

**Zinaida Zhyvko, Olha Podra,  
Anastasiia Volnykh**

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**Theoretical Principles of Human  
Capital Investment**

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# THEORETICAL PRINCIPLES OF HUMAN CAPITAL INVESTMENT IN INFORMATIONAL SOCIETY

PROF. ZINAIDA ZHYVKO, PH.D.

*Lviv State University of Internal Affairs, UKRAINE*

ASSOC. PROF. OLHA PODRA, PH.D.

*Lviv State University of Internal Affairs, UKRAINE*

ING. ANASTASIIA VOLNYKH, M.A.

*National University "Lviv Polytechnic", UKRAINE*

## ABSTRACT

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Under conditions of information society development more and more attention is paid to the human capital conception research and its investments efficiency determination, because a high level of individual capabilities, which were created in the process of investing, provides a worker competitiveness, flexibility and realization in economic activity, stimulates subsequent development and self-perfection under conditions of the information society formation. The development of the "human capital" concept, basic approaches to its determination and modern development features in domestic and foreign scientists' research works are researched in the article. The process of a human capital formation is analyzed, general and excellent lines with contiguous concepts are selected. The concept of investments in human capital is explored, investment mechanism of human capital development under condition of information society transition is analyzed in the article. Possible consequences of such investments for main investment process participants are analyzed. It was found out that investments must be done on the early stages of human potential formation on the basis of education, medical providing, humanitarian and cultural development, and as a result there is a formation of high-quality components, which provide the higher level of competitiveness and mobility at the labour market. The existent classification of investment subjects was extended, and added to them participants of market infrastructure, to which were included the financial

and credit institutes, non-state pension fund, insurance companies, venture funds, accumulation funds, recruiting agencies.

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## INTRODUCTION

In the conditions of transformation changes and country socio-economic development ways of increase search more attention is paid to the human capital theory research. A great importance has the establishing of connection between the processes of investing in a human capital, new technologies production and the long-term economy growing providing, due to inventions and innovations implementation in production.

Indisputable is a fact that agrarian and industrial social formations have gradually transited and dominated the developed countries, creating postindustrial society or information society. It is characterized by economic relations development based basis of the comprehensive use of information by means of profound application of the acquired knowledge and growth of a personality role, as a carrier of this knowledge.

## MATERIALS AND METHODS

In the history of economic opinion of the last decade one of the most prominent events become a human capital theory development, the founders of which were T. Schultz and G. Becker, human capital investment efficiency was researched by J. Kendrick, L. Thurow, J. Heckman and other foreign economists.

Well-known Ukrainian scientists devoted works to human capital theory research, in particular L. Semiv, S. Vovkanych, E. Libanova, V. Kutsenko, O. Hrishnova, V. Heiets, L. Shevchuk, M. Azhazha, V. Antonyuk, O. Zakharova. Information economy development is investigated in works of F. Machlup, M. Castells, J. Akerlof, Y. Masuda, D. Bell. Ukrainian scientists A. Kolodyuk, L. Melnyk, L. Fedulova, A. Chukhno and other also research the problem of information economy and information society.

In spite of the human capital theory presents scientific achievements, the problem of the probed category formation and development under conditions of information society and necessity of its investment recreation providing is not studied enough.

Taking into account the resulted unsolved parts of problem, there is anecessity and actuality of the theoretical approaches research of the essence determination of information society human capital on the basis of existent approaches analysis and processes of its formation.

## RESULTS

An information society transition determines the modern type of economy, where the knowledge capital more than physical, plays a major role in providing of successful changes on the way of state innovative development, actualizes the usage of the intellectual and innovative factor in community development, stimulates development of intellectual work, introduction of the newest technologies, inventions, knowledge-intensive products, programs, advanced now-how in the public production.

Postindustrial society formation and information revolution require including to the production process all employee abilities concerning perception, study and judgment of information. Automation, network forms of production organization and management, force out a person from a direct production and require high development of intellectual, creative, social and organizational capabilities of a person.

For this reason more and more attention is paid to the human capital conception research and its investments efficiency determination, because a high level of individual capabilities, which were created in the process of investing, provides a worker competitiveness, flexibility and realization in economic activity, stimulates subsequent development and self-perfection (self-improvement) under conditions of the information society formation.

