

The Impact of Cultural and Digital Products on the Economic Development of Post-industrial Countries

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Abstract

The aim of the article is to determine the scientific and theoretical foundations and quantitatively assess the impact of creative industries on economic growth in post-industrial countries. The research used an interdisciplinary approach that combines the methods of structural-analytical, comparative and correlation analysis, systemic generalization and elements of economic and mathematical modeling. The information base was provided by statistical data from UNCTAD, UNESCO, World Bank, DCMS and national statistical offices for the period 2015–2023. Based on the results of an analytical study it is proven that the creative economy is a system-forming component of the post-industrial development model, in which creativity, digitalization and intellectual resources are the main factors of production. The Creative Contribution Index (CCI) was proposed and tested, which allows quantitatively measuring the share of creative industries in GDP creation. Using the example of Great Britain, a high level of correlation was found between indicators of the development of the cultural sector, digitalization and growth of national income. Analysis of global trends showed a stable increase in the export of creative services and the strengthening of the role of Europe and North America as global leaders in the field of creative production. The results of the study confirm that the creative economy is becoming not only an economic phenomenon, but also a socio-cultural mechanism for innovative development and increasing the competitiveness of post-industrial countries.

Keywords: Correlation, Creative Goods, Creative Sector, Creative Services, Digitalization, Integral Creative Industries Index.

Introduction

In the current context of global economic transformation, creative industries are gaining strategic importance as one of the key drivers of growth in post-industrial economies. The economic paradigm of the 21st century is shifting from material production to intangible assets – knowledge, intellectual property, innovation and digital technologies. In this context, cultural and digital products are shaping the new architecture of national economies, contributing to the growth of gross domestic product (GDP), increasing labor productivity, expanding employment in the service sector and developing cross-sectoral innovation linkages.

Despite the growing role of the creative sector in the global economy, there are a number of problems that complicate its full measurement and integration into the economic policy system. First, there is a lack of

unity in defining the boundaries of the concept of “creative industries” and the criteria for their statistical identification, which leads to differences in methodologies for assessing the contribution to GDP (1, 2). Second, rapid digitalization is changing the structure of production and consumption of cultural products, while making it difficult to assess the economic value of intangible assets, in particular copyrights, digital content and online services (3, 4). Third, most post-industrial countries lack a systematic policy for monitoring the economic impact of cultural and digital industries, which limits the possibilities of predicting their development and integrating them into macroeconomic planning (5, 6). An additional challenge is the dynamics of the labor market in the creative economy, where non-standard forms of employment, the gig economy and digital

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entrepreneurship are spreading. Such changes require new approaches to measuring productivity, shaping the tax base and social protection of workers. At the same time, creative industries are increasingly seen as a catalyst for regional development, social inclusion and cultural identity, which extends their impact beyond the purely economic dimension (7). Thus, the problem lies in the theoretical and methodological uncertainty and insufficient empirical basis for a comprehensive analysis of how cultural and digital products shape GDP in post-industrial countries, as well as in the lack of unified approaches to the quantitative and qualitative assessment of their economic contribution.

The aim of the study is to scientifically substantiate the role and mechanisms of influence of creative industries – in particular, cultural and digital products – on the formation of gross domestic product (GDP) in post-industrial countries, as well as to determine conceptual, methodological and analytical approaches to the quantitative and qualitative assessment of their economic contribution.

As a result of the review of scientific and theoretical approaches to the interpretation of the essence of Creative Industries Economy (CIE) has established that this concept is a logical continuation of the post-industrial economy, in which knowledge, intellectual capital and digital creativity become the main resources (8).

The concept of creative economy was formed at the turn of the 20th and 21st centuries, when knowledge, innovation and creativity began to be considered as the main driving forces of economic development. As Scientific studies indicate that the creative economy is an “economy of ideas” in which intellectual property becomes the main source of added value creation (9). Leading scientific studies emphasize that cultural products have not only market but also social value and therefore their contribution to the well-being of society goes beyond monetary dimensions (10).

From a theoretical perspective, the creative industries economy is interpreted as a cross-sectoral system of activities based on the creation of a symbolic, cultural or digital product, as well as on the commercialization of intellectual property. It combines the features of cultural, educational and digital economies, which is characteristic of post-industrial societies, where material production is given way to intangible capital.

Despite active study, the concept of the creative industries economy remains multidimensional and has no single boundaries. In the scientific literature, its content is determined by a number of factors. The paper argues that the first factor is the sectoral structure, which includes art, design, fashion, architecture, publishing, music, audiovisual media and in modern conditions - digital platforms, video games, software, creative entrepreneurship and the gig segment (11). The second factor is the degree of integration of technologies: digitalization, big data, artificial intelligence and platforms change the nature of the creative product and the ways of its distribution (12, 13). The third factor is the spatial and territorial context, as the impact of creative industries varies depending on regional digital readiness, infrastructure and innovation ecosystem (14).

It is emphasized that the creative economy operates at the intersection of culture, technology and business and its development is determined by the interaction of creative clusters, human capital and digital infrastructure (15). It is noted that in the digital age, creative industries become one of the main drivers of economic growth, provided that effective policies are in place to support, finance and form a creative ecosystem (16). Researchers emphasize that creative industries are areas of activity based on creativity and intellectual capital, which are commercialized through the market for cultural and digital products (17). At the same time, researchers emphasize the problem of the lack of uniform legislative and statistical standards, which complicates comparative analysis between EU countries.

It has been proven that creative industries are a significant factor in the economic development of post-industrial countries, but their contribution to GDP is determined by the level of productivity, the structure of the sector and the effectiveness of state support policies (18). Research results confirm that the concentration of creative activity, the development of innovation infrastructure and the number of employees in the research and development (R&D) sector have a statistically significant positive impact on GDP growth in EU countries (19). This indicates the decisive role of creative industries as drivers of economic development.

It is emphasized that creative industries and digital technologies act as catalysts for structural

transformations in post-industrial economies, creating new sources of added value and increasing the competitiveness of national economies (20, 21). Thus, the creative industries economy is formed at the intersection of knowledge, culture and technology, becoming a systemic factor in the modernization of post-industrial societies.

Methodology

The methodological basis of the study was the coverage of creative industries as a complex socio-economic phenomenon that combines economic, cultural and digital dimensions of development. To reveal the issues of the article, an interdisciplinary approach was used to understand the essence of the creative economy through the prism of a set of production processes, as well as a living system of interaction of creative potential, innovative technologies and social values. The study was based on the principles of systematicity, evolution and comparability, which made it possible to consider the development of creative industries in the logic of long-term transformations. To reveal the economic content of the processes, structural-analytical and comparative methods were used, with the help of which key trends in the formation of added value of the cultural and digital sectors in the leading post-industrial countries of the world were identified – in particular, the USA, Great Britain, Germany, the Netherlands, Ireland and Japan.

An important component of the study was correlation analysis, which allowed us to trace the relationships between macroeconomic indicators, the volume of creative industries, the cultural sector and the level of digitalization. The results of the analysis reflect a harmonious relationship between economic growth and the development of the creative potential of society, which indicates the growing role of creativity as an economic resource.

