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## Human capital development in a creative economy

### Розвиток людського капіталу в креативній економіці

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#### Abstract

The industrial economy is gradually disappearing. It is replaced by a creative economy, the basis of which is creative human capital. The study aims to define creative human capital's value in an economy based on intellectual activity. Methods. The research used general scientific methods: the method of comparison, statistical analysis, assessment of dynamic structural shifts, as well as index and analytical methods. The economic research methods were also used in this work; the regression analysis was carried out by the economic-statistical method. Economic and mathematical modeling defined the influence of creative economy indicators on the GDP level per capita. Results. As a research result, the meaning of the category "human capital development in the creative economy" is established, and its basic elements are defined. It was determined what role creative economy human capital plays. Creative sector value in

#### Анотація

Індустріальна економіка поступово зникає. На зміну їй приходить креативна економіка, основою якої є креативний людський капітал. Метою дослідження є визначення ролі творчого людського капіталу в економіці, побудованій на основі інтелектуальної діяльності. Методи. У дослідженні використано загальнонаукові методи: метод порівняння, метод статистичного аналізу, метод оцінки динамічних структурних зрушень, а також індексний та аналітичний методи. У роботі також використано економічні методи дослідження; регресійний аналіз проводився економіко-статистичним методом. Економіко-математичним моделюванням визначено вплив показників креативної економіки на рівень ВВП на душу населення. Результати. У результаті проведеного дослідження встановлено сутність категорії "розвиток людського капіталу в умовах креативної економіки" та визначено її

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countries' development was also described in the study. The analysis of the number and structure of the innovative sphere enterprises has allowed defining the features of the new economy structure type in the European countries. The study established the relative share of the population working in the creative industry. Characteristics of human capital development in European countries are presented in illustrations. Interaction between human capital and the creative economy has been defined by carrying out the regression analysis. According to the study results, the main components of the evolution and protection of human capital in a fast-growing branch of the world economy – the creative economy – have been established.

**Keywords:** Creative economy, human capital, regression analysis, intellectual activity.

## Introduction

The creative industries are growing in importance, both nationally and internationally. Their basis is formed by cultural activity, which is developing at a rapid pace. Its development contributes to the fact that industrial society is becoming a thing of the past. It is replaced by a new generation of knowledge and intelligence. As a result, a new component of the economy, the creative one, is developing. This new economy segment is important because it is based on intellectual capital. Three types of intellectual capital are distinguished:

- human capital;
- consumer capital;
- organizational capital.

The main characteristics of human capital are creativity, experience, knowledge, moral values, cultural environment, and state of health. Human capital forms the capital of the industry. In turn, industry capital, which can be structural or organizational, determines the development of the creative sector and its position in the market. Human capital is an extremely valuable resource that influences competitiveness, economic growth, and efficiency. It characterizes individuals' productive abilities, personal qualities, and motivation in the creative industries. At the same time, human capital contributes to increasing labor productivity and thus impacts added value. In this regard, the formation and application of human capital in the

основні елементи. Визначено, яку роль відіграє людський капітал креативної економіки. Також було охарактеризовано значення креативного сектору в розвитку європейських країн. Аналіз кількості та структури підприємств інноваційної сфери дозволив визначити особливості нового типу структури економіки в країнах Європейського Союзу. Дослідженням встановлено відносну частку населення, зайнятого у креативній економіці. Особливості розвитку людського капіталу у країнах представлені на малюнках дослідження. Взаємодія людського капіталу та креативної економіки визначена шляхом проведення регресійного аналізу. На основі результатів дослідження, встановлено основні складові розвитку та збереження людського капіталу у швидкозростаючій галузі світової економіки – креативній економіці.

**Ключові слова:** креативна економіка, людський капітал, аналіз, інтелектуальна діяльність.

creative economy is an urgent issue that needs further study.

## Literature Review

International economic integration, globalization of social development, and internationalization are global external factors that have caused the intellectualization of social development. In turn, the intellectualization of society has led to the creative economy development. The labor market has become more transparent thanks to information and communication technologies. New educational opportunities have opened up for potential workers. They gain new knowledge and learn to be more mobile in their professional space. However, the essential quality today is creativity, criticality, originality, and the ability to make quick decisions. These are new characteristics that today's employers value. Moreover, in the new business environment, there is a fierce struggle for specialists with such qualities (Kuznetsova, 2016). The "creative industry" concept is a set of economic activities to apply or create information and knowledge (Hesmondhalgh, 2002).

