Evaluation of cultural sphere development in the European Union countries as a factor of forming social capital and creative industries: experience for Ukraine

Abstract
Taking into account the European integration course of Ukraine, it is necessary to evaluate the socio-economic conditions of cultural sphere development in the countries of the European Union, because it is an integral part of creative industries and improvement of social capital. The purpose of this research is to identify the factors of cultural sphere development in the EU countries due to its importance for the system of creative industries and the process of social capital accumulation, outlining the possibilities of European experience adaptation in this sphere for Ukraine. The scientific and methodology approaches were developed to the definition of cultural sphere development factors in the EU countries from the point of view of its influence on the formation of social capital and creative industries. A comparative analysis of socio-economic development of cultural sphere in 2011-2019 was realized, including evaluation of spatial differences in its functioning on the base of variation indicators calculating and tracking their dynamics. The specification of multiple regression models was done, in which the explained variables became employment in cultural sphere ($Y_1$) and the value of its gross value added ($Y_2$).

It is found out that the place and significance of the cultural sphere for the national economy of each EU country differ, whereas the environment of its functioning is relatively stable, which contributes to the formation of proper conditions for the accumulation of social capital and the development of creative industries. It is substantiated that spatial differences in cultural sphere development have been intensified in the EU countries due to the different intensity of social capital and creative industries network formation. The multiple regression analysis revealed that a number of explanatory variables (demographic situation, tourism activity, unemployment rate, and education index) influence employment and gross value added of the cultural sphere.

It is determined that for the cultural sphere of Ukraine, taking into account the European integration and experience of the EU countries, it is important to ensure the stability of cultural sphere, minimize the effects of the demographic crisis, promote tourism development, and regulate the employment policy, which, due to synergy, will influence the social capital and the positions of creative industries in the national economy. Keywords: Cultural Sphere; Creative Industries; Social Industries; Cultural Employment; EU; Ukraine; Factors of Development; Multiple Regression Analysis

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Оцінка розвитку сфери культури в країнах ЄС як чинника формування соціального капіталу й творчих індустрій: досвід для України

Анотація. У статті розроблено науково-методологічні підходи до визначення чинників розвитку сфери культури у країнах ЄС із урахуванням її важливості для формування соціального капіталу й творчих індустрій, що передбачає проведення порівняльного аналізу соціально-економічного розвитку цієї сфери у 2011–2019 рр., оцінювання просторових відмінностей її функціонування на підставі обчислення показників варіації і відстеження їхньої динаміки, а також специфікацію багатофакторних економетричних моделей, в яких результатуючими змінними стали зайнятість у сфері культури ($Y_1$) та величина її валової доданої вартості ($Y_2$).

Встановлено, що місце сфери культури в національній економіці кожної з країн ЄС є диференційованим, а середовище її функціонування порівняно стабільним, що сприяє формуванню населених умов для нагромадження соціального капіталу й розвитку творчих індустрій. Обґрунтовано, що в країнах ЄС посилено просторові відмінності розвитку сфери культури. Це зумовлює різну інтенсивність формування соціального капіталу та мережі творчих індустрій.

Багатофакторний регресивно-кореляційний аналіз виявив, що на зайнятість і валову додану вартість сфери культури впливає низка факторних ознак (демографічна ситуація, туристична діяльність, рівень безробіття та освіченості).

Визначено, що для сфери культури України з огляду на євроінтеграцію та досвід країн ЄС важливо забезпечити стабільність функціонування цієї сфери, минімізувати наслідки демографічної кризи, сприяти розвитку туризму, регулювати політику зайнятості, що завдяки синергізму впливатиме на соціальний капітал і позиції творчих індустрій у національній економіці.

Ключові слова: культура; сфера культури; креативні індустрії; соціальний капітал; зайнятість у сфері культури; ЄС; Україна; чинники розвитку; багатофакторний регресивний аналіз.

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Оцінка розвиття сфери культури в странах ЕС как фактора формирования социального капитала и творческих индустрий: опыт для Украины

Аннотация. В статье разработаны научно-методологические подходы к определению факторов развития сферы культуры в странах ЕС с учетом её важности для формирования социального капитала и творческих индустрий, что предполагает проведение сравнительного анализа социально-экономического развития этой сферы в 2011–2019 гг., оценивание пространственных отличий её функционирования на основе исчисления показателей вариации и отслеживания их динамики, спецификацию многофакторных эконометрических моделей, где результирующими переменными стали занятость в сфере культуры ($Y_1$) и величина её валовой прибавочной стоимости ($Y_2$).

Установлено, что место сферы культуры в национальной экономике каждой из стран ЕС является дифференцированным, и среда её функционирования сравнительно стабильная, что способствует формированию надлежащих условий для накопления социального капитала и развития творческих индустрий. Обосновано, что в странах ЕС усилены пространственные отличия развития сферы культуры, что обусловливает разную интенсивность формирования социального капитала и сети творческих индустрий. Многофакторный регрессивно-корреляционный анализ выявил, что на занятость и валовую прибавленную стоимость сферы культуры влияет ряд факторных переменных (демографическая ситуация, туристическая деятельность, уровень безработицы и образования).

Определено, что для сферы культуры Украины с учетом евроинтеграции и опыта стран ЕС важно обеспечить стабильность функционирования этой сферы, минимизировать последствия демографического кризиса, способствовать развитию туризма, регулировать политику занятости, что благодаря синергизму будет влиять на социальный капитал и позицию творческих индустрий в национальной экономике.