To ensure comparability of data from different international sources, indicators were harmonized by converting statistical values to common currency and time units, unifying classification categories and processing missing values using linear interpolation or extrapolation methods based on historical trends. This allowed integrating different data sets into a single CCI estimation model without losing representativeness and reliability.

Particular attention was paid to the development and testing of the Creative Contribution Index (CCI – Creative Contribution Index), which integrates economic, cultural and technological indicators into a single analytical model. The index is calculated based on data from UNCTAD, UNESCO, World Bank and UK Department for Digital, Culture, Media and Sport (DCMS) for the period 2015–2023, which ensured the representativeness and comparability of the results. The choice of the period 2015–2023 is due to several structural stages of the digital transformation of the world economy. Starting from 2015, there has been an active scaling of digital platforms, the growth of the global market for creative services and the integration of big data and artificial intelligence technologies into production processes. The period 2020–2021 reflects the shock of the COVID-19 pandemic, which accelerated digitalization and changed the patterns of consumption of cultural products, while 2022–2023 is characterized by a phase of recovery and structural adaptation. Thus, the studied time interval covers both a phase of stable growth and periods of transformational change. CCI allowed to identify not only the economic effect of the development of creative industries, but also the socio-cultural impact, which is manifested in an increase in the level of innovation, employment and quality of life.

To ensure the operationalization of theoretical concepts in the macroeconomic measurement system, they were transformed into quantitative indicators integrated into the system of national accounts. In particular, the category “economic contribution” is converted into indicators of the share of creative industries in GDP, gross value added of the sector and volumes of exports of creative goods and services; “cultural development” – into incomes of the cultural sector and indices of population participation in cultural practices; “digitalization” – into the share of digital technologies in production, ICT spending and volumes of digital services; “innovation” – into the number of startups, patents and venture investments; “social effect” – into employment in creative professions and indices of human capital. Thus, each conceptual block has an empirical dimension, which allows it to be integrated into the assessment of the contribution to GDP through indicators of gross value added and the multiplier effect.

The combination of quantitative and qualitative methods has allowed us to create a comprehensive picture of the creative economy as a space where economic rationality interacts with human imagination and technological progress is combined with cultural meanings. This approach has allowed us not only to quantitatively measure the contribution of creative industries to GDP, but also to reflect their essence as a driving force of humanized post-industrial development.

To assess the relationship between the development of creative industries and GDP, Pearson correlation coefficients were used, which allows measuring the linear relationship between variables. The significance of the correlations was assessed at the $\alpha = 0.05$ level and the data were normalized using the minimax scaling method to bring all indicators to the interval 0–1, which ensured the correct integration of heterogeneous values within the CCI.

Results

The international regulatory framework for promoting the development of the creative economy is formed by a number of key documents, including UN General Assembly Resolution 78/133 (2023) “Promoting the Creative Economy for Sustainable Development” (22), UNCTAD Creative Economy Programme (23), UNCTAD Convention on the Protection and Promotion of the Diversity of Cultural Expressions (24) and the UK Standards (25), covering the sub-sectors of audiovisual production, design, advertising, fashion, digital games, music and publishing. These instruments establish the creative economy as an important tool for inclusive growth, innovation and cultural

diversity, integrating it into global sustainable development strategies. Their implementation creates the institutional prerequisites for the formation of competitive creative sectors in post-industrial economies.

From the perspective of GDP formation in post-industrial countries, the creative industries economy acts as a strategic sector that provides not only direct value production, but also multiple effects on other areas of activity through the transfer of innovations, digital business models, creative clusters and cultural identity. Research by scientists Kyiv School of Economics shows that increasing investment in creative industries has a greater effect on economic growth than simply increasing consumption of products in this industry (26). A report emphasizes that the restoration of the hospitality and tourism industry in Ukraine should be based on the introduction of innovative digital technologies, the active involvement of cultural capital and the development of a modern service model – which directly correlates with the idea of generating GDP through cultural and digital products in post-industrial countries (27).

The structural nature of creative industries economy (CIE) means that its impact on GDP and employment strongly depends on the degree of digital maturity, institutional support, international integration and local ecosystem. The concentration index of the global market for exports and imports of creative goods, shown in Figures 1 and 2, reflects the level of dominance of individual countries in shaping global flows of creative products and the degree of diversification of this market (28-31) (Appendix A).

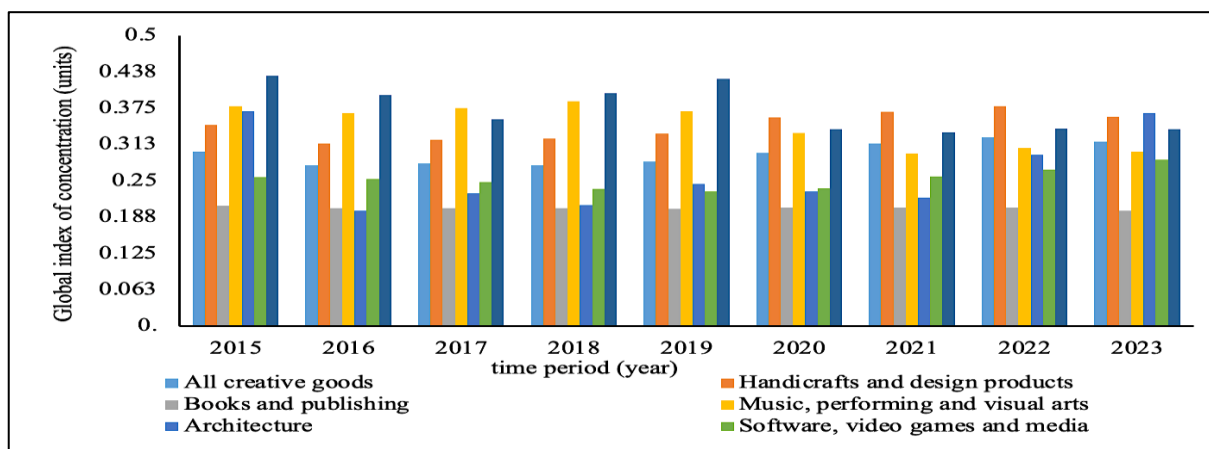


Figure 1: Global Index of Concentration of the Market for Export of Creative Goods by Type (2015-2023)

