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РОЗРОБКА ІНТЕГРОВАНОЇ МОДЕЛІ ІНТЕЛЕКТУАЛЬНОГО КАПІТАЛУ НА ОСНОВІ РІЗНИХ ПІДХОДІВ ДО «ЛЮДСЬКОГО КАПІТАЛУ»

Анотація. У статті розглядається становлення та розвиток категорії "людський капітал", його роль у забезпеченні економічного розвитку, важливість використання людського потенціалу, важливість єдності його внутрішніх і зовнішніх аспектів. Також відображено усвідомлення важливості використання людського потенціалу в економічному розвитку, перетворення його на об'єкт дослідження, виникнення потреби в розширенні сфери досліджень у цьому напрямі. Детально охарактеризовано внесок представників основних наукових напрямів у розвиток категорії "людський капітал", окремі складові інтелектуального капіталу, методи їх вимірювання та шляхи створення ефективних систем управління. Систематизовано погляди різних дослідників у цій сфері.

Також при дослідженні категорії "людський потенціал" проведено порівняльний аналіз політико-економічного, технократичного, антропоцентричного підходів. Представлено інтеграційну модель розвитку інтелектуального капіталу на основі різних підходів до "людського капіталу" та визначено її складові.

Ключові слова: людський капітал, людський потенціал, інтелектуальний потенціал, соціальний капітал, перевага інтелектуального капіталу

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DEVELOPMENT OF AN INTEGRATED MODEL OF INTELLECTUAL CAPITAL BASED ON VARIOUS APPROACHES TO "HUMAN CAPITAL"

***Abstract.** The article notes the formation and development of the category "human capital", its role in ensuring economic development, the importance of using human potential, the importance of the unity of its internal and external aspects. It also reflects the awareness of the importance of using human potential in economic development, turning it into an object of research, the emergence of the need to expand the scope of research in this direction.*

The contribution of representatives of the main scientific directions to the development of the category "human capital", individual components of intellectual capital, methods of their measurement and ways of creating effective management systems are described in detail, the views of various researchers in this field are systematized.

Also, in the study of the category "human potential", a comparative analysis of political-economic, technocratic, anthropocentric approaches was carried out. The article presents an integration model of intellectual capital development based on various approaches to "human capital", its components are defined.

***Keywords:** human capital, human potential, intellectual capacity, social capital, intellectual capital advantage*

INTRODUCTION

The problems facing man and society require the globalization of all spheres of life, the development of new approaches and technologies, and the achievement of a level of civilized development that allows resolving internal contradictions. In this regard, the role of human capital in

the economic development of countries is gradually increasing, and, thus, the development of human capital, its rational use is of great importance in the conditions of modern political, economic and socio-economic changes. In other words, as the importance of using human potential in economic development was realized, it became necessary to turn it into an object of research and expand the scope of research. The main goal here is actively influence the development trends of the country by studying the factors affecting the development of socio-economic processes and taking them into account, using all possible options. Thus, the development and rational use of human capital in each country is one of the main directions of the country's policy [1].

In modern economic approaches, well-trained competent personnel and human capital are considered not just as a factor leading to an increase in production efficiency, but also as a driving force for the emergence of new production methods and technological discoveries.

According to many authors, the concept of “human capital” is a new term and was introduced into economics in the early 1960s in the work of the American economist, agricultural specialist Theodore Schultz “investment in Human Capital” [6].

In turn, T. Schultz referred to the work of a number of researchers in the study of various aspects of human capital. Examples of such are the all-inclusive concept of capital Irving Fisher, reflecting the development of common capital, including the development of human capital, the concept of Adam Smith, considering as capital the hereditary and acquired abilities of members of society, etc., can be shown.

In these studies, part of economic growth was explained by physical investments, and the other part by human capital, and the “theory of human capital” emerged.