The economic idea classics researched the human role in a production process, the influence of person's high-quality characteristics on economic development and at the same time did not reach a conclusion, that a person can be referred to the "capital" category (tabl. 1).

TABLE 1. THE EVOLUTION OF THE HUMAN CAPITAL THEORY RESEARCH BY FOREIGN SCIENTISTS

Period	Author	Author Interpretation
Labour force expense interpretation		
Classical political economy: 18–19 <sup>th</sup> century	William Petty [1]	The author considered that the human intellectual capabilities influenced on the level of person's income, and the cost of man equated twentyfold earnings that he is paid
	A. Smith [2]	The author considered that formation of labour skills, knowledge, capabilities which he examined as elements of the fixed assets, required capitalist's additional investments, which were equated with other capital charges
	D. Ricardo [3]	The author detailed the labour force production structure and marked that the level of workers education influenced on the country development level
Tradition of interpretation the human knowledge and abilities as a capital		
Neoclassical political economy: the end of 19 <sup>th</sup> century – the beginning of the 20 <sup>th</sup> century	A. Marshall [4]	The author did not refer a person to capital, at the same time examined human knowledge and productive capabilities as one of capital components
	F. List [5]	Asserted that knowledge and perfection capabilities were a capital accumulation, and a mental capital was a basis of a national development
	J. Mill [6]	Asserted that a man was not a capital, but knowledge and experience, that implemented in labour activity could be referred to the capital
	Alternative interpretation of a man as a capital	
	L. Walras, I. Fisher, J. McCulloch [7, p. 48]	Used the extended approach to the determination of a man as capital and attributed to the human capital not only received knowledge and capabilities but also physiology, view-cultural, psychological and public characteristics

Integral interpretation of human capital on the basis of rational optimizing behavior of individuals		
Chicago Economic School 50–60s. of 20 <sup>th</sup> century	T. Schultz [8]	The author was the first who created the concept of human capital, the value of which erected to knowledge and capabilities development that received in the education and preparation process
	G. Becker [9]	The author probed a human capital investments efficiency and features of making decision about their realization, divided human capital to general and specific
	J. Mincer [10]	The author probed individual profits in dependence of his knowledge and capabilities development by the use of salary built-in function for determination of norms of return from investments in education
70s of 20 <sup>th</sup> century	J. Kendrick [11]	Considered a person as a capital component, that is why to human capital investments except investments in education, included healthcare investment. Divided human capital into material and not material
	E. Denison [12]	The author grounded the role of human capital investments in the economy growth, proved that such investments gave in five higher return in compared to material, and their recoupment considerably depends on the increase of labour force education level

Theory of filter		
70–80s of 20 <sup>th</sup> century	P. Wiles [13], R. Layard [14]	Considered that education played a selective (informative) function, but not productive, was the mean of selection, because more gifted people got higher education levels which in same time could serve as a signal for an employer about potential capabilities and productivity of a worker. Scientists asserted that the labour productivity growth did not depend on education, but depended on the personal qualities and talents
Endogenous theory of human capital development		
90s of 20 <sup>th</sup> century – 2012	R. Lucas, R. Solow, P. Romer [15]	Scientists put human capital in a production function, formation of which takes place under act of education which provides the increase of the labour productivity during all labour activity

Human capital research become an actual scientific problem under condition of information society and knowledge economy development. That is why, logically, the list of determinations and approaches to its interpretation constantly will grow as its role strengthens in economic and social development. The existed approaches to human capital determination are effectively used and operate in industrial society, at the same time, it is necessary to notice that under condition of information society development, the role of human capital that is formed on investment basis, becomes more important and requires working out of new mechanisms of its development and recreation as human capital becomes a key factor of future socio-economic development.

As a result of origin and distribution of human capital conception in economic science also changed approaches to the interpretation of a term “capital”. Ideas that capital is only a physical asset gradually begin to be replaced by the idea, that a capital is any asset physical or human which is able to bring a profit in the future.

In our opinion, productive capabilities, experience, abilities are the capital not only because of ability to generate the future streams of profits and not because they are performed due to reducing of current consumption, but because they can provide possibility of profit earning as a result of implementation in economic activity. For this reason human capital becomes the factor of production, which brings a profit (income) as a result of the effective use of knowledge, skills, experience, mobility which were received as a result of investments of the basic subjects. More often we can observe an equation of human capital with a term human potential because of general sources of their formation and development (Fig. 1).