Ключевые слова: сфера культуры; творческие индустрии; социальный капитал; занятость в сфере культуры; ЕС; Украина; факторы развития; многофакторный регрессивный анализ.

1. Introduction

A special place in the system of creative industries (CI) and the accumulation of social capital (SC) belongs to cultural activity, which is due to its ability to reveal the creative potential of individuals and form the value orientations of society. From an economic point of view, the cultural sphere (CSph) stimulates innovation and activates entrepreneurship, promotes the development of adjacent activities, taking an active part in the creation of a value chain, becomes a factor of image product characteristics improving and enables the implementation of the principles of sustainability. It is important to assess the socio-economic conditions of the development of CSph in the countries of the European Union (EU) as a component of the CI and the SC, outline the perspective directions for improving the functioning of this sphere in Ukraine, taking into account the
experience of these countries. This is particularly relevant due to the current situation in the domestic CSph, which arose in connection with the election of a course on European integration.

2. Brief Literature Review

The formation of scientific approaches to the disclosure of the place and importance of the CSph in the system of CI and SC in order to achieve structural changes and improve the well-being in the national economy is debatable. At the theoretical and methodological level D. Throsby (2009) specified the nature of the impact of economic policy measures and taxation, state regulation of the labour market, creative activity, mass media and international trade on the development of economic relations in CSph (Throsby, 2009). The problem of constructing effective economic relations in CSph and identifying the factors which influence on this process at the regional level in Germany, was solved by scientists K. Drda-Kühn and D. Wiegand (2010). Based on the classification of indicators set which characterize the culture (dependent variables), political institutions and the economic situation (independent variables) in the regions of Europe, G. Tabellini (2010) determined the multifactor regression-correlation dependencies and substantiates the causal relationships of the culture with the economic development.

L. Bonet and F. Donato (2011) outlined the main directions of increasing the efficiency of state regulation and management of the European cultural sector in order to ensure structural changes in it under the influence of the global financial and economic crisis. S. Häyrynen (2013), analysed changes in the cultural policy of Finland in 1990-2010, caused by reforms in public administration, the implementation of the principles of liberalism and the need for economic efficiency. Due to the analysis of the artistic communities’ activity, D. Lee (2013) identified peculiarities of their SC generation to provide intra-group social harmony. Using statistical data of the EU countries for 1999-2008, F. Marko-Serrano, P. Rausell-Koster and R. Abeledo-Sanchis (2014) tested the hypothesis about the importance of cultural and creative industries for economic growth at the regional level, revealed strong relationship between GDP per capita and the size of employment in these sectors. Based on the consideration of the social principles of cluster theory, E. Chuluunbaatar, Ottavia, D.-B. Luh, and Sh.-F. Kung (2014) identified the main factors in the development of the cultural and creative industries sector in view of the SC formation.

Cluster analysis was carried out to determine the promising directions of financial support for the development of CI in the EU countries by K. Baculakova and M. Gress (2015). I. Vitkauskaitė (2015) evaluated the importance of cultural industries in enhancing the development of related industries, conducted a comparative analysis of the choice of cultural policy instruments in the EU countries and identified its main models for stimulating activity in this sector of the national economy. Based on the use of economic and mathematical methods, L. Steiner, B. Frey and S. Hotz (2015) identified the types of interdependencies between the intensity of cultural events in the EU cities (European capitals of culture) and regional economic development, the level of satisfaction with the life of the local population. From the position of decomposition of cultural services and local budget expenditures on them, L. Häkonsen and K. Leyland (2016) identified the main factors influencing their provision in Norway. Comparison of practical measures to implement the «soft» support of EU institutions for certain Nordic countries with investing in CSph for stimulation of international cooperation, economic growth, social integration is implemented by C. Vos (2017).

In the research of K. Baculakova and L. Harakalova (2017) outlined theoretically the place of cultural industries in the system of creative economy and evaluated with the help of econometric modelling factors that pour into employment in the CI of the EU countries. The directions of activating the development of CI and innovative potential of culture were grounded by I. Skavronskaya (2017), with a view to strengthening the position of this sector in the Ukrainian economy and transforming the vector of development. A. Srakar, V. Ćopič and M. Verbič (2018) developed an index of economic and social conditions for the development of culture using a high-dimensionally adjusted factor analysis, which enabled the clustering of the EU countries on the socio-economic factors of this sphere development and track changes in the measures of cultural policy. The spatial influence of European capital of cultural programs by P. Gomes and A. Librero-Cano (2018) was estimated on the basis of comparison of GDP per capita and intensity of cultural activities at the regional level. Nevertheless, it is necessary to evaluate the development trends of the CSph and the impact of socio-economic conditions on this type of activity in the EU countries from the standpoint of its importance for the formation of CI and the accumulation of SC, to substantiate a number of recommendations for improving the position of this sphere in the Ukrainian economy.
3. Purpose
The purpose of the research is the identification of development factors of CSph in the EU countries, taking into account its importance for the CI system and the process of improving the SC, outlining the possibilities for adapting European experience in this sphere to Ukraine. To do this, it is necessary: to carry out a comparative analysis of the socio-economic development of the CSph in the EU countries; using the methodology of statistical analysis to assess the nature of the main indicators variation of CSph development in 2011-2019 for European countries; to identify the main factors influencing the activity in this area in the EU countries with the help of tools of multiple regression modelling. This will allow to propose scientific-methodological and practical approaches to improve the integration of the CSph of Ukraine from the standpoint of its importance for the formation of the SC and the CI development.