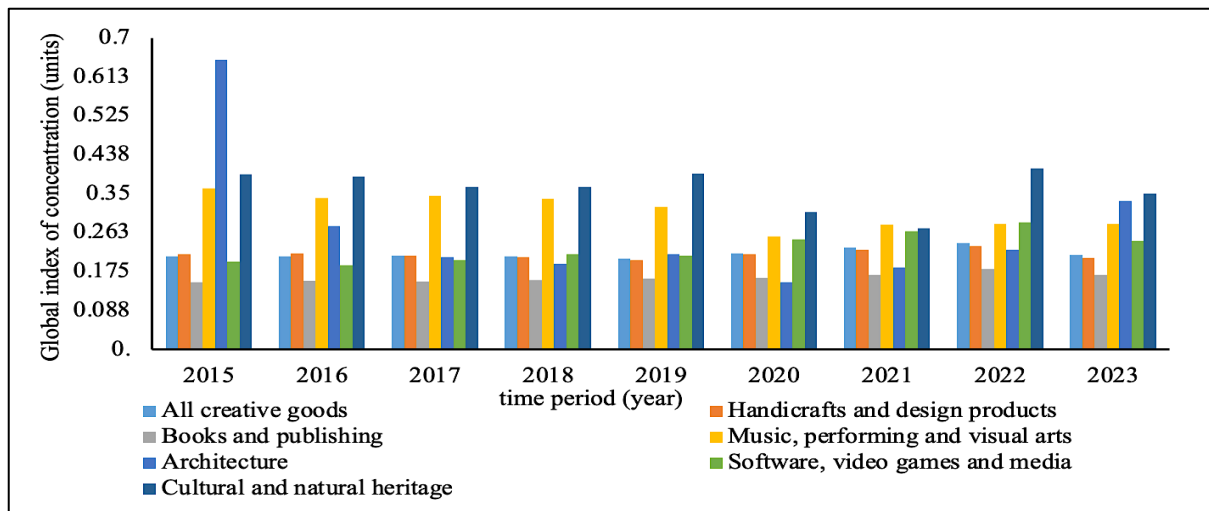


Figure 2: Global Index of Concentration of The Market for Import of Creative Goods by Type (2015-2023)

The results of the analysis show that during 2015–2023, the markets for creative goods remained moderately concentrated, demonstrating a tendency towards stability with minor fluctuations in individual sectors. In the export segment, the average concentration level for all creative goods ranged from 0.28 to 0.33, which indicates the absence of excessive monopolization and at the same time confirms the presence of leading production centers. The highest indicators were in the categories “Cultural and natural heritage” (up to 0.43 in 2015) and “Manufacturing of handmade and designer products” (up to 0.38 in 2022), reflecting the concentration of unique cultural and craft competencies in a narrow range of countries. At the same time, “Books and Publishing” remains the most diversified direction (indicators around 0.20 throughout the period), indicating a more even presence in the market. The growth of the index in the field of software, video games and digital media (up to 0.29 in 2023) indicates a gradual centralization of digital content production around leading technology hubs.

of imports of creative goods. The overall index remained at 0.21–0.24, indicating sufficient geographical dispersion of consumption of creative products. The most concentrated was the architecture market, where the indicator in 2015

reached 0.65 and subsequently decreased sharply, which may be due to the cyclical nature of large projects and their dependence on individual institutional customers. The software, video games and media sector demonstrated a gradual increase in concentration (up to 0.28 in 2022), reflecting the dominance of a few global suppliers of digital products and platforms.

The results obtained indicate that the structure of the global market for creative goods combines features of high specialization and selective centralization, especially in areas where the innovative and cultural component is decisive. For post-industrial economies, this means that GDP growth is largely associated not only with export volumes, but also with positioning in global value chains, where creativity, digitalization and cultural capital act as strategic assets (Appendix B). Therefore, supporting the development of creative clusters, digital infrastructure and intellectual entrepreneurship becomes a key prerequisite for ensuring sustainable economic growth and increasing the global competitiveness of states.

The main share of the gross value added of the world’s creative economy comes from the post-industrial countries of North America and Europe, as shown in Figures 3 and 4.

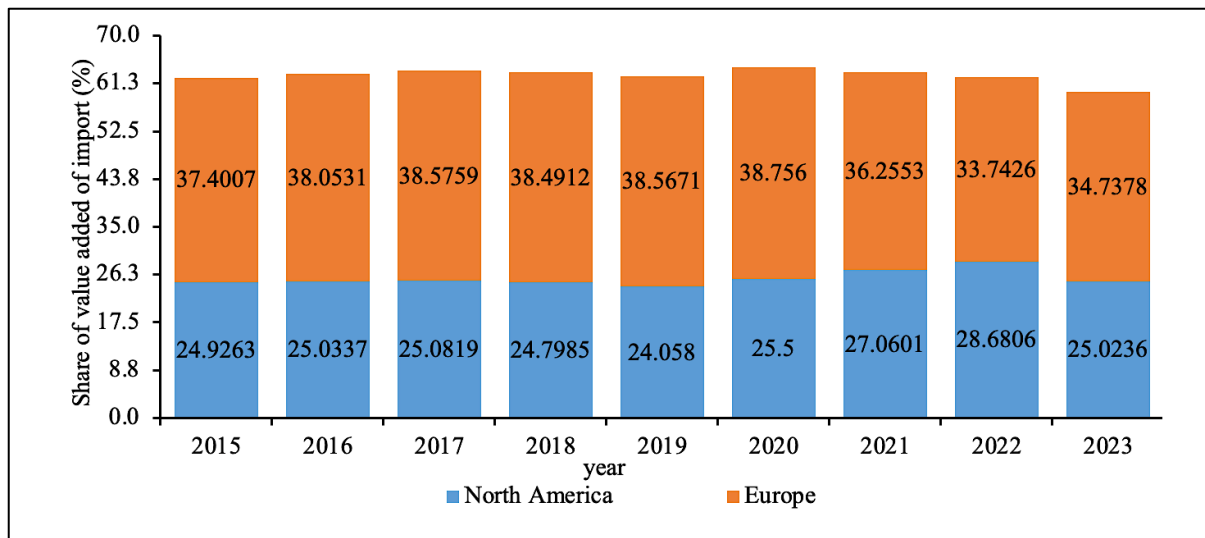


Figure 3: Share of Gross Value Added of World Trade (Import) in Creative Goods by North American and European Countries, % (2015-2023)

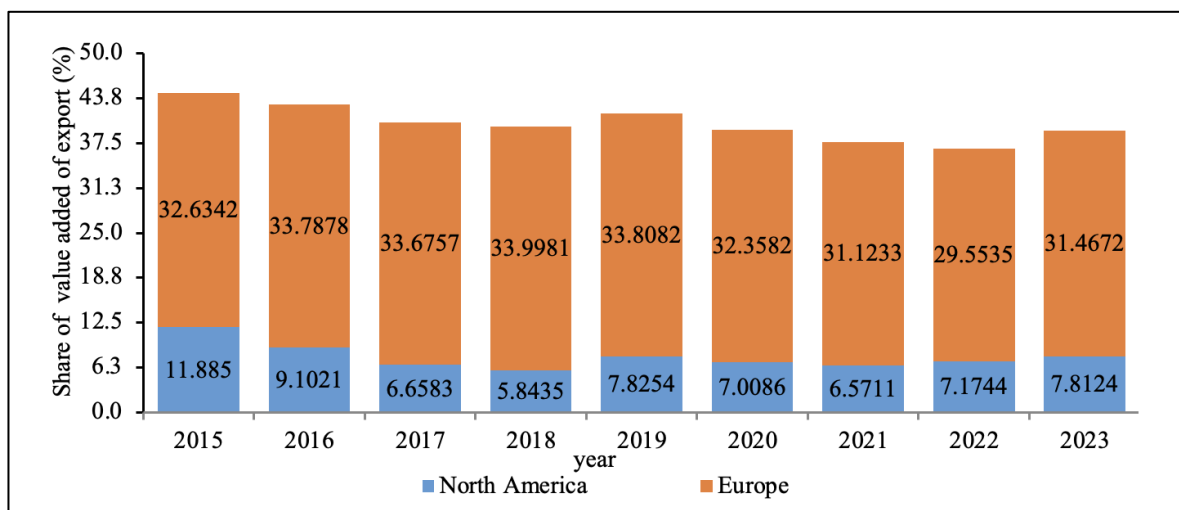


Figure 4: Share of Gross Value Added of World Trade (Export) in Creative Goods by North American and European Countries, % (2015-2023)