However, human capital is only a part of human potential, which transforms into an asset as a result of plugging in labour activity and its separate components capitalizations, that allows to get the planned effects.

Complication of essence of “human capital” concept rises a problem of a category mess and frequent equation with contiguous concepts, that is why we offer to consider and define differences between them (table 2).



FIG. 1. HUMAN CAPITAL FORMATION PROCESS

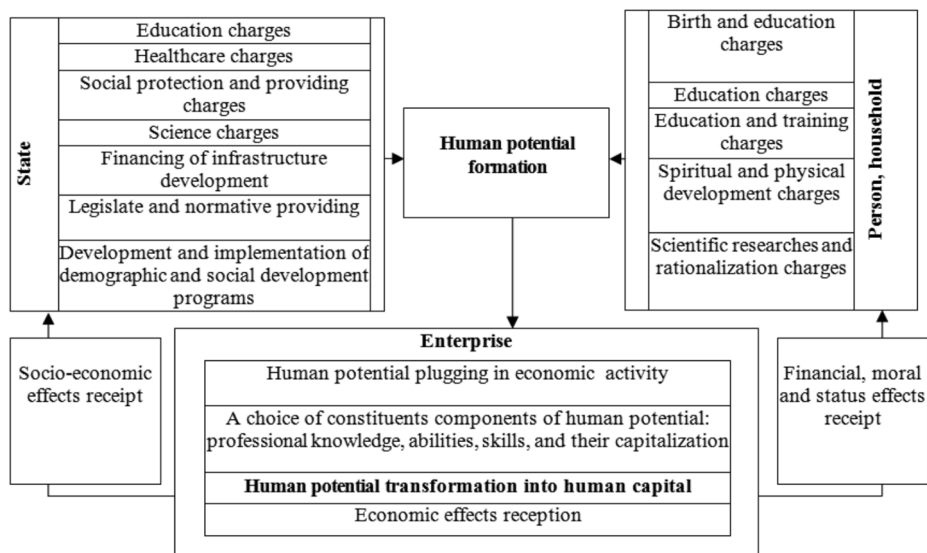


TABLE 2. HUMAN CAPITAL ESSENCE AND BASIC DIFFERENCES BETWEEN CONTIGUOUS CONCEPTS

Concept	Description	Content difference
1	3	4
Human potential	The essence and component elements of human potential is determined as a volume of human capabilities in general, no matter plugged them in a financial or immaterial production or not, and the possible use term is determined [16]	Human potential can transform into a human capital in a result of implementation at the labour market which will provide capitalization of the received knowledge

<p>Work force</p>	<p>The essence of work force as a capacity for labour, which is formed on the basis of physical and spiritual components that can be plugged in a production process is determined. It was set that, to the work force included work capable persons from 16 to the retirement age accepted in a country, employed or unemployed persons [17]</p>	<p>A category does not represent the investing aspects in individual productive capabilities development</p>
<p>Labour resources</p>	<p>It was found out that labour resources category is a part of work capable population, that by the level of physiological, psychological and mental development can be plugged in economic activity. It was set that to the labour resources belong working persons to 16 years old and after retirement age, do not belong invalids of the 1 and 2 groups, persons who get a pension on privilege conditions [18]</p>	<p>Despite of a human capital labour resources do not foresee the possibility of additional cost creation in the process of implementation at the labour market as a result of high-quality features capitalization</p>

Labour potential	Labour potential is defined as a category of resource, measure of incarnate high-quality characteristics, formed on the basis of natural information, education, which are included to the economic activity with the purpose of current and future necessities satisfaction. Labour potential is classified by the level of person, enterprise, society [19]	The researched labour potential components are examined as potential possibilities of labour activity, and the human capital components are really used in economic activity with the purpose of financial, social or status effect reception
Intellectual capital	The features of formation, usage and structure of an intellectual capital are defined. Its role in additional cost creation and of competitive edges formation is defined [20]	An intellectual capital unlike human can move away from a carrier through the objects of intellectual property

Thus, human capital differs from previous economic categories that is not only characterize individual potential capacities in labour or enterprise activity realization, but determines the real productive capabilities use which provides possibility of additional earnings or profit reception.