MATERIALS AND METHODS

The "theory of human capital" largely belongs to the work of Gary S. Becker, an American student of Schultz, who considered human capital as a result of the investment process. Becker presented an important distinction between “general” human capital (which is valued by all potential employers) and “firm-specific” human capital (which includes only skills and knowledge of productive value in a particular company). While formal education levels produce “total human capital”, on-the-job training produces both types of human capital [5].

The theory of human capital is developing in parallel with a number of related fields, including human development, human potential, staffing and human resource management. In his work on human capital, Schultz focused more on the problem of the quality of human capital than on the lack of physical investment, which is the biggest obstacle to socio-economic development in backward

countries. Therefore, investments in human capital lead to an increase in production. This theory initially focused on two main factors, such as education and health care.

Quantitative indicators of human capital are realized depending on a number of factors. The role of education in determining this indicator is quite large. In this regard, with the current level of education in the formation of human capital, investments in the development of education as important factors come to the fore. It is important to finance an education system capable of ensuring effective economic development within the limits allowed by the development of the country's economy [6].

DISCUSSION

In international practice, the term "human potential" has long been used to denote the state of socio-economic development of countries and regions.

Human capital, which has been regarded as a factor of educated, healthy and high-quality work since the late 1980s, is regarded as the main driving force of economic growth.

In the economic literature, different definitions of the concept of human capital are given. Summarizing these definitions, it is possible to express human capital as the added value created by the labor factor in the production process, depending on the level of knowledge, skills, experience, professionalism, health, which leads to more efficient use of other factors of production.

The concept of human capital comes from the economic model of "human resources capitalism", which emphasizes the need for sustainable and long-term investments in human resources development. This model reflects the fact that investments in human capital development affect national and international economic indicators, or, in other words, investments in people are considered crucial for the efficiency of the enterprise.

The human resources capitalism model asserts that productivity improvement and the main source of economic development, whether in the economic sphere or in the individual economy, are directly related to human potential and its effective use. Therefore, in our country there is a need to develop training systems that will lead to the growth of human capital in the future, as well as to create strategies that allow the full use of the potential of this resource.

Looking at international experience, we see that developed countries have been able to move from an economy of raw materials and resources, characterized as the first stage of economic development, to an economy focused on innovation, achieving the development of human capital. The USA and leading European countries are successfully improving their development based on the theory of human capital and can achieve the creation of their own competitive national economy [12]. The national human capital of developed countries, according to experts of international reputable financial institutions, is more than 70-80% of their national wealth. These countries allocate funds

from State budgets for the development of human capital by more than 2.5-3 times compared to other developing countries. All this indicates that at the present stage of economic development, the decisive role in the development of society is not played by natural resources, physical capital, industrial capital and labor in general, but by human capital with high productivity, forming intellectual and creative work. The adopted national priorities also cover very important issues from the point of view of this approach to economic development [8].

The idea that human capital can become the creative basis of national development is in constant search. Among the ideas explored in the framework of a broad public discussion in this capacity, the subject of wide discussion were the directions of civil society, democratization, conservatism, modernization, social justice, stability, patriotism, trust in the authorities and society, the responsibility of the authorities to society.

Life itself made it possible to reach a consensus on the priority of human capital development and the approval of such a direction as a national priority, which was facilitated by the technological downturn, the accumulation of negative changes in the reproductive behavior of the population and the outflow of human capital from the country [1].

In this context, the idea of human capital development has become not only the basis of development, adequate to the current situation in the world and the country, but also a successful ideological structure.

The category of human capital has been formed and continues to be formed as a result of the research of many researchers (Table 1).