Analysis of the dynamics of the share of gross value added in world trade in creative goods and services indicates the strengthening of structural differences between post-industrial regions, in particular Europe and North America (Appendix C). In the creative goods segment, Europe consistently holds leading positions, accounting for an average of more than a third of world imports (34–39%) and almost a third of exports (30–34%), which indicates a developed infrastructure for the production, processing and distribution of cultural and digital products. North America, on the other hand, demonstrates relative stability in the field of imports (24–28%), but its export potential remains lower – at 6–12%, which indicates the predominance of domestic consump-

tion of creative products over foreign trade, as shown in Figure 5.

In the creative services sector, the trends are even more pronounced: Europe’s share of global exports increased from 50.3% in 2015 to 53.4% in 2023, while North America’s share decreased from 25.6% to 18.8%. This means that European economies are more effectively integrating the creative sector into the GDP structure through the development of digital content, design, media, programming and intellectual services. North America, on the other hand, is characterized by a gradual reorientation of creative activities towards the domestic market and an increasing role of intangible assets in creating added value (Appendix D).

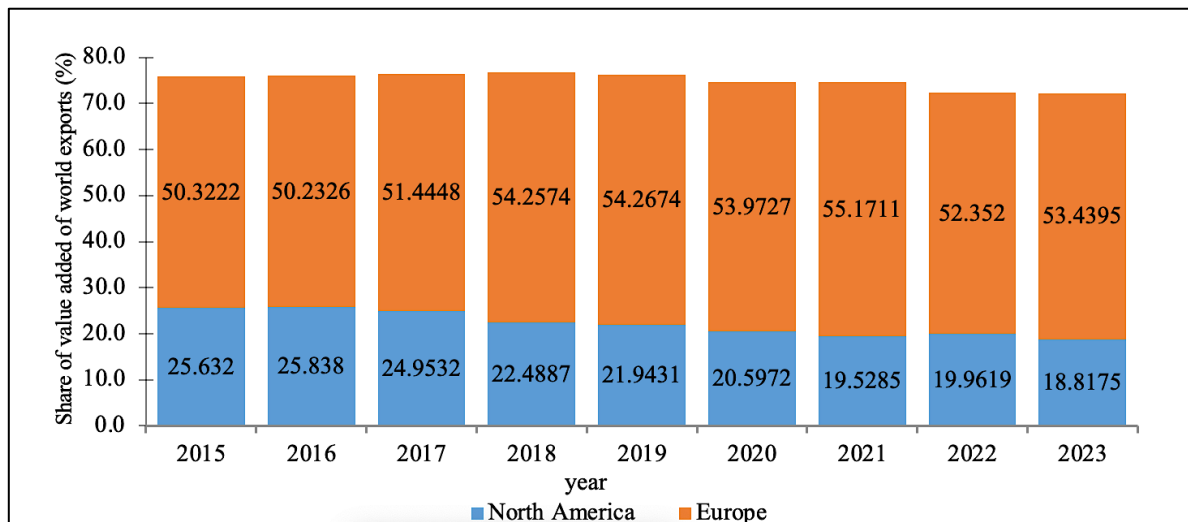


Figure 5: Share of gross value added of world exports of creative services by countries of North America and Europe (2015-2023)

Thus, the data obtained show that cultural and digital products are becoming one of the determining factors in the formation of GDP in post-industrial countries, acting not only as an economic but also as a civilizational resource for development. The European model of the creative economy shows more stable dynamics and deeper institutional integration, while the North American model demonstrates flexibility and superiority in the field of innovation, but at the same time a decrease in export activity (32). This emphasizes

the need for a comprehensive policy to support the creative industries as one of the main sources of sustainable economic growth in the global digital environment.

To gain a deeper understanding of the impact of the creative sector on economic development, we examine the relationship between the volume of exports of creative goods and services and the gross domestic product (GDP) of selected post-industrial countries, as shown in Table 1.

Table 1: Correlation Coefficients of the Impact of Exports of Creative Goods and Services on the GDP of Individual Post-Industrial Countries

Countries	GDP (Billion USD)	Export of Creative Goods (Billion USD)	Export Of Creative Services (Billion USD)
United States	1	0.7783	0.9773
United Kingdom	1	-0.1992	0.8619
Netherlands	1	0.8740	0.4007
Ireland	1	0.9711	0.9842
Japan	1	-0.3235	0.0644
Germany	1	0.7469	0.9646

The presented correlation from Table 1 coefficients reflects the degree of dependence between these indicators and allow us to identify the extent to which creative activity is integrated into the economic system of countries with a developed innovation infrastructure and demonstrate that creativity is becoming one of the leading drivers of modern economic growth.

At the same time, it should be emphasized that correlation analysis allows us to identify the strength and direction of the statistical relationship between indicators, but does not prove the presence of a direct causal effect. The results obtained indicate the structural interde-

pendence of the development of the creative sector and macroeconomic dynamics, however, establishing causality requires the use of regression models with lag variables or panel econometric analysis, which may become the subject of further research. To assess the statistical reliability of the obtained correlations, a p-value was calculated for each coefficient. All significant coefficients have $p < 0.05$ and 95% confidence intervals confirm the stability of the results. Additionally, robustness testing was performed by removing extreme observations (outliers), which showed the stability of the coefficients and confirmed the reliability of the

conclusions regarding the relationship between the development of the creative sector and GDP. The data show that the highest level of correlation between exports of creative services and GDP is observed in Ireland [0.9842], Germany [0.9646] and the United States [0.9773], which indicates a close relationship between the development of digital, information and cultural services and economic dynamics. The United Kingdom and the Netherlands are also characterized by a positive, albeit somewhat weaker, relationship. In contrast, Japan recorded low or even negative coefficients, which can be explained by the specifics of its economic structure and orientation towards domestic innovations. Overall, the results confirm that it is creative services, rather than goods, that

are the most significant factor in the formation of GDP in most post-industrial economies, emphasizing the transition of the global system from material to the development of knowledge and intellectuality.

As shown in the regional analysis of the UK, the pandemic has led to a significant drop in production value and employment in the creative sector, highlighting the vulnerability even in highly developed economies (33, 34). Let us consider the dynamics of the main indicators of the development of the UK creative economy in 2010–2023, as shown in Figure 6. The study was conducted based on official statistics, reflecting changes in GDP, gross value added of the sector and export volumes of creative industries by type.