This capital is unique among other resources, which has update, perfected, develop ability.

According to the theoretical aspect of modern paradigm human capital forms on the expense basis and includes three levels. The first level is the level of the state – financing of education, healthcare, public welfare standard and legal regulation, that all provides extensive and intensive recreation, socio-economic effects achievement.

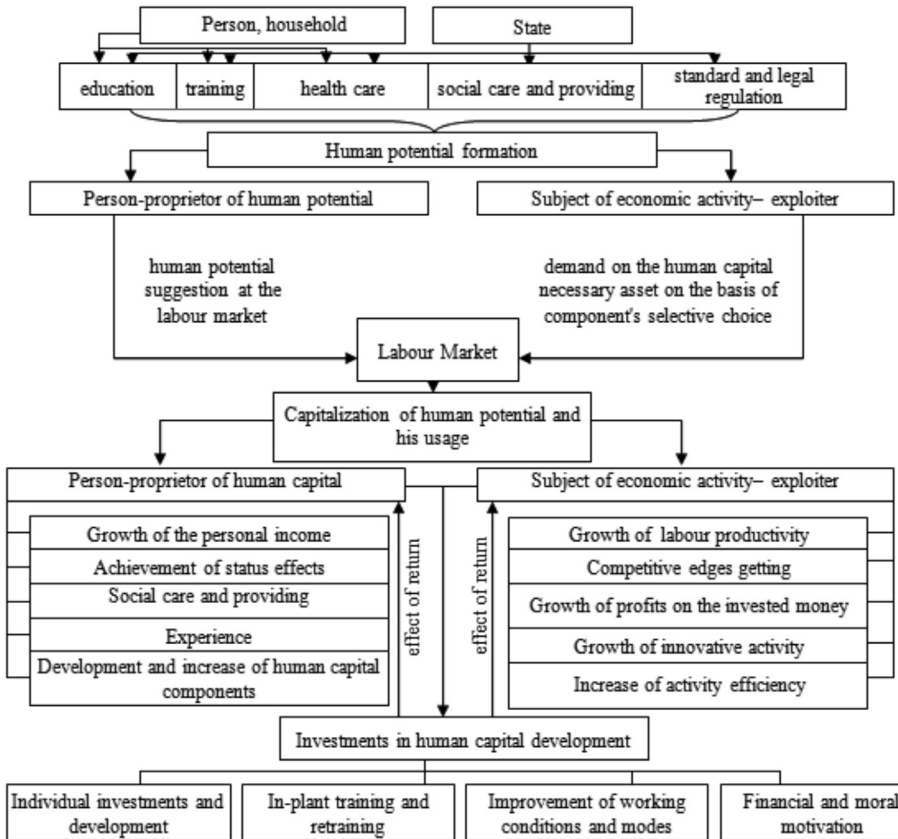
The second level is the level of enterprise or economic activity subject, which provides human capital recreation on the basis of necessary facilities receiving for existence as a result of knowledge, abilities and experience realization in economic activity. The third level is the level of a person or

individual who pursues the purpose to get high earnings and social status. At the same time, taking into account the primary purpose of the state socio-economic development providing, it is possible to draw conclusion, that state measures are directed on the human potential formation, but not a capital (Fig. 2).

In most cases person's activities are directed on the human potential recreation on the basis knowledge enlargement without understanding an essence of individual asset, which is able to create an additional profit and provide the receipt of competitive edges at the labour market and social status achievement.

Only the subjects of economic activity are oriented at the human capital management, provide the converting (transformation) of a human potential to a human capital, on the basis of selective choice of necessary components, provide human capital investment recreation, with the purpose to get an additional business-asset on the basis of which to achieve the productivity and competitiveness increase effects, economic activity efficiency and innovative activity increase, to do further periodic in-plant training under conditions of technical, technological and innovative development growth with the purpose to provide market abilities increase for more difficult economic processes realization and human capital loss risk diminishing.

FIG. 2. A TRANSFORMATION PROCESS OF HUMAN POTENTIAL IN CAPITAL



Source: authors' own research

Such understanding of human capital has a principle value, because gives an opportunity to examine it as a proof and constantly reproduced economic phenomenon that is incarnated in people.