4. Methodology
The achievement of this goal involves the use of methods of induction and deduction, analysis and synthesis, comparison, historical and logical to determine the main regularities of development of CSph in the EU countries; statistical estimation during determination of peculiarities variation of the main indicators of this sphere functioning in the EU countries in 2011-2019; multiple regression analysis to characterize the main factors that influence the functioning of this area in the EU countries.

5. Results
From the standpoint of statistical data recording, CI does not have well-defined scientific and methodological approaches to track trends in their development in the areas of economic activity, types of economic operations and institutional sectors. The same problems arise with the definition of the main indicators of the functioning of the SC in the national economy. This complicates the analysis and evaluation of the influence of the CSph on the development of CI and the accumulation of SC. In view of the information available on this area in the SNA (System of National Accounts), its contribution to the development of CI and SC in the EU countries will be determined on the basis of macroeconomic indicators such as gross value added (GVA), wages and employment in CSph, final consumption expenditure of households (FCEH) by recreation and culture, export and import of cultural goods in intra and extra-EU trade (Table 1).

According to these data, CSph in the national economy of each country has different positions and is characterized by multi-vector development. For Malta, the contribution of this sphere to the national economy is significant, it has created GVA of 7.6% of GDP. In other EU countries, the share of GVA of this sphere in 2011-2019 was around 2% of GDP. It should be noted that for almost all analysed EU countries, the contribution of the CSph to the creation of GVA was of a steady nature. This indicates the relative stability of the functioning environment of the CSph, which is marked by favourable conditions for the accumulation of SC and the development of CI in the EU countries. It is appropriate for Ukraine to take this into account while forming the priority areas of cultural policy and measures to support the development of cultural industries.

The share of CSph wages and salaries in the EU countries is 0.6-3.0% of GDP (Table 1), which indicates the presence of asymmetries in the development of this sphere and the differentiation of approaches to revitalizing the cultural industry sector for each country. Similar tendencies are characteristic for employment in CSph as the smallest share of employed in 2011-2019 in this type of economic activity was in Bulgaria, Greece, Poland, Romania and Slovakia, the largest - in Estonia, Finland, Luxembourg, Malta, the Netherlands, Sweden and Slovenia. The main reasons for the discrepancies are the peculiarities of the geographical location, the size and natural and climatic conditions of the EU countries, the nature and tradition of involving the population in cultural and leisure practices, the intensity of cultural activities and the availability of rich cultural heritage. Together with the differences in the socio-economic development of the EU countries, this leads to the existence of spatial unevenness of the influence of CSph on the formation of the SC and the development of CI, the use of different models of subjects interaction of cultural activity.

In order to overcome these differentiations, the subprogram «Culture» of «Creative Europe» program (Education, Audiovisual and Culture Executive Agency, 2019) envisages enhancing the international interaction of cultural and creative institutions, the mobility of participants in cultural activities, and the «A New European Agenda for Culture» (European Commission, 2018a) and the «The Work Plan for Culture for 2019-2022» consider (European Commission, 2018b) culture as...
a factor in achieving social harmony and prosperity in EU countries, boosting employment, supporting growth and innovation in this area at the regional level. In Ukraine, in order to ensure sustainable innovation and cultural development and strengthen the influence of the CSph on the regional economy, the «Long-term Strategy for the Development of Ukrainian Creative Ecosystems» (The Cabinet of Ministers of Ukraine, 2016). was adopted, they cooperate in the «Creative Europe» and Eastern Partnership «Culture and Creativity» programs (The Ministry of Culture of Ukraine, 2019). In the long run, this partly alleviates the regional differentiations of the development of the Ukrainian CSph, will form a holistic cultural space, integrating this sphere into the EU institutions.

The principles of implementing the FCEH on culture in the EU countries are differentiated, because their distribution for GDP in 2011-2019 has impermanent character (Table 1). According to individual EU countries, the share of FCEH in this sphere in GDP has grown, by one they have been reduced, while others have fixed relative stability. This suggests that according to this indicator in 2011-2019, the dynamics of consumption of cultural products was multi-vector, depended on subjective assessments of households and internal social and economic trends of development of each EU country. According to absolute measurements, the amount of FCEH during this period left practically the same level (with the exception of Latvia and Lithuania, where their substantial increase occurred). It is important to consider the sensitivity of household behaviour to changes in the socio-economic situation, the tendency of subjects to transform their own tastes and preferences, the existence of differences in mentality and the system of values by region, when developing cultural policy measures in Ukraine aimed at reorienting FCEH. This will make it possible to achieve positive changes not only in the CSph, but also in related to it types of economic activity.