There are several points of view regarding the concept of "human capital". According to Becker (1964), one of the founders of the human capital theory, it is a repository of knowledge mixed with skills and stimulation. Any country's scientific progress and technological

development are impossible without adequate human capital (Diebolt & Hippe 2019). Florida (2002), the “creative class” theory founder, believes that many factors (economic, cultural, and social) influence the development of creativity. He also believes that creativity depends on the social environment. The so-called “creative class” predominantly belongs to the younger generation or people who uphold its values. They innovate not only in their jobs but also in their daily lives. In addition, the “creative class” members are characterized by flexibility, mobility, education, independence, and recreational and social activity. In addition, they are interested in street culture (Florida, 2002). At the same time, Throsby (2014) draws attention to the peculiarities of the creative industries’ contribution to gross domestic product (GDP). The fact is that creative goods cannot be valued in monetary terms. However, despite this, they have a significant intangible value. According to the author, the creative industry has a structural construction based on classical cultural activities. It includes musical, literary, performing, and visual arts (Throsby, 2008).

Such researchers as Harrison and Huntington (2000) study the impact of cultural differences on a country’s development. In their view, cultural differences are the main reason many countries lag. The culture of some countries hurts their economies. For this reason, it is necessary to develop arts and culture and increase the country’s human capital. The main features of human capital and its role in the creative economy are discussed in Kalenyuk and Kuznetsov (2020). According to Versal & Tereshchenko (2020), human capital is the leading creative economy factor. The level of science and education influences its development in the country. The model of multi-level innovation policy, where the creative economy is considered in human capitalization, was developed by Shaulska, Karpenko & Doronina (2021).

The policies of some countries (especially those with transition economies) are designed with creative industries in mind. Such policies can often be found in research (Mellander et al., 2013). A model of one of them was proposed by researchers such as Gasparin and Quinn (2020). This model is called Innovation and Creativity in Transition Economies (INCITE). It consists of four components: human resources, education, infrastructure, freedom of expression, and intellectual property rights. Human capital formation is often considered in subsectors of the creative economy. Such subsectors include

design (Korobaničová, 2016), batik (Sutisna & Saudi, 2018), and architecture (Korobanicova & Pacutova, 2015). Researchers determining the peculiarities of human capital formation in this way have concluded that its determinant factor is education.

The critical role of creative skills and their dependence on creative industries is emphasized by Sanchez-Serra (2014). Many works of this author are devoted to human capital and its role in developing the creative economy. This issue was studied by Munteanu (2015), who concluded that the more businesses work in the creative industries, the higher the economic progress. Some researchers (Comunian, Faggian & Jewell (2014) and Abreu & Grinevich (2014) have analyzed creative human capital in detail.

Schultz (1995) notes that in many ways, the development of human capital depends on investments. It also applies to natural talent. By investment, he means education in school, training in the workplace, and measures to promote health. According to the researcher, investing in human capital contributes to overcoming poverty in the country. Londar, Lytvynchuk & Versal (2020) suggested the most critical investment areas in human capital.

Considering the above, we can conclude that most scholars involved in studying human capital confirm the need for investment in education and health care. Moreover, according to most of them, investing in human capital is correlated with developing a creative class and, accordingly, with an innovative economy. However, despite a considerable quantity of research devoted to human capital, the question of its development and preservation in conditions of a creative economy remains not entirely solved.

## Methods

The experience of human capital forming and development in conditions of the creative economy in the European Union is one of the most successful in the world. That is why it was chosen as the basis for the study. It was used to conduct data from the Eurostat website (Eurostat 2019a; 2019b; 2019c; 2019d). In particular, the study analyzed the following indicators:

- the number of businesses operating in the creative industry;
- the number of people working in the creative economy sector;
- life expectancy of the population;

- Gross domestic product per capita (2014–2019).

The data were analyzed using both simple (descriptive statistics) and more complex methods (regression analysis). Their use made it possible to determine how the creative economy affects how human capital is developed and preserved. The influence of each independent variable on the dependent variable changes is determined by conducting a regression analysis. It is based on the regression equation.

The regression analysis conducted in the study was conducted in several major steps:

1. Formation of the initial data required for the analysis;

2. Selection of the regression model of the linear type;
3. Regression analysis, for which Excel tools were used.

## Results

It is necessary to study the trends in the functioning of the creative industry to diagnose the development and preservation of human capital in a creative economy. It is also necessary to analyze the peculiarities of human capital in the countries of the European Union. Finally, a regression analysis is required to determine the relationship between the development of the creative economy and human capital (Tables 1 and 2).

**Table 1.**

*Input data required for the regression analysis*

Period	GDP per capita, USD (y)	Companies in the creative economy, units (x <sub>1</sub> )	Employment in the creative economy, pers. (x <sub>2</sub> )	Life expectancy of the population, years (x <sub>3</sub> )
2014	38026,8	1101722	68117	80,8
2015	38862,18	1088088	6833,5	80,5
2016	39573,58	1119280	69641	80,9
2017	40592,56	1142268	71817	80,9
2018	41384,25	1182257	72706	81

**Table 2.**

*Intermediate data obtained from the regression analysis*

Regression statistics	
Multiple R	0,95
R-square	0,91
Normalized R-square	0,65
Standard error	780,0
Observations	5

**Table 3.**

*Intermediate data obtained from the regression analysis*

	df	SS	MS	F	Significance F
Regression	3	6541683,6	2180561,2	3,58	0,36
Residue	1	608465,1	608465,15		
Total	4	7150148,8			

