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GLOBAL AND LOCAL DETERMINANTS OF SOCIAL ECONOMY MODELS IN PANDEMIC TIMES

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ABSTRACT

There are more than 14 million identified cases and more than 0.5 million deaths all over the word because of COVID-19 pandemic. The countries with the developed social economy were more prepared to the pandemic challenges. There is evidencethe health care and social protection systems` development is of the particular importance. Countries with different social economy models (Liberal, Continental, Scandinavian, Mediterranean, and Transitive) have different main components of social development that influence social economy results. The aim of the article is to research global and local social factors and indicators for each social economy model to highlight the main characteristics and patterns of these models in pandemic conditions. The object of the study is country-core of social economy models (Belarus, Slovakia, Ireland, Sweden). The research method is the factor analysis of the global and local social indicators. Factor modeling revealed that all social economy models have a group of factors that characterize the general state of social development and the foundations for the economic socialization and medical care ensuring. The peculiarities, patterns of functioning and trajectories of social development of social economy modelshave been determined in the article. The obtained results and recommendations can be implemented when developing and revising social economy policy.

JEL Classification: *A13, B 55, C50.*

Key words: social economy models, global and local social indicators, pandemic, factor analysis, economic socialization

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1. INTRODUCTION

Global economic socialization, aimed at achieving the population welfare, is developing in the context of deepening of existing relationships and functioning of social economy models in the countries of the world. The research into social economy in the global dimensions is more topical than ever before, since existing global problems, such as international migration, military conflicts, the pandemic that spread throughout the world, require increasing efforts of global community in terms of the global social development. The social economy models, because of developed health care and social support system, have the potential to minimize the negative effects of pandemic. It means the coordination of health care, labor market, food and medicines provision.

The COVID-19 pandemic demonstrates the countries the dilemma between human health support and economy support. The global economy will contract by 2.2% because of COVID-19 pandemic (The Economist Intelligence Unit, 2020).The global recession will move into a phase of deleveraging (Halasiuk, 2020). The pandemic has led to manufacturing decline, currency devaluation, unemployment, inflation (NationalBankofUkraine, 2020), credit losses and bankruptcy of enterprises. Effective social economy model implementation with social support of population can overcome the social problems because of pandemic. Moreover, reducing social inequality in health care, as a part of international health work will prepare the world for pandemic (Mamelund, 2017).

2. LITERATURE REVIEW

The new global social trends, such as digitalization (Liuetal, 2019; Katz, 2017), ecologization (Dluhopolskyi et al., 2019), regionalization, informatization, intellectualization affect not only functioning of particular states and groups of people, but also all world community, actualizing the need to study the features, characteristics, patterns of social economy models`development in the global dimension. Thus, the factor analysis of global and local social indicators of social economy models will provide an opportunity to construct the social basis of each particular social economy model at the global level.

The social economy models had been studied by HalushkaZ. (2009), Esping-AndersenG. (1990), Sapir A. (2005). These scholars investigated 4 social economy models – Liberal, Continental, Scandinavian, and Mediterranean. In the research of Stukalo N. and SimakhovaA. (2018) the Transitive social economy models have been highlighted. The problem of countries` development comparisons based on macroeconomic indicators was analyzed by Baltgailis J. (2019).

The various aspects of social economy models` development and functioning have been studied by such scholars as KoziukV. Et al. (2018), MenshikovV.et al. (2017), Shmarlouskaya H. Et al. (2019), who investigated the typology of welfare states, social economy financing, peculiarities of global social development. The innovation aspects of social development in EU countries have been studied by Filyppova S. et al. (2019).

Despite significant achievements of scientists, no thorough research into the patterns of social economy models` development in COVID-19 pandemictimes was conducted.

3. AIMS

The purpose of the article is to research global and local social factors and indicators for each social economy model to highlight the main characteristics and patterns of these models in pandemic conditions

4. METHODS

Modeling of social economies of various countries around the world proved the existence of 5 social economy models: Liberal, Continental, Scandinavian, Mediterranean and Transitive. Each resulting cluster of the model of social economy has its core (Stukalo, Simakhova, 2018). Thorough analysis of the global and local social factors and indicators affecting the development of the social economy model core will allow making a conclusion about the main factors influencing the social economy model in the global and national parameters.

The core of the social economy model is determined by the indicator of distances to the cluster center. The country of the cluster, which has the shortest distance from the cluster center, is its conditional core. Thus, for the Transitive social economy model, the core is Belarus – 1.64 distance, Slovakia is the core for the Mediterranean social economy model – 1.398 distance, for the Liberal and Continental social economy models, united in one cluster, it is Ireland – 2.58 distance, for the Scandinavian social economy model, it is Sweden – 1.46 distance (Stukalo, Simakhova, 2018).