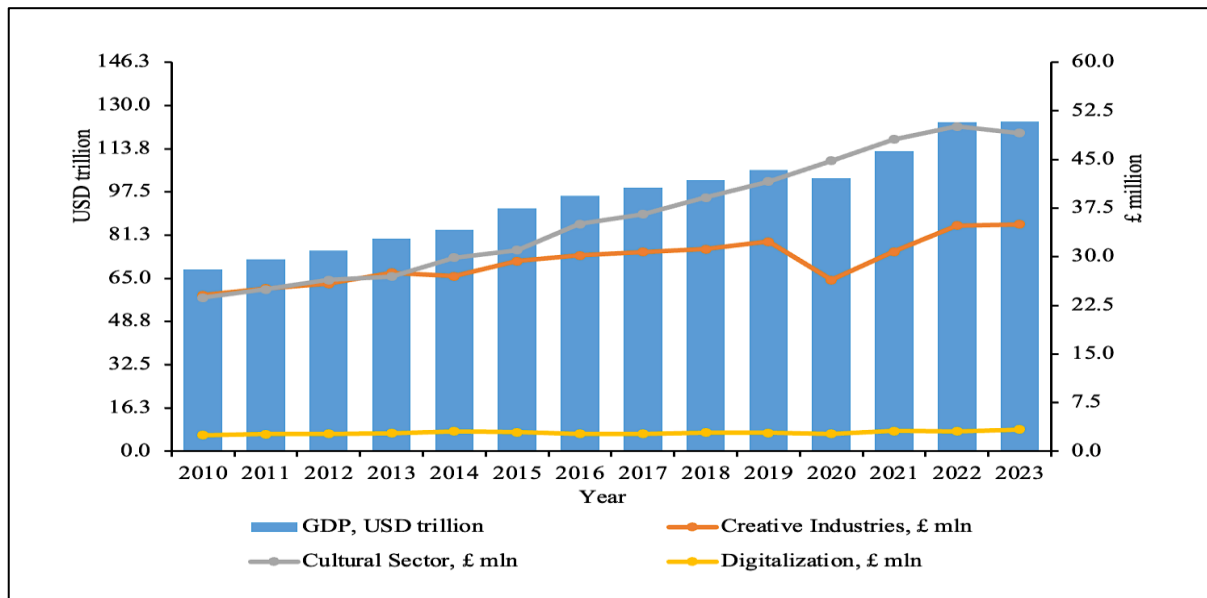


Figure 6: Dynamics of Gross Domestic Product and Main Indicators of the Development of the Creative Economy of the United Kingdom (2010-2023)

The analysis in Figure 6, demonstrates steady growth in the industry over the period under review, with a slight decline in 2020 under the influence of the COVID-19 pandemic and a

further recovery after 2021, which indicates the high adaptability and resilience of the creative sector of the UK economy as described in Table 2.

Table 2: Matrix of Correlation Between GDP and the Development of the Creative Industry in the United Kingdom

	GDP (USD trillion)	Creative Industries, (£ million)	Cultural Sector, (£ million)	Digitalisation, (£ million)
GDP, USD trillion	1			
Creative Industries, £ million	0.731652376	1		
Cultural Sector, £ mln	0.722036623	0.913954084	1	
Digitalisation, £ mln	0.671842951	0.975925903	0.812329453	1

The correlation matrix of GDP on the development of the creative industry in the UK demonstrates a clear and uniform picture of strong relationships

between the macroeconomic result and individual components of the creative sector – the cultural sphere, creative industries in general and

digitalization (35). The correlation coefficients shown in Table 2 allow us to draw several cultural and digital products shape GDP in post-industrial countries”.

First, the relationship between GDP and the Creative Industries” is noticeably strong ($r = 0.732$), indicating a strong positive association: as the creative industries grow in pounds sterling, there is a corresponding increase in gross domestic product. A similar, slightly weaker, but still pronounced correlation is observed between GDP and “Cultural Sector” ($r = 0.722$) and between GDP and “Digitalization” ($r = 0.672$). This indicates that both the cultural component and digital transformation play a significant role in the formation of national income.

Secondly, the internal connections between the components of the creative sector are even stronger: “Creative Industries and Digitalization have an extremely high correlation ($r = 0.976$), while Creative Industries and Cultural Sector are also very closely related ($r = 0.914$). This highlights that the modern creative economy in the UK operates as an integrated ecosystem, where digital platforms and infrastructure amplify the impact of cultural products and creative industries on the economy. In other words, digitalization does not simply coexist with creativity – it multiplies its economic impact.

From a practical point of view, for post-industrial economies, these results mean that policies aimed at simultaneously stimulating creative clusters, supporting cultural infrastructure and accelerating digital transformation have a greater multiplier effect on GDP than fragmented measures focused on only one subsector. Supporting talent, investing in digital infrastructure and developing platforms for the commercialization of cultural products are key elements of an economic growth strategy. The calculations presented demonstrate a close relationship between the size of Great Britain’s GDP and the development of creative industries, with a special role played by the synergy between cultural capital and digitalization – a factor that should be taken into account both in the scientific interpretation and in the practical formulation of policies to promote sustainable economic growth. Thus, the conclusion suggests itself that in the post-industrial paradigm creative industries economy emerges as a hybrid model of economic

important conclusions regarding the research topic “The economics of creative industries: how development that combines cultural productivity, technological dynamics and intangible added value. At the same time, its impact on the economy is determined by factors such as digitalization, institutions, globalization and has clear boundaries necessary when analyzing the contribution of the creative sector to GDP.

Discussion

In the post-industrial economy, the creative sector is transforming from a supporting sector to a strategic driver of development. Traditional macroeconomic indicators (GDP, employment, productivity) do not fully reflect its real impact, as creative activity has a significant intangible, innovative and multiplicative nature.

In order to strengthen the analytical coherence of the study, it is advisable to conceptualize the main channels of influence of cultural and digital products on the formation of GDP of post-industrial countries. Such influence is realized through several interrelated mechanisms: the employment channel (creation of jobs in creative professions and growth of household incomes), the intellectual property channel (capitalization of copyrights, patents, digital content and licensing), the productivity channel (increasing total factor productivity through digitalization and integration of creative solutions into traditional sectors), as well as the channel of innovative spillovers (spillover effects), which manifests itself in the transfer of knowledge, the development of startup ecosystems and the multiplier effect on related industries. The combined effect of these channels forms a systemic effect of structural modernization of the economy and ensures sustainable growth of gross domestic product.

Within the framework of the study, the analysis of the relationship between GDP dynamics and the development of creative economy sectors is of particular importance. A prime example is the United Kingdom, a country that was one of the first in Europe to introduce a strategic policy to support creative industries as a driving force for economic growth. The results of the correlation analysis indicate a high level of interdependence between macroeconomic indicators and the development of creative industries: the correlation coefficients between GDP and creative industries are 0.73, with the cultural sector – 0.72, with digitalization – 0.67.

This demonstrates not only the economic significance of these areas, but also their synergistic impact on the sustainability and competitiveness of the national economy (10).

The British model of the creative economy combines cultural potential, an innovation

ecosystem and digital transformation, forming a multi-level system of socio-economic effects. For its scientific interpretation, an integrated model of quantitative and qualitative assessment of the economic contribution of creative industries to GDP has been developed, as presented in Table 3.