Table 1. Contribution of representatives of the main scientific fields to the development of the category “human capital”

Scientific direction	Researchers	Contribution to the development of the category "human capital"
Classical political economy	William Petty (1623-1687)	Aggregate labor is part of the national wealth.
	Adam Smith (1723-1790)	The same person who is engaged in his own business can receive rent, profit and wages. Wages directly depend on the degree of complexity and high cost of the vocational education received.
	David Ricardo (1772–1823)	Labor has a natural and market price. The natural price of labor is determined by the ability of an employee to provide for himself and his family with his own labor, to pay for food, basic necessities and household items. The market price of labor is a payment that takes into account the relationship between supply and demand.
	James Mill (1806-1873)	The influence of moral and intellectual qualities of workers on labor efficiency is shown.

Marxism	Karl Marx (1818-1883)	Social aspects of labor relations; the dual nature of labor, both "abstract" and "concrete". Labor is represented as a special commodity having value and use value.
Schools of scientific management	Frederick Taylor (1856-1915)	The main goal of management is to ensure the maximum well-being of the entrepreneur in combination with the maximum well-being of each employee.
Theory of human capital	Theodor Schulz (1902-1998)	Human capital is considered a factor of production, which makes up three-quarters of the net national product.
	Gary Becker (1930–2014)	Human capital is formed through investments in people, including expenses related to education, industrial training, healthcare, migration, and the search for information about prices and incomes. Investments in human capital in the United States bring higher interest rates than investments in securities.

Source: Compiled on the basis of [1]

Socio-economic phenomena, such as human capital and human potential, along with their specific characteristics have much in common, which especially stems from the characteristics of human capital.

The role and place in the system of social and labor relations of a person as a subjective factor in the economy began to attract more and more attention of scientists. Various approaches to the study of the human factor, it seems possible to distinguish three main, politico-economic, dealing with the concept of "labor force" and its characteristics; technocratic, including concepts such as "personnel", "personnel", "workers"; anthropocentric approaches that take into account the concepts of "human resources", "human capital" and directly "human potential" (Fig.1) [3, p.].

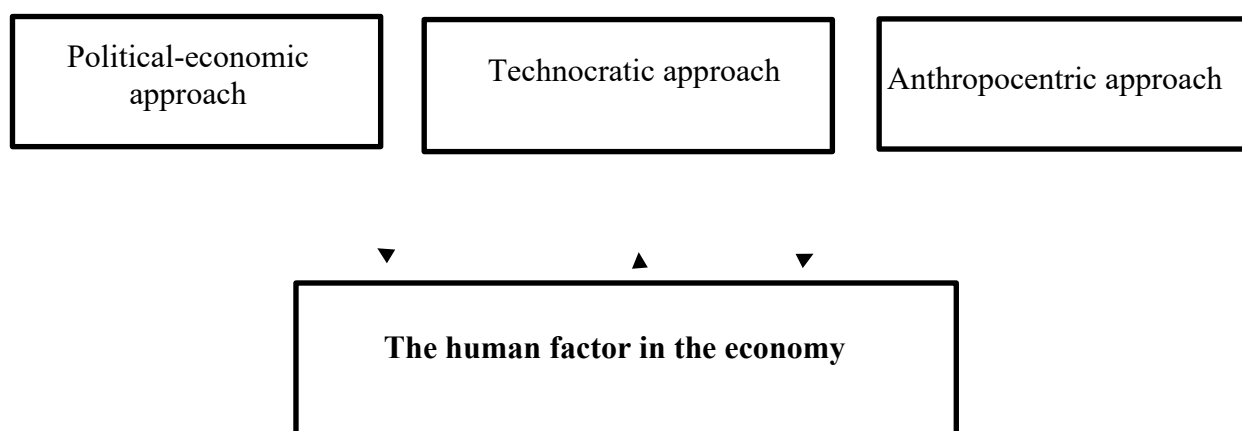


Figure 1. The main approaches to the study of the human factor

Source: Compiled on the basis of [3]

Thus, the first approach is based on the category of “ability to work”, interpreted in classical literature as an abstract “ability to work”, “a set of physical and intellectual abilities” possessed by a person and which ensure the improvement of his vital activity, which can function only in a certain system of industrial relations and is the main productive force of society, determining an element of productive forces. It is obvious that the definition of the category “labor force” is mainly of a materially significant nature, while other aspects of human potential are given much less attention than the labor force.