It should be noted that in the EU countries with a higher level of economic development, the share of FCEH in culture is higher compared to countries with lower level of economic development. At the theoretical level, this can be explained by the fact that improving the welfare characteristics of households allows them to reorient their consumer behaviour to meet the needs of

Table 1: Main indicators of cultural sphere development in the European Union countries

| Country     | Value added* | Gross | Wages and salaries | % of GDP | Cultural employment | % of total employment | Final consumption expenditure of households by recreation and culture, % of GDP | Final consumption expenditure of households by recreation and culture, current prices, % of GDP | Final consumption expenditure of households by recreation and culture, current prices, per capita | Import (intra-EU trade in culture goods by process, % of total) | Export (intra-EU trade in culture goods by process, % of total) | Export (extra-EU trade in culture goods by process, % of total) |
|-------------|--------------|-------|-------------------|---------|---------------------|----------------------|--------------------------------------------------------------------------|------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------|-----------------------------------------------|-----------------------------------------------|-----------------------------------------------|
| Belgium     | 1.8          | 1.9   | 0.9               | 0.9     | 3.8                 | 4.2                   | 4.5                                                                     | 4.1                                                                       | 9.0                                                                           | 8.3                                                                         | 1540                                                   | 1690                                                   |
| Bulgaria    | 2.1          | 2.1   | 0.7               | 0.9     | 2.5                 | 2.7                   | 4.8                                                                     | 5.1                                                                       | 7.1                                                                           | 8.2                                                                         | 270                                                        | 450                                                        |
| Czech Republic | 2.2         | 1.9   | 0.7               | 0.8     | 3.6                 | 3.6                   | 4.6                                                                     | 4.2                                                                       | 9.0                                                                           | 8.8                                                                         | 710                                                        | 890                                                        |
| Denmark     | 3.0          | 2.9   | 1.7               | 1.7     | 4.6                 | 4.4                   | 5.1                                                                     | 5.3                                                                       | 11.1                                                                          | 11.8                                                                                        | 2290                                                   | 2870                                                   |
| Estonia     | 3.7          | 3.5   | 1.7               | 1.7     | 4.1                 | 4.0                   | 5.1                                                                     | 5.4                                                                       | 9.6                                                                           | 10.9                                                                                        | 1820                                                   | 2260                                                   |
| Finland     | 2.7          | 3.1   | 1.3               | 1.3     | 3.1                 | 3.3                   | 3.0                                                                     | 3.0                                                                       | 6.8                                                                           | 6.7                                                                         | 1120                                                   | 1360                                                   |
| France      | 3.7          | 3.5   | 1.5               | 1.5     | 3.4                 | 3.5                   | 4.5                                                                     | 4.5                                                                       | 8.4                                                                           | 7.9                                                                         | 1430                                                   | 1490                                                   |
| Germany     | 2.7          | 3.1   | 1.3               | 1.3     | 3.1                 | 3.3                   | 3.2                                                                     | 4.5                                                                       | 4.4                                                                           | 5.9                                                                         | 590                                                        | 770                                                        |
| Greece      | 4.3          | 4.4   | 2.2               | 2.0     | 3.1                 | 3.6                   | 4.4                                                                     | 4.4                                                                       | 4.5                                                                           | 7.4                                                                         | 7.6                                                                         | 1020                                                   | 1190                                                   |
| Italy       | 2.7          | 2.5   | 1.5               | 1.5     | 3.4                 | 3.5                   | 4.5                                                                     | 4.5                                                                       | 8.1                                                                           | 7.9                                                                         | 1200                                                   | 1210                                                   |
| Latvia      | 2.7          | 3.0   | 1.0               | 1.2     | 3.4                 | 3.5                   | 4.9                                                                     | 5.8                                                                       | 8.1                                                                           | 9.7                                                                         | 480                                                      | 920                                                      |
| Lithuania   | 1.6          | 2.1   | 0.7               | 1.0     | 3.6                 | 3.9                   | 4.2                                                                     | 4.9                                                                       | 6.7                                                                           | 6.2                                                                         | 430                                                      | 860                                                      |
| Luxembourg | 1.7          | 1.5   | 1.2               | 1.1     | 5.2                 | 5.1                   | 2.2                                                                     | 2.0                                                                       | 6.2                                                                           | 6.1                                                                         | 1860                                                   | 2050                                                   |
| Malta       | 2.8          | 2.7   | 1.0               | 1.2     | 3.7                 | 3.6                   | 4.0                                                                     | 3.8                                                                       | 7.4                                                                           | 7.5                                                                         | 400                                                      | 560                                                      |
| Netherlands | 2.5          | 2.5   | 1.0               | 1.2     | 3.7                 | 3.6                   | 4.0                                                                     | 3.8                                                                       | 7.4                                                                           | 7.5                                                                         | 400                                                      | 560                                                      |
| Poland      | 2.7          | 2.5   | 1.5               | 1.5     | 2.8                 | 2.8                   | 4.5                                                                     | 4.5                                                                       | 6.7                                                                           | 5.6                                                                         | 690                                                      | 900                                                      |
| Portugal    | 2.5          | 2.5   | 1.5               | 1.5     | 2.8                 | 2.8                   | 4.5                                                                     | 4.5                                                                       | 6.7                                                                           | 5.6                                                                         | 690                                                      | 900                                                      |
| Romania     | 3.4          | 3.4   | 1.0               | 1.2     | 3.6                 | 3.6                   | 4.5                                                                     | 4.5                                                                       | 7.3                                                                           | 6.9                                                                         | 230                                                      | 490                                                      |
| Slovenia    | 2.7          | 2.7   | 1.5               | 1.5     | 3.6                 | 3.6                   | 4.5                                                                     | 4.5                                                                       | 7.3                                                                           | 7.3                                                                         | 400                                                      | 650                                                      |
| Slovakia   | 3.0          | 3.0   | 0.6               | 0.7     | 2.6                 | 2.9                   | 5.3                                                                     | 5.4                                                                       | 9.4                                                                           | 9.6                                                                         | 680                                                      | 930                                                      |
| Finland     | 2.7          | 2.6   | 1.5               | 1.4     | 5.2                 | 5.1                   | 6.0                                                                     | 5.1                                                                       | 11.7                                                                          | 11.2                                                                                        | 2180                                                   | 2220                                                   |
| Sweden      | 2.6          | 2.6   | 1.3               | 1.4     | 4.7                 | 4.9                   | 5.0                                                                     | 4.9                                                                       | 11.1                                                                          | 11.3                                                                                        | 2170                                                   | 2280                                                   |

Note: * - arts, entertainment and recreation; other service activities; activities of household and extra-territorial organizations and bodies.