To assess the key factors influencing the distribution of countries by the social economy models, their factor analysis was conducted using the system of indicators for assessing the effectiveness of the social economy model of global and local social indicators:

- HDI (Human Development Index);
- SPI (SocialProgressIndex);
- IEF (Indexof Economic Freedom);
- GAWI (GlobalAgeWatchIndex);
- HPI (Happy Planet Index);
- Average monthly wages, USD;
- GDP per capita, USD;
- Inflation rate, %;
- Unemployment rate, %;
- Population growth, %;
- Migrants of the total population, %;
- Fertility rate per woman;
- Life expectancy at birth;
- Health care expenditures in GDP, %;
- Density of medical doctors per 1 000 population;
- State expenditures for education, % GDP;
- Population self-employment, % of employed population;
- Terrestrial and marine protected areas, % of total territorial area.

Moreover, such local social indicators as health care expenditures in GDP and density of medical doctors per 1 000 population show the country`s health care system development and its ability to withstand mass disease, that is important during COVID-19 pandemic (Dong L., BoueyJ., 2020).

The method of factor analysis is used to reduce the indicators by separating the hidden general factors that explain the relations between the factors of an object (local and global social indicators). Thus, instead of 18 social indicators, it will be possible to analyze the effectiveness of social economies models using fewer indicators.

The model of factor analysis is explored using the formula:

$$x_i^j = \bar{x}^j + \sum_{k=1}^{d} a_{jk} f_i^k + \varepsilon_{ij} \quad i = \overline{1,n};\ j = 1,d \text{ ,}$$

where n is the number of objects, each of which has d variables-characteristics $\left(x_i^j\right)$ $i = \overline{1,n};\ j = 1,d$;

$\bar{x}^j$ - is the mean for the j-th variable;

a_{jk} - is the loading on the j-th variable;

f_i^k - is the factor;

ε_{ij} - is the stochastic component.

For convenience of calculations, the global and local social indicators of Belarus will be accepted as X from X_1 to X_{18}, the social indicators of Slovakia – as У from $У_1$ to $У_{18}$, the social indicators of Ireland – as I from I_1 to I_{18}, the social indicators of Sweden – as G from G_1 to G_{18}.

To conduct the factor analysis, the principal component method was applied, the essence of which is the construction of global and local factors – the principal components (determinants), each of which represents a linear combination of the initial features. The use of the principal component method assumes the input indicators are highly correlated (multicollinear) and, as a result, they can be represented by a smaller number of uncorrelated hypothetical indicators (principal components) that would keep all information about the cause-effect mechanism of forming a certain phenomenon or a process and would not influence the accuracy of analysis.

5. RESULTS

The factor analysis was conducted using the Statistica 7.0 packet of analysis of global and local social indicators for the social economy models. Analysis of the correlation matrix allows estimating the degree of factors' correlation with each other, if this degree is high, it is possible to unite the factors into one factor.

To establish factors influencing the social development of countries, the variance of factors, which will be separated for each country, was calculated. In the principal component method, the variance of all variables is 1 (Khalafian, 2007). Moreover, when using the method of principal components, the number of these components coincides with the number of primary features, i.e. social indicators (18 global and local indicators). Thus, the maximum possible number of the selected factors equals the number of 18 social indicators.

It should be noted that in the principal component method, it is advisable to single out 3-4 main factors, since their greater number will result in a smaller percentage of dispersion of each factor from the general variance. Thus, 4 main social factors have been separated. Each factor has its own variance, which is explained by it, and these variances are called eigenvalues (see table 1).

The first generalized factor of global and local determinants of Belarus explains 63.3% of the cumulative, the second generalized factor – 19.7%, the third – 12.4% and the fourth –

4.6%. Calculations prove that three generalized factors have 95.4% of cumulative, which is a high indicator.

For Slovakia, the first generalized factor explains almost 68 % of the cumulative, the second – 19.7%. The other two factors explain less than 13 % of the cumulative. Together, 3 generalized factors of global and local determinants of Slovakia have 97.7% of the cumulative.

Table 1 Descriptive statistics of factor analysis for Belarus, Slovakia, Ireland and Sweden in 2013-2018

Source: author`s calculation from UNDP, (2019), Social Progress Index (2019), Index of Economic Freedom (2019), Barry A. et al. (2015), NEF (2016), World bank (2019), OECD (2019), WHO (2019)

Factors	Eigevalue	% Total variance	Cumulative Eigenvalue	Cumulative, %
Results of factor analysis for Belarus (Transitive model)				
Factor 1	11.39658	63.31434	11.39658	63.3143
Factor2	3.53823	19.65682	14.93481	82.9712
Factor3	2.22844	12.38022	17.16325	95.3514
Factor4	0.83675	4.64862	18.00000	100.0000
Results of factor analysis for Slovakia (Mediterranean model)				
Factor 1	12.23582	67.97679	12.23582	67.9768
Factor 2	3.54545	19.69696	15.78127	87.6737
Factor 3	1.79733	9.98515	17.57860	97.6589
Factor4	0.42140	2.34110	18.00000	100.0000
Results of factor analysis for Ireland (Liberal and Continental models)				
Factor1	14.42693	80.14958	14.42693	80.1496
Factor2	2.19497	12.19430	16.62190	92.3439
Factor 3	0.83112	4.61733	17.45302	96.9612
Factor4	0.54698	3.03879	18.00000	100.0000
Results of factor analysis for Sweden (Scandinavian model)				
Factor1	13.23585	73.53248	13.23585	73.5325
Factor 2	2.58925	14.38474	15.82510	87.9172
Factor 3	1.22462	6.80345	17.04972	94.7207
Factor4	0.95028	5.27933	18.00000	100.0000

According to the Table 1, for Ireland, the first generalized factor of global and local determinants explains 80.1% of the cumulative, which is a high indicator, the second generalized factor – 12, 2%. The third and fourth generalized factors explain less than 8 % of the cumulative. Two generalized factors of global and local determinants of Ireland have 92.3 % of cumulative.