In the technocratic approach, researchers focus on such concepts as “personnel”, “staff” and “employees”. However, despite the fact that there are different opinions about the category in question, proponents of this approach emphasize the importance of bringing people together within one production system (enterprise) in order to achieve a common result. In the economic literature, the category of “personnel” in a broader sense is understood as “a person who is at the disposal of the enterprise and engaged in the work of the organization, as well as being part of the staff of the organization, but for various reasons (vacation, illness, infant care, etc.) the totality of all employees of the workforce who are temporarily absent in the workplace, performing various functions to achieve the set goal and development.” While the concept of personnel is explained as the main staff of the enterprise. The staff is divided into different categories depending on the functions performed: managers, specialists, service personnel, main and co workers. Workers from these categories (at manufacturing enterprises) are considered industrial and production personnel. A broader meaning is the concept of “employees”, which characterizes all subjects of labor law, individuals, all those who carry out activities under an employment contract. Specially this term is more often used in labor legislation, labor and collective agreements, local regulations of the organization and other documents.

The concept of the anthropocentric approach explains the leading role of man at all levels of the socio-economic system. The statement of the famous researcher V.O. Kelly is statement. “...modern economic realities require a broader, comprehensive understanding reflected in the concept of human potential is characteristic...”. The anthropological component of this approach reflects the fact that a person is a biological, social and individual (psychological) being.

Considering the study of a person as a subject of social and labor relations within the framework of an anthropocentric approach, one can meet different approaches in different periods of time. For example: in the 70s of the twentieth century, the main object of research was the category of “labor potential”, while the study of the needs and interests of people in the field of labor was relevant. In continuation of this, in the 70s and 80s, the concept of “human resources” appeared, where a person is treated as a public asset of society associated with a number of necessary conditions. In the mid-

80s, early 90s, the concept of “human potential” was formed, where the human factor is studied as a unity of physical and intellectual abilities. Since the mid-90s, the main object of research has been the category of “human capital”, which put forward the idea that the most effective investments in ensuring economic development are precisely investments aimed at developing human intellectual abilities. Since the beginning of the XXI century, the concepts of ”social capital” and ”intellectual capital” have become relevant. Social capital is explained by the fact that a person has the ability to establish social connections, which is considered one of the main factors in increasing individual and social efficiency. The concept of intellectual capital analyzes a person through the prism of social conditions for the realization of his intellectual abilities in order to generate income [7].

Intellectual capital is considered the main asset of any organization. Intellectual capital is not only science, but also the accumulation of experience, skills and internal connections that ensure the competitiveness of an organization in the market. It is also an Invisible set of assets that ensures the improvement of the results and competitiveness of the organization. It also includes knowledge, skills, experience, innovation and connections in the organization.

According to Ramazan, intellectual capital consists of five components: human capital, organizational capital (structural capital), technological capital, social capital and business process capital or client capital. Summarizing the existing literature, in our opinion, intellectual capital consists of six important components, which are shown in Fig. 2.

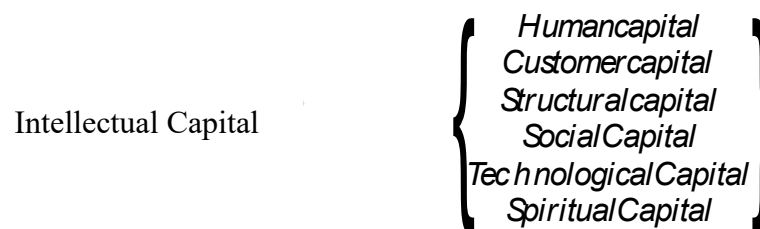


Figure 2. Integrated Intellectual Capital Model

Source: Compiled on the basis of [9]

In the article we will give a brief explanation about the components of intellectual capital. We will note one of the main components that is given in Fig.2 and is called human capital. Human capital is the heart of intellectual capital. This refers to the knowledge, competence, skills, abilities and innovations of the employee. It is noted that employees generate intellectual capital due to their competence, attitude and intellectual flexibility.