Source: Eurostat (2020)
the higher level, to expand the possibilities of engaging in cultural-leisure practices and to modify world-view orientations. In this way, on the basis of synergy, the activation of the accumulation processes of the SC occurs and the development of CI is stimulated. Accordingly, for the EU countries, one of the important priorities of economic policy is the implementation of long-term measures that should alleviate the asymmetries of socio-economic development, the basis of which is the implementation of programs of European structural and investment funds (the Cohesion Fund, the European Regional Development Fund, the Strengthening of the European Territorial cooperation, etc.) EUR-Lex (2019). It is appropriate to consider this as one more factor, which will increase the FCEH for consumption of cultural services. Therefore, measures of economic policy that contribute to ensuring macroeconomic stability, improving the structure of the national economy, and raising the level of material position of households in Ukraine are becoming important. Equally important for the intensification of consumption of households by cultural services is the resolution of the geopolitical conflict, the establishment of peace and the restoration of the territorial integrity of our country.

The CSph in the EU countries is integrated into foreign economic relations. However, the share of export and import of cultural goods between and outside EU countries is insignificant, on average 0.5-0.7% of the total volume (Table 1). The structure of export and import of cultural goods directly between the EU countries in 2011-2018 is sensitive to changes in the domestic and foreign market conditions, and therefore has a variable character. According to relative indicators, the change in the structure of exports and imports of these goods for each EU country showed how to increase export-import transactions between countries (for example, the Czech Republic and Poland) and its reduction (Belgium, Bulgaria, Germany, etc.). By 2018, the exchange (export and import) of cultural goods between the EU countries mainly determined the trend towards slowing down of these processes. We also see similar trends in export-import operations for cultural goods between the EU countries and the rest of the world. This testifies the existence of a number of risks during the exchange of cultural goods between EU countries, which affects the quality of the formation of the SC and the development of CI. In order to intensify foreign economic activity in the CSph of Ukraine, it is necessary to take into account the high sensitivity of this sector to the situation on the external and internal markets, which in turn, through the appropriate transfer mechanisms, will affect the SC and CI.

To evaluate the peculiarities of the development of CSph in the EU countries in 2011-2019, we propose, based on the dynamics, a number of indicators of variation (Table 2). In 2011-2018, according to them in the EU countries, the differences in the creation of GVA intensified, with the scope of variation increased by 1.86 times, the mean value is 1.04 times, the sample variance is 3.0 times, the coefficient of variation is 1.65 times, its value always exceeded 0.33. In 2019, these indicators decreased drastically and began to correspond to the level of 2011. Such trends in the GVA for CSph for these countries indicate an increase in spatial asymmetries in the development of this sphere, the difficulty in shaping common cultural space and the common principles for the implementation of cultural policies. This means that the influence of CSph on the SC and the development of CI is diversified by country, its intensity is spatially inhomogeneous. For Ukraine, this creates a series of challenges of an integration nature through the complication of effective interaction in the European cultural space, caused by the incompleteness of the formation of its contours.

According to such indicator, as the share of wages and salaries of the CSph in GDP, in 2011-2019 the scope of variation increased by 1.9 times, the mean value by countries remained unchanged, the sample variance was insignificant (although it was observed increasing its magnitude), the coefficient of variation slightly exceeded 0.33 and grew, which is an indicator of the violation of homogeneity of the statistical population. The potential of this sphere to improve the welfare of those employed in the EU countries is to some extent the same type, although they showed a tendency to change the intensity of this process in a spatial sense. It indirectly relates to the provision of permanent approaches to the formation of the SC and the development of CI, as changes in the indicators of variation in the share of wages and salaries of the CSph show that it has relatively stable positions in the national economy of the EU countries. It is also important for Ukraine to provide the consistency of the CSph position in the national economy, which will enable the strategic guidelines of the SC’s accumulation and the formation of the CI sector to be clearly defined.

For employment in CSph, the dynamics of the indicators of variation by EU countries in 2011-2019 remained practically unchanged (Table 2). It should be noted that the value of the coefficient of
variation in these years was lower than 0.33, which indicates the existence of a homogeneous statistical population. This means that employment in the CSph of the EU countries reflects the similarity of the tendencies towards engaging in creative activity, which indirectly affects the equalization of the contribution of employed in this sphere to the formation of the SC and the development of the CI. In view of the prospects for the integration of the CSph of Ukraine into European cultural space, it is important to focus on the issue of employment as an instrument for intensifying the cultural dialogue within the country and the EU countries to improve the SC.