On this stage of research it is possible to come to the conclusion, that an individual human capital underlays human capital of subjects of economic activity and state. It should be noted that elements of individual human capital are not inseparable, when a human capital of enterprise is separable and with its loss structural, organizational and client capitals depreciate automatically.

Successful development of each of human capital types helps to considerable synergistic effect receipt, which is expressed in national human

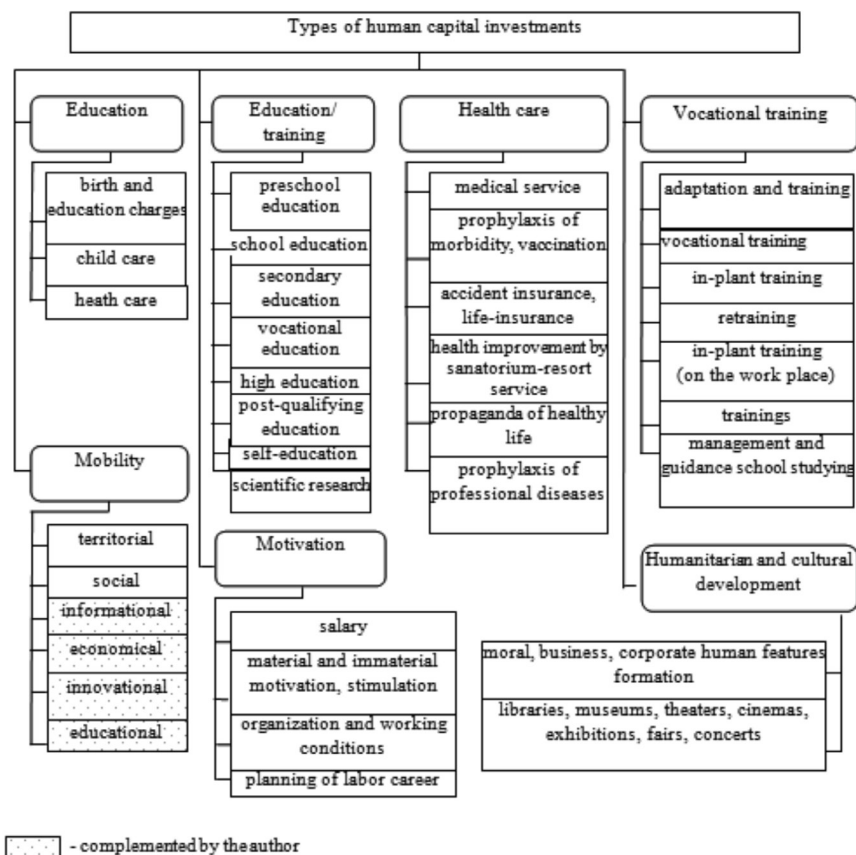
capital growth and enrichment and also human capital of subjects of economic activity.

It is necessary to say that a human capital acquires the special actuality, exceptionally under conditions of information economy existence, that started in the end of 20th century and related to the industrial society crisis, basic resources of which were capital, limited natural resources, raw materials and energy, labour intensive and capital-intensive technologies.

That is why scientists pay more attention to the research of human capital formation on the investment base. Investments in a human capital are more frequently divided into three basic types: education, health care and mobility [21, s. 556]. However, with a conception development, directions of investments are broadened.

To our opinion, directions of a human capital investments must represent the features of development under conditions of information society, for this reason investments must be carried out on the early stages of human potential formation on the basis of education, medical providing, humanitarian and cultural development, and as a result there is a formation of high-quality components, which provide the higher level of competitiveness and mobility at the labour market and, as a result, of knowledge and capabilities capitalization (Fig. 3).

