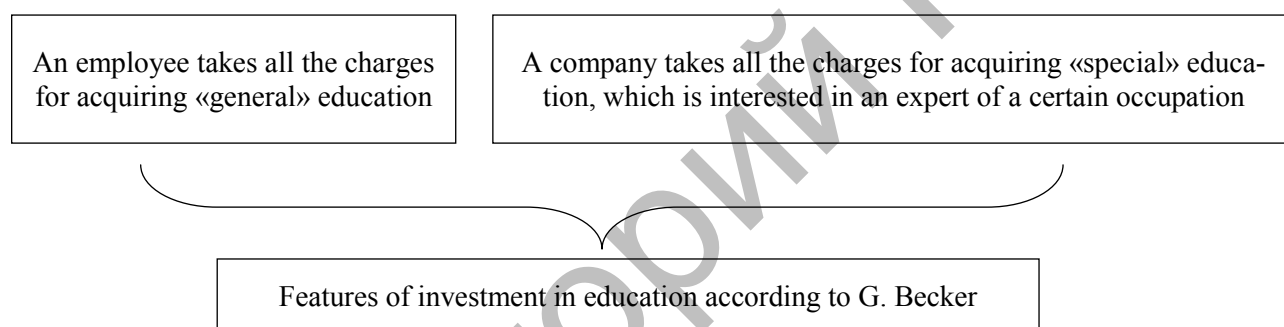


Figure. Specific and general investment in human according to G. Becker

The author believes that special training gives employees the knowledge and skills that are of interest only for that company where they were obtained (for example, to introduce beginners to the structure and internal regulations of the enterprise). During basic training the employee acquires knowledge and skills that can be applied on many other companies (training to work on a computer) [7].

While trying to even estimate (count) «private and social benefits» for individuals from investing in education at these different levels, G. Becker raises the question of the applicability of theory subjects and for making public policy decisions to «stimulate growth and productivity».

Thus, G. Becker has proved the effectiveness of investments in human capital and formulated an economic approach to human behavior.

L. Thurow gives the following definition: «Human capital of the people is their ability to produce goods and services». In this definition, a classical tradition to the recognition of importance of the role of ability to work is preserved. But among the abilities, L. Thurow highlights genetically basic economic ability: «economic capacity is not just another productive investment that an individual has. Economic ability affects the performance of all other investments». Hence an importance of position of the need for unity of life as a source of the formation and accumulation of human capital: «In fact, consumption, production and investment are joint products of human activities to sustain life» [8].

The authors of the «Economics» textbook (S. Fischer and other American authors) refer to human capital workforce as a skill level of workers. According to this clear definition, under «human capital» they definitely propose to understand quality of labor (natural data and the physical condition of the employee, acquired skills and qualification level, his education and mastery), i.e. that, which classics including Marx called an ability to work (although some of them frequently mixed this potency with labor itself).

In this textbook, the following more detailed definition appears: «Human capital is a measure of the incarnation in human of an ability to bring income. Human capital includes the innate abilities and talent, as well as education and acquired skills».

Among modern Russian researchers of human capital issues, we can note A.N. Dobrynin, S.A. Dyatlov, R.I. Kapelyushnikov, M.M. Kritskiy, S.A. Kurganskiy, B.M. Genkin, B.G. Yudin, T.G. Myasoedova and others. Theoretical positions of Russian scientists are distinguished by a clear differentiation between essence, content, forms or types, conditions of formation, reproduction and accumulation of human capital.

According to A.N. Dobrynin and S.A. Dyatlov, «human capital is a form of manifestation of human's productive forces in a market economy..., an adequate form of organization of human's productive forces included in the system of social market economy as the leading creative factor of social reproduction» [9]. The analysis of contents and conditions of a human capital capitalization allows A.N. Dobrynin and S.A. Dyatlov to develop a generic definition of human capital as an economic category of modern information and innovation society. «Human capital is a formed as a result of investments and a certain accumulated amount of health, knowledge, skills, abilities, motivations that are appropriately used at work, helping the growth of productivity and earnings» [9]. Thus, the authors describe the socio-economic form of human capital and its qualitative determination.

A considerable contribution to the theory of human capital was made by R.I. Kapelyushnikov's works, which are devoted to the study of the human capital of Russia, in particular, its evolution and structural features, quantitative assessment, as well as the formation of a monitoring system that would allow to analyze the quantitative and qualitative changes in the characteristics of the human capital accumulated by Russian society [10]. The author believes that human capital is an amount of knowledge and skills that can be used not only in production but also in consumer applications.

M.M. Kritskiy has identified human capital as «a universally-specific form of human activity, assimilating previous form of use and performance, appropriate to the ages of appropriating and producing entity, and carried out as a result of the historical movement of human society to its current state» [8].

According to S.A. Kurganskiy, human capital is a measure of formed as a result of investments and abilities and qualities accumulated by human which, if used properly, lead to an increase in productivity and income [11]. The author lays in the definition of human capital a premise of possibility of its physical (cash) measuring, the ability to measure the effectiveness of its use.

B.M. Genkin and B.G. Yudin believe that human capital characterizes the components of human potential that can become a source of income for households, businesses and countries. Such components can be physical and creative human abilities, his knowledge, skills, activity [12, 13]. The author considers human capital as a set of characteristics that determine performance and can be a source of income for individuals, families, businesses and society. As a rule, these qualities are usually considered health, natural abilities, education, professionalism and mobility.

T.G. Myasoedova considers human capital as a set of characteristics such as health, natural abilities, acquired knowledge, professional skills, motivation to work and constant development, common culture, which includes knowledge and compliance with the rules, regulations, laws of human communication, moral values [14].