The dynamics of the scope of variation, mean values, and the sample variance of FCEH into culture in relative indicators in 2011-2019 showed its slowdown (Table 2). The positive is that the

| Indicator                                           | Year  | Scope of variation | Mean value | Sample variance | Coefficient of variation |
|-----------------------------------------------------|-------|--------------------|------------|-----------------|--------------------------|
| Value added*, gross, % of GDP                        | 2011  | 6.40               | 2.84       | 1.6113          | 0.4472                  |
|                                                     | 2013  | 7.20               | 2.88       | 1.9762          | 0.4866                  |
|                                                     | 2016  | 11.69              | 3.00       | 4.5088          | 0.7078                  |
|                                                     | 2017  | 11.69              | 2.98       | 4.5152          | 0.7129                  |
|                                                     | 2018  | 11.90              | 2.96       | 4.7849          | 0.7386                  |
|                                                     | 2019  | 6.40               | 2.79       | 1.4939          | 0.4383                  |
| Wages and salaries*, % of GDP                        | 2011  | 1.70               | 1.27       | 0.2088          | 0.3611                  |
|                                                     | 2013  | 1.70               | 1.28       | 0.2104          | 0.3582                  |
|                                                     | 2016  | 2.00               | 1.28       | 0.2454          | 0.3856                  |
|                                                     | 2017  | 2.30               | 1.30       | 0.2636          | 0.3961                  |
|                                                     | 2018  | 2.40               | 1.34       | 0.2725          | 0.3896                  |
|                                                     | 2019  | 3.00               | 1.32       | 0.3372          | 0.4413                  |
| Cultural employment, % of total employment           | 2011  | 3.80               | 3.67       | 0.7982          | 0.2435                  |
|                                                     | 2012  | 4.20               | 3.84       | 0.8633          | 0.2462                  |
|                                                     | 2016  | 3.70               | 3.83       | 0.7238          | 0.2221                  |
|                                                     | 2017  | 3.90               | 3.84       | 0.6601          | 0.2117                  |
|                                                     | 2018  | 4.00               | 3.90       | 0.7688          | 0.2248                  |
|                                                     | 2019  | 3.60               | 3.89       | 0.7699          | 0.2256                  |
| Final consumption expenditure of households by recreation and culture, % of GDP | 2011  | 4.88               | 4.58       | 0.9266          | 0.2103                  |
|                                                     | 2013  | 6.40               | 4.49       | 0.9023          | 0.2115                  |
|                                                     | 2016  | 3.70               | 4.43       | 0.8868          | 0.2127                  |
|                                                     | 2017  | 3.60               | 4.43       | 0.9686          | 0.2221                  |
|                                                     | 2018  | 4.40               | 4.48       | 0.9933          | 0.2225                  |
|                                                     | 2019  | 3.90               | 4.50       | 0.8508          | 0.2051                  |
|                                                     | 2011  | 7.30               | 8.29       | 3.6599          | 0.2307                  |
| Final consumption expenditure of households by recreation and culture, % of total | 2013  | 6.60               | 8.14       | 3.5193          | 0.2305                  |
|                                                     | 2016  | 6.50               | 8.22       | 3.3498          | 0.2226                  |
|                                                     | 2017  | 5.10               | 8.25       | 3.2802          | 0.2195                  |
|                                                     | 2018  | 6.19               | 8.48       | 3.1967          | 0.2108                  |
|                                                     | 2019  | 6.20               | 8.48       | 2.7902          | 0.1969                  |
| Final consumption expenditure of households by recreation and culture, current prices, euro per capita | 2011  | 2060.0             | 1123.08    | 438294.2        | 0.5895                  |
|                                                     | 2012  | 2200.0             | 1126.92    | 426846.2        | 0.5798                  |
|                                                     | 2013  | 2200.0             | 1161.54    | 432861.5        | 0.5664                  |
|                                                     | 2014  | 2200.0             | 1207.69    | 390338.5        | 0.5173                  |
|                                                     | 2015  | 2390.0             | 1310.00    | 446133.3        | 0.5099                  |
|                                                     | 2016  | 2420.0             | 1345.38    | 445985.8        | 0.4964                  |
| Import ( intra-EU trade in cultural goods by product), % of total | 2011  | 1.41               | 0.78       | 0.1379          | 0.4748                  |
|                                                     | 2012  | 1.36               | 0.67       | 0.1259          | 0.5312                  |
|                                                     | 2013  | 1.36               | 0.67       | 0.1259          | 0.5312                  |
|                                                     | 2016  | 1.17               | 0.69       | 0.0899          | 0.4316                  |
|                                                     | 2017  | 1.15               | 0.66       | 0.0936          | 0.4668                  |
|                                                     | 2018  | 1.27               | 0.63       | 0.0896          | 0.4763                  |
| Export (intra-EU trade in cultural goods by product), % of total | 2011  | 2.51               | 0.75       | 0.2855          | 0.7135                  |
|                                                     | 2013  | 1.69               | 0.64       | 0.1647          | 0.6386                  |
|                                                     | 2016  | 1.53               | 0.62       | 0.1671          | 0.6594                  |
|                                                     | 2017  | 1.89               | 0.61       | 0.1905          | 0.7106                  |
|                                                     | 2011  | 1.62               | 0.47       | 0.1419          | 0.6452                  |
| Import (extra-EU trade in cultural goods by product), % of total | 2013  | 1.55               | 0.43       | 0.1230          | 0.8104                  |
|                                                     | 2016  | 2.15               | 0.61       | 0.2874          | 0.8839                  |
|                                                     | 2017  | 2.08               | 0.55       | 0.1890          | 0.7916                  |
|                                                     | 2018  | 3.26               | 0.63       | 0.4864          | 1.1145                  |
| Export ( extra-EU trade in cultural goods by product), % of total | 2011  | 2.50               | 0.65       | 0.3598          | 0.9142                  |
|                                                     | 2013  | 2.82               | 0.71       | 0.4672          | 0.9632                  |
|                                                     | 2016  | 2.77               | 0.67       | 0.5007          | 1.0549                  |
|                                                     | 2017  | 2.68               | 0.69       | 0.4818          | 1.0026                  |
|                                                     | 2018  | 2.62               | 0.60       | 0.3987          | 1.0545                  |

Note: * - arts, entertainment and recreation; other service activities; activities of household and extra-territorial organizations and bodies.