Consumer capital is also one of the most important components of intellectual capital. Consumer capital is mainly based on the relationship between an organization and its customers. It can be noted that it is based on the knowledge embedded in marketing channels and customer relationships that the organization develops in the course of doing business.

The structural capital of organizations is all non-human knowledge repositories, including databases, organizational charts, process guides, strategies, routines and policies indicating that structural capital is “what remains in the company when employees go home for the night.”

Social capital is an invisible resource based on certain norms and trust in relationships between people. Social capital provides equal opportunities in providing information and resources to all groups of the population, is based on common values, norms and requirements, depth and quality of relationships between people.

Indicators of the effectiveness of social capital include:

- Joint projects and initiatives;
- Mutual assistance and support;
- Mutual service and exchange of resources;
- Network cooperation and coordination of activities.

In the economic literature, the role of technological capital is highly valued. Fernandes et al. (2000) scientists argue that technological capital, which includes knowledge related to access, use of innovative production methods and product technology.

Spiritual capital is also one of the most important components of intellectual capital.

Spiritual capital is a combination of power, influence, spirit and knowledge that can be acquired through religion.

Intellectual capital is invisible assets that are not reflected in the financial statements, but have a fundamental impact on the final result. Financial capital is the means that an organization possesses for functioning and development [10].

The components of intellectual capital include:

- Intelligent personnel;
- Brand and reputation;
- Know-how or the secret of production;
- Design and innovation.

Let's look at each component in more detail to find out how these components work together to achieve business success:

Intelligent personnel are considered to be those persons who have high intellectual potential and help the organization to achieve a competitive advantage, improve the quality of work, develop,

innovate, etc. they have the opportunity to create many advantages in different areas. Therefore, companies strive to create comfortable working conditions that can ensure their development primarily by attracting personnel with high intellectual potential. To find a suitable candidate, the profiles and characteristics of the intellectual staff are determined, while taking into account important criteria - intellectual potential, motivation, professional knowledge and social skills. Along with this, mentoring is considered an important step to gain additional knowledge and experience from more experienced colleagues in order to ensure the rapid development of intelligent staff.

In order for intelligent personnel to work more efficiently, it is more appropriate for them to work at a high level of leadership. Because the career growth of intellectual personnel means that they establish regular and direct communication with other employees within the company, and as a result they instill new knowledge and skills, form new values. To motivate the continuity of activity (retention at work) of such personnel, it is necessary to recognize achievements (praise for any achievements), flexible work schedule (reasonable schedule, remote work, etc.). the provision of competitive wages and bonuses (wages should be organized in accordance with the quality of work and the potential of the employee), etc.

Brand and reputation are two important components of any successful business. A brand is a sign, symbol, design or name that distinguishes a product or service from the products or services of other competitors, is used to retain existing customers, attract new customers, improve reputation and increase customer loyalty. Reputation reflects the public's opinion about the organization's activities, products or services. A positive reputation gives an organization advantages such as attracting new customers, new business development opportunities and revenue growth. On the other hand, a negative reputation can lead to the loss of existing customers and the refusal of new ones to cooperate, a decrease in sales and the departure of talented employees from the enterprise.

Know-how is a unique methodology, confidential knowledge, etc. that can be used in business. Know-how includes various business elements, such as legally protected patents, hardware and software, and industrial design. The first step in the know-how process for creating a new and original product or service begins with exploring existing ideas through market research and analysis. At the second stage, the concept of ideas and prototypes is being developed, which may require several iterations and improvements before launching. Testing and evaluation is the last stage before launching. Here the effectiveness of the idea and the possibility of adjustments are evaluated. The creation and use of know-how can lead to great benefits, including improving production processes, reducing the time to get results, increasing business efficiency and competitive advantages.