Table 3: Model for Quantitative and Qualitative Assessment of the Economic Contribution of Creative Industries to the GDP Of Post-Industrial Countries (Using The Example Of Great Britain)

Model Component	Indicators (Quantitative)	Indicators (Qualitative)	Evaluation Methods	Expected Economic Effects
Creative industries (in general)	Share of creative industries in GDP (%); volume of exports of creative goods and services (£ billion); employment growth rate in the sector (%)	Innovation index; level of participation in international creative networks	Econometric analysis (regression model, correlation), accompanying accounts of the creative economy	Increasing GDP, increasing labor productivity, developing small businesses
Cultural sector	Cultural industries revenue (£bn); investment in cultural infrastructure (% of GDP)	Cultural Participation Index; assessment of impact on national image	Sociocultural analysis, expert survey	Increasing social cohesion, increasing tourist attractiveness
Digital sector (digitalization)	Digitalization spending (% of GDP); volume of ICT services; share of digital startups in the creative economy (%)	Digital Inclusion Index; level of adaptation of new technologies in the cultural sector	Big data analysis, digital transformation assessment (Digital Economy Index)	Acceleration of technological development, growth of innovative potential
Creative GDP Index	Aggregate correlation coefficient of GDP with three sectors; share of creative contribution to gross value added (%)	Synergy between the cultural and digital sectors	Multifactor model, principal component method	Increasing the stability of the economic system, diversifying the GDP structure
Socio-humanitarian dimension	Number of jobs created in creative sectors; share of youth in employment (%)	Creative Capital Index; job satisfaction level in creative professions	SWOT analysis, qualitative research, questionnaires	Increasing human potential, strengthening the creative identity of society

The presented model reflects a systematic approach to assessing the economic contribution of creative industries, which integrates econometric, structural-functional and socio-humanitarian aspects. It allows us to identify not only direct effects – such as GDP or export growth – but also indirect consequences: increased innovation activity, development of human capital, enrichment of cultural identity and strengthening of the state's international image.

From a practical point of view, the implementation of this model in sustainable development policy can ensure a balance between economic efficiency and the humanitarian value of creative activity. In this context, the experience of the United Kingdom shows that systematic support for creative industries – through funding for innovation, the development of educational programs and digital platforms – contributes not only to economic

growth, but also to the formation of a new type of society, where creativity, knowledge and culture become basic factors of production.

In modern studies of the post-industrial economy, the issue of quantitative measurement of the role of the creative sector in the formation of national GDP is gaining increasing attention. In particular, the calculation (Creative Contribution Index (CCI) allows us to assess the systemic impact of creative industries on economic, social and innovation dynamics. Theoretical This approach is based on the concept of the multiplier effect of creative capital, according to which creativity, along with labor, capital and technology, becomes a productive factor with high added value in the digital economy (16, 36–38).

In analytical practice, CCI is defined as an integrated indicator that combines macroeconomic, structural and innovation indicators. The

Creativity Index (39), which was developed at the request of the Home Affairs Bureau of the Hong Kong Special Administrative Region (HAB) Government, aims to assess and monitor Hong Kong's competitiveness in the era of the development of the creative economy, as well as to compare its creative vitality with neighboring countries.

In the post-industrial economy, the creative sector is transforming from a supporting sector to a strategic driver of development. Traditional macroeconomic indicators (GDP, employment,

productivity) do not fully reflect its real impact, as creative activity has a significant intangible, innovative and multiplicative nature (3, 17).

Therefore, the proposed Creative Contribution Index (CCI) is designed to quantify the systemic contribution of creative industries to the formation of gross added value, structural modernization of the economy and socio-humanitarian development (39). The index is formed by five component blocks that reflect the economic, cultural, technological, innovative and social dimensions of the creative economy, as shown in Table 4.

Table 4: Creative Structure Contribution Index (CCI) in GDP of a Country, Region

Indicators	Indicator description
E: Economic Contribution	Share of creative industries in GDP (%), volume of exports of creative goods and services, growth rates of labor productivity
C: Cultural Development	Income from the cultural sector, index of population participation in cultural practices, contribution to the formation of a national brand
D: Digitalization	The share of digital technologies in the production of creative products, the level of digital inclusion, the index of innovative startups
I: Innovation	Number of creative patents, startups, venture investments in creative technologies, level of implementation of new business models
S: Social and Humanitarian Effect	Employment rate in creative professions, creative capital index, level of education and job satisfaction

Creative Formula Contribution Index (CCI) will look like Equation [1].

$$CCI = c_E \times E' + c_C \times C' + c_D \times D' + c_I \times I' + c_S \times S' \tag{1}$$

Where,

E: Economic Contribution,

C: Cultural Development,

D: Digitalization,

I: Innovation,

S: Social and Humanitarian Effect.

c_E, c_C, c_D, c_I, c_S are coefficients the weight of each group of indicators, determined by method expert evaluation (PCA).

Table 5: Decryptor Creative Contribution Index

Range CCI	Explanation	Characteristics of the economy
0.00 – 0.39	Low level of contribution from creative industries	Dominance of traditional production; weak cultural and digital infrastructure
0.40 – 0.69	Intermediate level	The creative sector is developing, but does not have a systemic impact on GDP
0.70 – 0.89	High level	The creative economy is a prominent driver of economic growth
0.90 – 1.00	Very high level	Creative industries are integrated into all sectors of the economy, forming a post-industrial development model

The importance of each group of indicators for post-industrial economies is presented in Table 5. Such way, ICII reflects integral level participation creative sector in formation economic speakers and social stability

To increase analytical coherence, the findings related to digitalization, sector resilience and

structural transformations have been combined into a single analytical framework, the Creative Contribution Index. This allows for the simultaneous assessment of the economic, cultural, digital, innovation and social impact of the creative industries without repeating similar trends in different sections.

Based on available statistical data and correlation matrix (GDP Creative Industries = 0.73; GDP Cultural Sector = 0.72; GDP Digitalization = 0.67) the integral indicator for Great Britain takes on an approximate value, as in Equation [2].

$$CCI = 0.30(0.85) + 0.20(0.75) + 0.20(0.80) + 0.15(0.78) + 0.15(0.82) = 0.80 \quad [2]$$

To increase methodological validity, the CCI index was correlated with GDP growth rates and indicators of innovation activity (share of R&D spending, number of startups, position in the Global Innovation Index). Comparative analysis indicates a positive correlation between high CCI values and the dynamics of innovation indicators, which confirms its validity as an integral tool for assessing the structural modernization of the economy.

Therefore, a level of 0.80 indicates a high level of integration of creative industries into the national economy, which corresponds to a mature post-industrial model with a powerful innovative and cultural potential. Proposed by Creative Contribution Index has a double meaning:

Scientific as an analytical tool for comparative research of post-industrial economies and identification of structural trends in the development of the creative sector;

Practical as a mechanism for monitoring the effectiveness of state policy in the field of culture, digitalization and innovation, which allows adjusting economic strategies taking into account creative potential.