Source: Calculated based on data by Eurostat (2020)
magnitude of the coefficient of variation was less than 0.33, which proves the similarity of household approaches of the EU countries (at the macro level) to meeting the demand for CSph products. Such tendencies in the indicators of the variation of FCEH into culture are indications that this consumer segment is sufficiently sensitive to changes in market conditions, since the CSph products do not belong to the most vital cohort. The character of the changes in the indicators of the variation of FCEH into culture per capita in the EU countries in 2011-2019 revealed that there are objective reasons that do not allow the spatial differentiation in the consumption expenditure of CSph to be offset. This is a factor that exacerbates disagreements between EU countries when implementing common cultural policy measures that indirectly contribute to the improvement of the SC and the development of CI. For CSph in Ukraine it is necessary to take into account the volatility of the FCEH in this sphere in order to provide the consistency of its development at the regional level, creating more favourable conditions for European integration and the accumulation of SC.

The dynamics of the indicators of the variation of export-import operations for the CSph products between the EU countries in 2011-2018 and other countries was marked by fluctuation (Table 2), indicating the dependence of foreign economic activity in this sphere on the trajectory of development of importing and exporting countries. The change in the coefficients of variation for various types of export-import operations in the CSph is higher than the maximum allowable value. This is an indication that the principles and conditions of foreign economic activity in the EU countries are differentiated in the EU countries, depend on the export-import potential of this sphere by countries, the characteristics of the cultural products themselves, the level of concentration of human and other types of economic resources in this type of activity.

This means that the export-import activity of CSph is influenced by factors that are difficult to assess and predict. Terms of integration of this sphere by the EU countries in foreign economic relations will provide different intensity of influence on the formation of the SC and the development of the CI. These circumstances should be taken into account in view of the need to intensify foreign economic activity of the CSph of Ukraine, aimed at popularizing domestic cultural products abroad. For the SC and the development of CI, this will create the preconditions for achieving positive changes through the transformation of the system of cultural values, the introduction of new forms of organization of activities and the intensification of exchange processes.

In order to determine which factors influence the development of CSph in EU countries, it is appropriate to use tools of multiple regression modelling. For this purpose, the dependent variables will be: \( Y_1 \) - employment in the CSph, thsd. people; \( Y_2 \) - GVA of cultural sphere, mln. euros. This is due to the fact that the employment of CSph is a «universal» indicator that indirectly reflects the various socio-economic processes in this type of economic activity, GVA of the cultural sphere is related to the production of products in this sphere, reflecting the added value created by them.

The independent variables are the following: \( X_1 \) - education index; \( X_2 \) - expenditures on tourism trips (1 night or over, outbound), thsd. euros; \( X_3 \) - the number of people, individuals; \( X_4 \) - unemployment, % of active population; \( X_5 \) - expenditures on tourism trips (1 night or over, for leisure or with family and friends, outbound), thsd. euros. The statistical data for identifying a multiple regression model is taken for 26 EU countries in 2011-2018, the sample size is 208 units. A step-by-step regression method was used to determine the main independent variables \( X_i \), which will be included in the multi-factor econometric models \( Y_1 \) and \( Y_2 \). On the basis of which such multiple linear regression equations were obtained (Table 3). The estimation of the main parameters of these multiple regression models shows their adequacy according to Fisher’s criteria and Student’s \( t \)-test, the absence of auto-correlation.

We can economically interpret the regression parameters of these models as follows. With a probability of 98.39%, the change in the employment in the CSph \( Y_1 \) in the EU countries is due to changes in the education index \( X_1 \), expenditures on tourism trips \( X_2 \) and population \( X_3 \). The decomposition of multiple determination coefficient on the terms has revealed that out of 98.39% of the variation in the value of employment in this sphere, explained by the regression-correlation model, 69.33% of the variation is explained by the number of population in the EU countries, 1.33% - the education index, 27.33% - the volume of expenditures on tourism trips \( X_2 \). According to the specified multiple regression model, with the growth of the population by 1 mln. people, the number of employed in CSph will increase on average by 12.047 thsd. people; when raising the education index by 0.1, the number of employed in CSph will increase on average by 41.7159 thsd. people; with the growth of expenditures...
on tourism trips (1 night or over, outbound) for 1 thsd. euros, the number of employees in the CSph will increase on average by 0.000007041 thsd. people.