An important role in development of the theoretical foundations of the study and solution of certain aspects of the «human capital» concept was played by the works of Kazakh scientists and economists as A.A. Abishev, Ya.A. Aubakirov, A.B. Maydyrova, S.K. Dzhumambaev, A.G. Mukhamedzhanova and others.

A.A. Abishev in his work reveals the socio-economic evolution of the production technological mode, a human capital, while sees the efficiency of its use as the growth potential of the world's productive forces.

Ya.A. Aubakirov and A.B. Maydyrova pay great attention to the development of human's productive abilities. They believe the human is the main creative subject, the factor in the creation of material wealth. The criterion of progress is a measure of the integral development of human and his needs [15].

S.K. Dzhumambaev considered problems of controlling human factor and his role in ensuring the effectiveness of the organization [16].

Particular attention to the problems of human capital pays A.G. Muhamedzhanova, who proves the importance and priority of human capital for economic development of Kazakhstan. According to her, human capital is the main asset of the nation. The capacity of national human capital is a critical element of the innovation process, a key factor in the efficiency and competitiveness of the national economy, to achieve high quality equipment and technologies, the transition to a humanized type of economic growth [17].

Table summarizes the definitions of human capital.

**The approaches to the definition of the «human capital» category
of foreign and domestic researchers**

Author	The author's approach to the essence of the «human capital» category
V. Petty	The monetary value of human's productive qualities.
A. Smith	The worker's productive qualities (knowledge, skills, abilities).
J. Mill	«The human himself... I do not consider as wealth. But his acquired abilities that exist only as a means and created with labor, with good reason, I think, fall into this category».
T. Schulz	Acquired valuable human qualities that can be amplified with corresponding investment.
G. Becker	The ability to work as a certain set of skills and knowledge of a worker of any specialization.
L. Thurow	The ability of people to produce goods and services.
A.N. Dobrynin, S.A. Dyatlov	Formed as a result of investments and a certain accumulated amount of health, knowledge, skills, abilities, motivations that are appropriately used at work, helping the growth of productivity and earnings.
R.I. Kapelyushnikov	The amount of knowledge and skills that can be used not only in production but also in consumer applications.
M.M. Kritskiy	A universally-specific form of human activity, assimilating previous form of use and performance, appropriate to the ages of appropriating and producing entity, and carried out as a result of the historical movement of human society to its current state.
S.A. Kurganskiy	The measure of formed as a result of investments and abilities and qualities accumulated by human which, if used properly, lead to an increase in productivity and income.
B.M. Genkin, B.G. Yudin	The set of characteristics that determine performance and can be a source of income for individuals, families, businesses and society (health, natural abilities, education, professionalism, mobility).
T.G. Myasoyedova	The set of characteristics such as health, natural abilities, acquired knowledge, professional skills, motivation to work and constant development, common culture, which includes knowledge and compliance with the rules, regulations, laws of human communication, moral values.
A.A. Abishev	Sees the human capital and the efficiency of its use as the growth potential of the world's productive forces.
Ya.A. Aubakirov, A.B. Maydyrova,	The human is the main creative subject, the factor in the creation of material wealth. The criterion of progress is a measure of the integral development of human and his needs.
S.K. Dzhumambaev	Considered problems of controlling human factor and his role in ensuring the effectiveness of the organization.
A.G. Mukhamedzhanova	The capacity of national human capital is a critical element of the innovation process, a key factor in the efficiency and competitiveness of the national economy, to achieve high quality equipment and technologies, the transition to a humanized type of economic growth.

So, initially the human capital was understood as a set of investments in human increasing his ability to work — education and skills. Later, the concept of human capital has expanded significantly.

Conclusion. Thus, according to the results of the study we may note that in economic literature, there are many definitions of human capital. Researchers in this field consider the category of «human capital» differently, and approach its definition from different positions. Some authors disclose the content of the concept, while others discuss the forms of human capital's existence.

An analysis of different views of foreign and domestic researchers allows us to formulate a generalized definition of the «human capital» category as follows: a set of human qualities (innate, accumulated, formed as a result of certain investments), such as education, skills, abilities, and the level of health, which can be used to meet his needs and make a profit.

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А.А.Земцов, Е.В.Гарцуева

Адами капитал концепциясының құрылуы мен дамуының теориялық тәсілдемесі

Адами капитал ұлттық экономиканың қазіргі заманғы даму кезеңінде үлкен роль атқарады. Адами капиталдың дамуы арқасында елдің бәсекеге қабілеттілігі және экономикалық өсуі жоғарлап, өндірістің тиімділігі арта түседі. Мақалада адами капиталды анықтаудағы теориялық тәсілдемесі салыстырмалы талдау әдісі негізінде құрылған. Авторлармен адами капиталдың әр түрлі анықтамалары талданып, осы саладағы зерттеушілердің көзқарастары жалпыланған. Қарастырылып отырған категориялардың мазмұнын бейнелейтін негізгі тәсілдемелер көрсетілген.

А.А.Земцов, Е.В.Гарцуева

Теоретические подходы к становлению и развитию концепции человеческого капитала

На современном этапе развития в национальной экономике важную роль играет человеческий капитал, без привлечения которого невозможен переход на инновационный путь развития. За счет развития человеческого капитала можно увеличить конкурентоспособность и экономический рост страны, повысить эффективность производства. Статья, посвященная теоретическим подходам к определению человеческого капитала, построена по методу сравнительного анализа. Авторами проанализированы различные определения человеческого капитала и обобщены взгляды исследователей в данной области. Выделены основные подходы, отражающие содержание рассматриваемой категории.

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