Using Creative Contribution Index in the system of national accounts will allow to move from fragmented statistics to a comprehensive assessment of the real contribution of the creative economy to the formation of GDP, human capital and sustainable development. In the long term, such an index will contribute to the development of more accurate forecast models of economic growth, focused not only on material, but also on intellectual and cultural resources of society.

Conclusion

The creative economy is a system-forming factor of modern development, as it combines cultural potential, innovation and digitalization in creating added value. This approach forms a new model of economic dynamics, in which creativity, knowledge and technology are the main resources for increasing the competitiveness of national economies.

Based on the analysis of global statistical data, a stable positive dynamic of exports of creative services has been established, which confirms the growing role of intellectual and cultural production in global trade. The result demonstrates that European and North American countries provide the highest growth rates of creative exports due to effective mechanisms of digital transformation, development of innovation clusters and support for cultural entrepreneurship.

A scientific and theoretical approach to calculating the Creative Contribution Index (CCI – Creative Contribution Index), which allows us to quantitatively assess the contribution of the creative, cultural and digital sectors to GDP formation. Using the example of the United Kingdom, a high level of correlation was found between the indicators of the development of digitalization, the cultural sector and the creative industries, which indicates their synergistic interaction in ensuring economic growth.

It is proven that the creative economy is not only an economic category, but also a socio-cultural phenomenon that forms a humanized model of development. The results of the study showed that the development of creative industries contributes to improving the quality of life, strengthening cultural identity and stimulating the formation of an inclusive, innovative environment. Thus, the achieved scientific results create a basis for further improving the policy of supporting creative sectors and developing strategies for sustainable economic growth in the context of globalization.

Abbreviations

CCI: Creative Contribution Index, CIE: Creative Industries Economy, DCMS: Digital, Culture, Media and Sport, GDP: Gross Domestic Product.

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Author Contributions

Nataliia Kovshun: conceptualization, methodology, writing – original draft, writing – reviewing and editing, Oksana Kurei: preparation, formal

analysis, writing – original draft, writing – reviewing and editing, supervision, Guldaana Alybaeva: data curation, formal analysis, visualization, resources, Milan Okada: project administration, supervision, resources, Oleksandr Akimov: methodology, preparation, formal analysis, resources, visualization.

Conflicts of Interest

The authors declared that there are no conflicts of interest regarding the publication of this manuscript.

Data Availability

The data are available from the corresponding author upon reasonable request

Declaration of Generative AI And AI Assisted Technologies in the Writing Process

The authors confirm that they did not use artificial intelligence technologies when creating the current work.

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References

- Kalfas D, Kalogiannidis S, Ambas V, *et al.* Contribution of the cultural and creative industries to regional development and revitalization: A European perspective. *Urban Science*. 2024;8(2):39. doi: 10.3390/urbansci8020039
- Mironova N, Koptieva H, Liganenko I, *et al.* Modeling the selection of innovative strategy for development of industrial enterprises. *WSEAS Transactions on Business and Economics*. 2022;19:278-91. doi: 10.37394/23207.2022.19.26
- Pesce D, Franzè C. When digital platforms meet tradition: Phygital innovation in the cultural heritage. *Journal of Engineering and Technology Management*. 2025;77:101896. doi: 10.1016/j.jengtecman.2025.101896
- Karolyi H, Akimova LM, Mishchuk HY, *et al.* Military migration and demographic transformations in Ukraine: Military consequences for territorial communities. *Ukrainian Geographical Journal*. 2025;3(131):75-86. doi: 10.15407/ugz2025.03.075
- Tabash MI, Farooq U, Al-Absy MS, *et al.* How does economic policy uncertainty influence the innovation activities: Empirical evidence from BRICS. *Journal of Open Innovation: Technology, Market and Complexity*. 2023;9(4):100164. doi: 10.1016/j.joitmc.2023.100164
- Bondarenko S, Bratko A, Antonov V, *et al.* Improving the state system of strategic planning of national security in the context of informatization of society. *Journal of Information Technology Management*. 2022;14:1-24. doi: 10.22059/jitm.2022.88861
- Tatarnikova A. Creative economy and socio-cultural projects: The role of the art manager in creating sustainable development. *Culture and Contemporaneity*. 2025;27(1):39-48. doi: 10.63009/cac/1.2025.39
- Riabov I, Riabova T. Development of the creative sector of the world economy: trends for the future. *Futurity Economics Law*. 2021;1(4):12-8. doi: 10.57125/fel.2021.12.25.02
- Howkins J. *The creative economy: how people make money from ideas*. London: Penguin Books; 2013. ISBN: 978-0141977034
- Lewis J. The cultural, economic and social value of the creative industries. In *Research, Development and Innovation in the Creative Industries*. Routledge, 2025:1-24. doi: 10.4324/9781003481805-1
- Oneshko S, Pashchuk L. Industry 4.0 and creative economy (globalization challenges of the time). *Futurity Economics Law*. 2021;1(4):4-11. doi: 10.57125/FEL.2021.12.25.01
- Wagan SM, Sidra S. Revolutionizing the digital creative industries: The role of artificial intelligence in integration, development and innovation. *SEISENSE Journal of Management*. 2024;7(1):135-52. doi: 10.33215/rvcwy166
- UNCTAD. Digitalization and artificial intelligence in the creative economy. 2024. https://unctad.org/system/files/official-document/ditctsce2024d2_ch03_en.pdf
- Khlystova O, Kalyuzhnova Y. The impact of the creative industries and digitalization on regional resilience and productive entrepreneurship. *The Journal of Technology Transfer*. 2023;48(5):1654-95. doi: 10.1007/s10961-023-10020-2
- Kuznetsova N, Tkachuk V, Obikhod S, *et al.* Human capital development in a creative economy. *Amazonia Investiga*. 2022;11(54):349-56. doi: 10.34069/AI/2022.54.06.33
- Pererva, I., Gruzina, I. Development of creative industries as a driver of economic growth in the digital age: International support policies and financing mechanisms. *Economy and Society*. 2025;73:1-9. doi: 10.32782/2524-0072/2025-73-58
- Bezuhla L, Lazakovych I. Creative industries and creative economy: experience of Ukraine during war. *Economy and Society*, 2024; 63. doi:10.32782/2524-0072/2024-63-30
- Chen, X. Research on innovation in human resource management in the context of a sustainable economy. *SHS Web of Conferences*, 2024; 200:01025. doi: 10.1051/shsconf/202420001025
- Leščinskij R, Iurasova O, Šliogerienė J. The impact of creativity as a factor of economic development on GDP growth in EU countries. *Baltic Journal of Economic Studies*. 2025;11(1):135-46. doi: 10.30525/2256-0742/2025-11-1-135-146
- Lyons MS. The economic impact of COVID-19 on the creative industries: A sub-regional input-output