**Table 4.**  
Intermediate data obtained from the regression analysis

	Coefficients	Standard error	t-statistics	P-value	Lower 95 %	Upper 95 %	Lower 95,0 %	Upper 95,0 %
Y-intersection	- 563156,9	1314998,4	-0,428	0,742	-17271795	16145481,9	-17271795	16145481,9
Variable X <sub>1</sub>	0,026	0,0353	0,735	0,596	-0,42	0,475	-0,42	0,47
Variable X <sub>2</sub>	-0,048	0,082	-0,582	0,665	-1,096	0,1	-1,0	0,99
Variable X <sub>3</sub>	7131,024	16782,459	0,425	0,7442	-206110,3	220372,3	-206110,3	220372,3

The equation of regression of linear type will have the following form:  $y = -563156,97 + 0,026 \times x_1 - 0,048 \times x_2 + 7131,024 \times x_3$ .

The obtained results confirm that the increase of gross domestic product per capita depends on the number of enterprises working in the creative industry, as well as on the life expectancy of the population. The more enterprises work in this sphere and the higher life expectancy in the studied region, the higher the level of GDP. Also, the regression analysis results show an inverse relationship between the efficiency indicator and the level of employment in the creative industry. The so-called econometric model describes this economic dependence. It is evidenced by the coefficient R-value, denoting multiple correlations. 91 % of the results show the correlation dependence between the indicators, and the rest 9 % – on other factors.

According to the results of the analysis, we can conclude that the main components of the development and preservation of human capital in the creative economy are the following:

- effective policy and support of the state aimed at the development of the creative industry;
- the creation of hubs, clusters, and business incubators working in the creative industry;
- integration of the creative economy;
- globalization of the creative economy;
- investment in the development of the creative industry;
- creation and development of associations and professional networks.

Implementing these recommendations will contribute to the development of human capital in the creative economy by minimizing the negative impact of the external environment.

### Discussion

The main sources of the creative economy are culture and creativity, which are inextricably linked to the creative industry. Therefore, focusing on them helps improve the skills of professionals whose work is related to creativity and sustainable value formation.

According to the study, the creative sector's influence on the countries' economic development was established. Today all countries of the European Union aspire to a creative economy. According to Dindire (2012) and the norms of the European Commission in the strategy "Europe 2020", human capital is one of the main advantages of developed countries. Today it acquires new values, so the need to invest in this area is increasing.

The creative industry content, laid down by Hesmondhalgh, D. (2002), is disclosed in the proposed economic category "human capital development in a creative economy". The value of the personal qualities of professionals is increasing day by day. In its turn, the creative industry allows us to realize them to the full extent. Many researchers confirm the value of human resources. Kuznetsova is no exception, believing that creative abilities are the most valuable today (2016). In this regard, society faces new challenges in education: forming a creative personality instead of the traditional transfer of knowledge. The importance of science and education quality in developing a creative economy is also confirmed by Londar (2020).

According to Becker (1964), human resource efficiency affects scientific and technological progress. The same conclusion is obtained from the study conducted. Its results, to a certain extent, are practically the same as those of Kalenuk & Kuznetsova (2020), who believe that human capital is the driving force of the creative economy. In addition, the creative economy is one of the promising areas of economic activity.



It is based on human capital, which is an inexhaustible resource. The country's economy largely depends on the development of the creative industry. It contributes to reducing unemployment and opens up new opportunities for employment, which can be used by all people, regardless of sex and age. As we know, in recent years, the growth of unemployment in many European countries was caused by the Covid-19 pandemic. However, in addition to negative social phenomena, Jílková (2021) notes some positive aspects. We are talking about flexible work benefits for many people, such as the ability to work remotely and on a convenient schedule. It has had a positive impact on human capital. In this regard, the issues of its development and preservation are relevant and need further study.

Cultures of different countries are constantly developing and interacting with each other. In our opinion, borrowing cultures contribute to their development and improvement. As a result, society gets such a phenomenon – “cultural dumping” that, according to many researchers, is one of the conditions of globalization. For example, in recent years, the so-called “McDonaldization” (Kabanda, 2015) has attracted more and more attention.

### Conclusion

Humans' capital value in developing the creative economy has changed significantly. Today, it is characterized by a high-efficiency level of intellectual capital usage. Due to this, society produces business ideas, contributing to the profitability of the creative economy sector. Furthermore, developing a creative economy opens new possibilities for the population. Namely, it considerably expands the borders of its employment and self-realization.

The human element is the power of creative economic growth. It is an inexhaustible resource, which ensures its functioning. In turn, the creative economy opens new opportunities for fully realizing human potential – creative, intellectual, and innovative. As a result, the creative sector's share in the structure of the developed countries is rapidly growing. In particular, we are talking about the countries of the European Union, which are leaders in developing the creative economy. Continuous culture support and investment in human capital development contribute to this leadership's preservation.

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