Thus, it can be concluded that social capital plays a key role in achieving success in all spheres of activity, moving up the career ladder, building long-term relationships with reliable partners.

Innovation and design – Innovation is the main driving force for any of continued success. But the processes of design plays a big role in product or technological innovation. Design encourages thinking, development of creativity and talent in solving problems. This method makes it possible to find innovative solution used in the innovation process and develop prototypes more effectively. Innovation implementation can be completed quickly and effectively using advanced design technologies.

When design and innovation come together, all aspects related to work experience, functional and aesthetic quality of the product, customer experience are best reviewed, which helps to increase the reputation and revenue of the company. Partners acquire a profitable deep whole, and cooperation becomes more effective and expedient. It also improves the company's relationship with partners. The combination of design and innovation requires a number of necessary knowledge, a wide range of ideas and awareness. It is also important to take into account the dangerous situations that may arise in this process and be prepared for them [11].

There are many methods of measuring intellectual capital, such as the level of education of employees, the number of registered patents, the degree of goals achieved, etc. and they are all based on certain indicators.

The indicators obtained as a result of measuring intellectual capital can be used in determining the effectiveness of asset management, as well as in making strategic decisions on their development. Intellectual capital management involves the formation of a scientific culture, the systematization and structuring of information, the creation of a system of motivation for the development of intellectual capital, etc.

Formation of scientific culture: in order to create an effective intellectual capital management system, it is necessary to form a scientific culture within the organization that will guarantee high productivity, ensure the exchange of knowledge between employees and the integration of new employees into the company.

Systematization and structuring of information: for effective management of intellectual capital, it is necessary to systematize and structure it. At this stage, it is important to create a database and determine who is the “keeper” of this database.

Creation of a system of motivation for the development of intellectual capital: motivated employees are, without exception, a guarantee of the success of the organization and effective management of intellectual capital. In this regard, it is extremely important to create incentive and motivation systems that will contribute to the active development of innovative knowledge within the company.

The role of intellectual capital in various types of organizations - from small startups to large corporations - is explained not only by its competitiveness, but also by the construction of its development strategy and the achievement of specific goals.

Effective management of intellectual capital gives the company a number of advantages:

Maintaining a competitive advantage-effective management of intellectual capital allows an organization to ensure customer satisfaction and improve the quality of products and services, which leads to an increase in income and strengthening its own competitive advantage.

Improving labor productivity-effective management of intellectual capital allows an organization to increase the level of labor productivity by implementing mutually beneficial knowledge exchange between its employees and, as a result, achieving minimization of mistakes made in the performance of assigned tasks.

Increasing the value of the organization-effective management of intellectual capital allows you to attract investors and partners based on the analysis of the activities of the main competitors, thereby increasing the value of the organization as a whole.

CONCLUSION

The development of human capital is a single, objectively defined socio-economic process that manifests and functions in the dialectical unity of anthropological, socio-economic, cultural-historical, economic, organizational and managerial aspects of a person and society. At the same time, the methodology of the theory of human capital development has gone through a complex and long path of development, which was mainly accompanied by an increase in the number of employees, the working time fund and labor productivity. The information society in the process of socio-economic development brings a new way of life to the economic, social, cultural and political spheres. The importance attached to people and investments that improve the quality of people's lives have become a key moment of change, creating a new way of life. Intellectual potential outstrips physical potential all over the world. The days were gone when countries created added value by creating employment opportunities for workers with physical potential. The right step is to include new generations in economic life by providing services such as education, health, etc. The information society needs educated people who will understand the information it produced by it. And in the future, no country will be able to maintain its economy without investing in a person. It is important to individualize the approach to each intellectual structure in order to take into account human potential and characteristics.

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