The coefficients under the explanatory variables $X_1$, $X_2$, $X_3$ have a positive meaning, which indicates positive impact on employment in the CSph of such important factors as demographic situation, level of educational development and state of tourist activity. The adverse impact on employment in the CSph will be caused by the COVID-19 pandemic, as one of the main reasons for reducing tourist flows is the introduction of quarantine restrictions. If in the Czech Republic in July 2019 it was recorded 1,037,511 cases of arrival of tourists in the country, in July 2020 it was 364,365 cases (Eurostat, 2020). One of the consequences of this unfavourable situation is the reduction of expenditures on tourism trips. According to the econometric model, there is a direct link between tourism activity and employment opportunities in the CSph, so this will be the main factor in reducing the number of people employed in this sphere in the conditions of COVID-19.

The policy of stimulating the development of CSph in the EU countries should envisage not only the creation of a favourable environment for entrepreneurship in this sphere, but also take into account a number of social processes and activities that are adjacent to the cultural. Thanks to the synergy effect, this will have a positive impact on both the SC and the development of CI in the EU countries. In connection with European integration, this should be taken into account during the formation of cultural policy measures in the Ukrainian economy.

On average, in the EU countries, 94.30% of the change in the size of GVA of the cultural sphere ($Y_2$) is explained by changes in the population ($X_3$), unemployment rate ($X_4$) and expenditures on tourism trips (1 night or over, for leisure or with family and friends, outbound, $X_5$). The decomposition of multiple determination coefficient on the terms has revealed that, out of 94.30% of the variation of GVA, explained by the multiple regression model, 57.48% of the variation is explained by the number of population in the EU, 0.11% by the unemployment rate, 36.71% by the amount of expenditures on tourism trips (1 night or over, for leisure or with family and friends, outbound).

The specified sample regression function indicates that: if the number of population increases by 1 mln. people, then GVA of cultural sphere will increase on average by 286.684 mln. euros; if the unemployment is decreased by 1%, then GVA of cultural sphere will increase on average by 116.272 mln. euros; if expenditures on tourism trips (1 night or over, for leisure or with family and friends, outbound) are increased by 1 thsd. euros, then GVA in the cultural sphere will increase on average by 0.000255061 mln. euros.

The values of the coefficients under factor characteristics $X_3$, $X_4$, $X_5$ are positive, which indicates the direct correlation between the increase of the size of GVA of cultural sphere and the existing socio-demographic situation, unemployment rate and the development of the tourism industry. The COVID-19 pandemic will have a negative impact on the formation of GVA in the cultural sphere.

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due to the existence of direct links between tourism activities, unemployment rates and chains of GVA formation in this sphere. If in the Czech Republic in July 2019 the unemployment rate was 2.2% of active population, in July 2020 this indicator was 3.0%, similar trends are observed in other EU countries (Eurostat, 2020). Therefore, it is important to minimize the adverse effects of the economic crisis on the CSph through mechanisms of governmental support and assistance from EU funds.

For the EU countries, the intensification of economic activity in CSph, which aims to increase GVA, is connected with the implementation of a series of measures to improve the demographic situation, employment and the provision of tourist services. In view of Ukraine, it is important to create favourable conditions for the development of CSph that would take into account the overcoming of the demographic crisis, the creation of a favourable environment for a decrease in unemployment and tourism development. In addition, this will allow both improve the quality of the SC, and expand the network of CI.

6. Conclusions

The following scientific-methodological approach to identifying the factors of development of CSph in the EU countries is proposed in order to take into account its importance for the CI system and the accumulation of SC: implementation of a comparative analysis of the socio-economic development of CSph based on available statistical data on this type of economic activity according to SNA; estimation of variation features of the main indicators of development in this sphere in 2011-2019 with the help of methodology of statistical analysis; conducting multiple regression modelling for specification of the character of influence on the explained variables ($Y_1$ - employment in CSph, thsd. people, $Y_2$ - GVA of the cultural sphere, mln. euros) of the explanatory variables.

A comparative analysis of socio-economic development of the CSph revealed that the place and significance of this sphere for the national economy of each EU country is differentiated, the environment of its functioning is relatively stable, which makes it possible to form favourable conditions for the accumulation of SC and the development of CI. Estimation of the dynamics of the main indicators of the variation of the CSph of the EU countries in 2011-2019 revealed an increase in the spatial differences of this sphere in the creation of GVA, the implementation of FCEH on culture and export-import operations in this sphere, and the similarity of approaches to provide employment. This testified to the existence of asymmetries in the development of CSph in the system of CI of the EU countries, leading to the different intensity of the formation of the SC and a single cultural space.

Using the methodology of multiple regression analysis, it is determined that employment and GVA in the cultural sphere of the EU countries are influenced by the demographic situation and tourism activity; another important factor for employment in this sphere is the level of education, for GVA - the unemployment rate. On the basis of this, it is substantiated that the stimulation of the development of this sphere in the EU countries should take into account the socio-economic processes activities that are related to CSph. In view of the synergy phenomenon, this will make it possible to influence positively the SC and intensify the development of CI.

Improving the integration of CSph of Ukraine, due to the need for the accumulation of SC and the development of CI, should also take into account the fact that effective interaction in the European cultural space is complicated due to its being at the stage of formation. It is important for our country to provide the stability of CSph functioning, to minimize the effects of the demographic crisis, to promote tourism development, and to make cultural policy measures less dependent on the impact of the political situation. It is important for CSph of Ukraine to regulate employment, which is the main stimulator for the development of creative industries and the improvement of the SC. The prospects for further scientific research are related to the evaluation of the CSph budget financing in the EU countries and the comparison with the existing practice of its budgeting in the Ukrainian economy.

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