FIG. 3. TYPES OF HUMAN CAPITAL INVESTMENTS



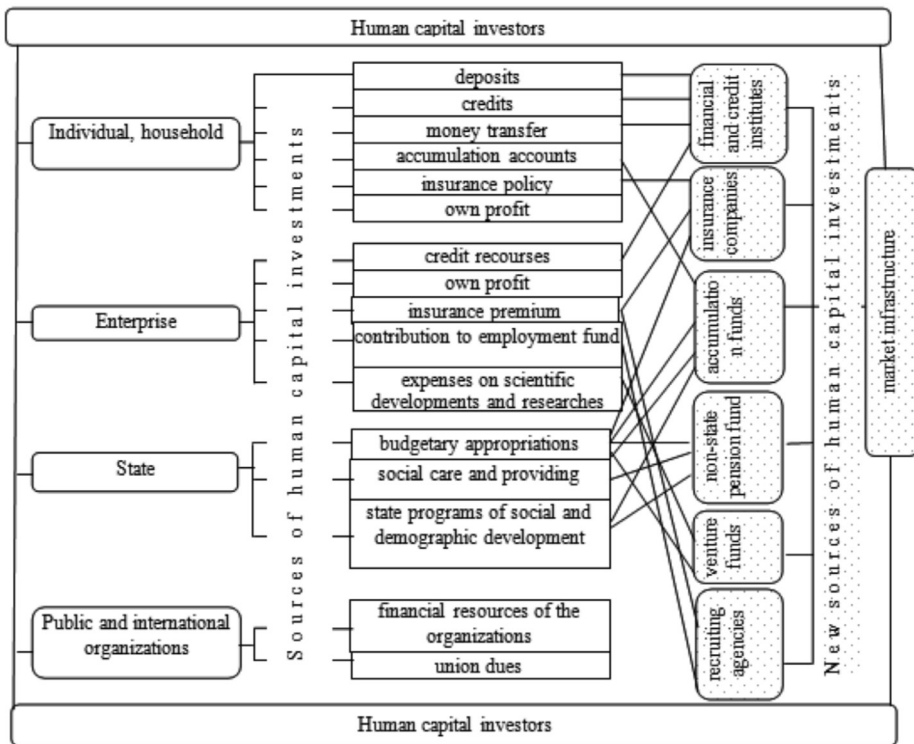
Made by authors on the basis of researches [14, 22, 23, 24, 25]


Subjects of economic activity which accumulate a specific human capital on the basis of professional preparation and motivations, are forced to increase their payment, but anyway investment is advantageous, because creates possibilities for more difficult economic operations realization.

Presented human capital investments types are impossible without basic subjects of investment process. On the whole, the most domestic researchers of human capital conception investment aspect [22, 24, 26, 27] select five basic human capital subjects-investors: state, individual, household, enterprise, public and international organizations (Fig. 4).

To our opinion, according to information society development conditions it is necessary to extend existent classification of investment subjects, and add to them participants of market infrastructure, to which we should include the financial and credit institutes, non-state pension fund, insurance companies, venture funds, accumulation funds, recruiting agencies which are used to be full-fledged participants of economic activity that, that is why we can include them to the human capital investment mechanism. Such participants (subjects) of market infrastructure provide a possibility of usage of new investment tools for a heap and development of the individual human capital and human capital of economic activity subjects.

FIG. 4. CLASSIFICATION OF HUMAN CAPITAL INVESTORS



 - complemented by the author



The offered subjects of market infrastructure can hypothetically become one of the main elements of the investment mechanism because insurance companies, accumulation funds, non-state pension funds, venture funds, financial and credit institutes and recruiting agencies, are institutes of accumulating and effective capital investment in a heap, preserving and recreation of a human capital, in the conditions of information society formation.

## CONCLUSIONS

The modern approaches to a “human capital” concept enabled to develop own vision of the category, define features of its formation process and development characteristic features under conditions of information society, which is connected with hardwires, methods, technologies production for new knowledge creation. The concept of investments in human capital is explored, investment mechanism of human capital development under condition of information society transition is analyzed in the article. Possible consequences of such investments for main investment process participants are analyzed. It was found out that investments must be done at early stages of human potential formation on the basis of education, medical providing, humanitarian and cultural development, and as a result there is a formation of high-quality components, which provide the higher level of competitiveness and mobility at the labour market.

A human capital becomes a valuable resource, and investments in it becomes a source of individual future profit and enterprise profit as a result of human potential capitalization and at the same time such investments have social efficiency, which is expressed through the increase of life standards, population stratification and social tension diminishment, possibility of self-realization and high social status acquisition.

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**AUTHORS:**

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**Zinaida Zhyvko** – Professor, Doctor of science (Economics), Head of the Department of Management, Lviv State University of Internal Affairs, Economic Faculty

**Olha Podra** – Ph.D (Economics), Economic Faculty, Lviv State University of Internal Affairs

**Anastasiia Volnykh** – Institute of Computer Technology and Metrology, National University „Lviv Polytechnic“

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