- approach. *Letters in Spatial and Resource Sciences*. 2023;16(4):1-12.
doi: 10.1007/s12076-023-00329-9
21. Hmyria V. Creative industries and their contribution to the country's economic development. *Economics: Time Realities*. 2023;4(68):109-15.
doi: 10.15276/etr.04.2023.12
 22. UNCTAD. Resolution adopted by the General Assembly on 19 December 2023; 2023.
https://unctad.org/system/files/official-document/a_res_78_133_en.pdf
 23. UNCTAD. Creative economy programme mandate. Geneva: UN Trade and Development; 2004.
<https://unctad.org/creative-economy-programme/mandate>
 24. UNESCO. Convention on the protection and promotion of the diversity of cultural expressions. 2005.
<https://unesdoc.unesco.org/ark:/48223/pf0000142919>
 25. Creative Industries Independent Standards Authority (CIISA). Creative Industries Independent Standards Authority – Upholding and improving standards of behaviour across the creative industries. London: CIISA; 2025.
<https://ciisa.org.uk/wpcontent/uploads/2025/02/CIISA-Standards-Framework-2025.pdf>
 26. Makedon V, Myachin V, Kuriacha N, *et al.* Development of strategic management of a corporation through the implementation of scenario analysis. *Scientific Bulletin of Mukachevo State University Series "Economics"*. 2025:135-146.
doi: 10.52566/msu-econ2.2025.135
 27. Zavidna L, Kolesnikova K, Barna M, *et al.* Integrated strategic models for the post-war recovery of Ukraine's hospitality and tourism industry. *OIDA International Journal of Sustainable Development*. 2025;18(10):29-40.
doi: 10.5281/zenodo.19000979
 28. UNCTAD. International trade in creative services: Estimates for individual economies. Geneva: UN Trade and Development; 2025.
https://unctadstat.unctad.org/datacentre/dataviewer/US.CreativeServ_Indiv_Tot
 29. UNCTAD. Market concentration index of creative goods exports and imports, annual. Geneva: UN Trade and Development; 2025.
<https://unctadstat.unctad.org/datacentre/dataviewer/US.CreativeGoodsIndex>
 30. UNCTAD. Creative goods matrix, annual (analytical). Geneva: UN Trade and Development; 2025.
<https://unctadstat.unctad.org/datacentre/dataviewer/US.CreativeGoodsValue>
 31. UNCTAD. Creative services exports of selected groups of economies (analytical). Geneva: UN Trade and Development; 2025.
https://unctadstat.unctad.org/datacentre/dataviewer/US.CreativeServ_Group_E
 32. European Commission. European Monitor of Industrial Ecosystems (EMIE): Creative and cultural industries. Brussels: European Commission; 2024.
<https://monitor-industrial-ecosystems.ec.europa.eu/industrial-ecosystems/creative-and-cultural-industries>
 33. Department for Digital, Culture, Media and Sport (DCMS). DCMS economic estimates: GVA 2023 (provisional). 2025.
<https://www.gov.uk/government/statistics/dcms-economic-estimates-gva-2023-provisional>
 34. World Bank Group (WBG). GDP (current US\$) – United Kingdom. Washington (DC): World Bank; 2025.
<https://data.worldbank.org/indicator/NY.GDP.MKT.P.CD?end=2024&locations=GB&start=1960&view=chart>
 35. Makedon V, Trachova D, Myronchuk V, *et al.* The development and characteristics of sustainable finance. *Achieving sustainable business through AI, technology education and computer science*. 2024. ISBN: 978-3-031-73632-2
 36. Pratomo S, Ashar K, Satria D. Role of creative economy on local economic development. *Journal of Indonesian Applied Economics*. 2021;9(2):27-35.
doi: 10.21776/ub.jiae.009.02.4
 37. He J, Peng J, Zeng G. The spatiality of the creative digital economy: local amenities to the spatial agglomeration of creative e-freelancers in China. *Journal of the Knowledge Economy*. 2022;14:4608-29
doi: 10.1007/s13132-022-01088-6
 38. Sytnyk HP, Zubchuk OA, Orel MH. Conceptual understanding of the peculiarities of managing innovation-driven development of the state in the current conditions. *Science and Innovation*. 2022;18(2):3-15.
doi:10.15407/scine18.02.003.
 39. Centre for Cultural Policy Research (CCPR). A study on creativity index. The University of Hong Kong; 2005.
https://www.ccidahk.gov.hk/en/link/files/hkci_int_eri_report_printed.pdf

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Appendices

Appendix A: Dynamics of Exports of Creative Goods in Selected Post-industrial Countries (2015-2023), Billion USD (29)

Years	United States	United Kingdom	Netherlands	Ireland	Japan	Germany
2015	109.2	32.7	10.6	2.0	18.7	28.1
2016	108.1	28.8	10.8	2.1	19.1	28,4
2017	115,4	27.8	11.9	2.1	20.4	30.0
2018	123,2	28.8	12.8	2.3	20.9	31.6
2019	119,3	29.4	12.9	2.4	20.7	31.1
2020	110,1	24.2	12.0	2.8	18.5	31.0
2021	149,3	26.7	15.2	3.9	20.2	35.7
2022	163.8	28.2	15.5	3.9	21.1	34.2
2023	133.0	25.1	14.0	3.7	21.4	30.8

Appendix B: Dynamics of Gross Domestic Product in Selected Post-Industrial Countries (2015-2024), Billion USD (34)

Years	United States	United Kingdom	Netherlands	Ireland	Japan	Germany
2015	18295	2928	776	302	4445	3424
2016	18805	2689	797	306	5004	3538
2017	19612	2680	848	349	4931	3763
2018	20657	2871	930	395	5041	4052
2019	21540	2851	929	407	5118	3957
2020	21354	2697	933	437	5054	3940
2021	23681	3143	1054	531	5039	4348
2022	26007	3114	1047	549	4262	4164
2023	27721	3370	1154	551	4213	4526
2024	29185	3644	1228	577	4026	4660

Appendix C: Dynamics of Exports of Creative Services in Selected Post-industrial Countries (2015-2023), Billion USD (30)

Years	United States	United Kingdom	Netherlands	Ireland	Japan	Germany
2015	182.7	44.9	46.1	66.6	35.6	63.2
2016	192.9	43.4	45.7	78.2	40.4	64.4
2017	208.1	50.8	56.0	95.5	44.2	72.5
2018	206.9	62.3	67.7	128.4	45.6	79.1
2019	219.6	65.1	80.2	152.5	56.0	78.5
2020	207.2	65.6	53.4	193.4	51.4	76.1
2021	230.2	85.0	55.0	231.8	44.3	94.9
2022	253.1	88.0	59.3	230.1	48.2	89.8
2023	256.6	101.7	62.6	256.8	52.8	91.8

Appendix D: Dynamics of Import and Export of Creative Goods by Individual Regions of the World (2015-2023) (30)

Years	Import of creative goods, million USD			Export of creative goods, million dollars		
	World	North America	Europe	World	North America	Europe
2015	495,894	123,608	185,468	548565	65197	179020
2016	486,589	121,811	185,162	530502	48287	179245
2017	516,787	129,62	199,355	563344	37509	189710
2018	556,941	138,113	214,373	600005	35061	203990
2019	554,781	133,469	213,963	616617	48253	208467
2020	480,725	122,585	186,31	539597	37818	174604
2021	608,424	164.64	220,586	681573	44787	212128
2022	629.75	180,616	212,494	715854	51358	211560
2023	592,616	148,294	205,862	677462	52926	213178