The first generalized factor of global and local determinants of Sweden explains 73.5 % of the cumulative, the second generalized factor – 14.4% of the general variance. Together, these both generalized factors have 87.9 % of the cumulative.

Thus, 3 generalized factors of global and local determinants were separated for Belarus and Slovakia, while it was reasonable to separate two generalized factors for Ireland and Sweden. In the study, it is also important to establish the indicator content for each factor to determine the global determinates of social economy models` development.Each generalized factor for each country consists of a certain number of global and local social indicators.

The search for any simple factor structure, when *aij* (factor loading) approaches 1 or 0, is carried out with the help of different procedures of orthogonal or oblique angle rotation, in the process of which the value of some factors' loading increases, while the value of the others decreases. The Statistica 7.0 system offers four methods of factor loading rotation.

For this study the Varimax raw method have been used, as this method is applied to maximize variances of squares of incoming factor loading by variables for each generalized factor, which is equivalent to maximization of variances in the columns of a matrix of squares of incoming factor loading (Khalafian, 2007).

Table 2 Factor Loading for social indicators of Belarus (method Varimaxraw)

Source: author`s calculation from UNDP, (2019), Social Progress Index (2019), Index of Economic Freedom (2019), Barry A. et al. (2015), NEF (2016), World bank (2019), OECD (2019), WHO (2019)

Global and local social indicators	**Factor** 1	**Factor** 2	**Factor** 3
X_1	0.281455	0.297919	**0.885501**
X_2	**-0.941273**	-0.193546	0.069094
X_3	**-0.918074**	-0.306094	-0.091240
X_4	0.258282	**0.925970**	-0.275020
X_5	**0.899339**	0.391384	0.086675
X_6	0.291584	**0.877478**	0.341012
X_7	0.457625	**0.716880**	0.483613
X_8	0.532546	**0.821299**	0.199211
X_9	**0.899339**	0.391384	0.086675
X_{10}	0.315660	**-0.921074**	0.114111
X_{11}	-0.372380	**-0.883291**	-0.245145
X_{12}	0.767886	0.107049	-0.149454
X_{13}	-0.434010	**-0.898130**	0.069067
X_{14}	0.353498	**0.893142**	0.247228
X_{15}	**-0.899339**	-0.391384	-0.086675
X_{16}	**-0.732362**	0.317895	-0.591461
X_{17}	-0.584256	0.004223	**0.811380**
X_{18}	-0.899339	-0.391384	-0.086675
Expl. Var.	7.707060	6.993927	2.462262
Prpl. Totl.	0.428170	0.388551	0.136792

According to the Table 2 the first generalized factor of global and local determinants of Belarus consists of 6 global and local social indicators: SPI (X_2), IEF(X_3), HPI (X_5), unemployment rate, % (X_9), densityofmedicaldoctorsper 1 000 population(X_{15}), state expenditures for education, % GDP (X_{16}). However, there is a close correlation between indicators X_5 and X_9. Thus, in the subsequent research, these two local social indicators will not be included to the composition of the generalized factor 1 of global and local determinants of Belarus. The other four local social indicators, included in the first generalized factor, have negative values of factor loading, which proves that a decrease in the values of these indicators negatively affects the state of social development of Belarus. According to its content, the first generalized factor characterizes the general state of social development of a countryin the COVID-19 pandemic conditions.

The second generalized factor of global and local determinants of Belarus consists of a bigger number of social indicators: GAWI (X_4), average monthly wages, USD (X_6), GDP per capita, USD (X_7), inflation rate, % (X_8), population growth, % (X_{10}), migrants of the total population, % (X_{11}), life expectancy at birth (X_{13}), health care expenditures in GDP, % (X_{14}). A high pair correlation exists between local social indicators X_{11} and X_{13}, thus they will not be considered in the composition of the second generalized factor of Belarus. It is possible to interpret the content composition of the second generalized factor as the base of economic socialization of Belarus.

The third generalized factor of global and local determinants of Belarus consists only of two social indicators – HDI (X_1) and population self-employment, % of employed population (X_{17}). Thus, the third generalized factor can be meaningfully interpreted in content as the potential of the population to self-reliance and self-realization.

Two local social indicators of Belarus were not included in any of the generalized factors – the birth rate level per woman (X_{12}) and terrestrial and marine protected areas, % of total territorial area (X_{18}). These two indicators for Belarus do not influence the economic socialization of the country.

Table 3 Factor Loading for social indicators of Slovakia (method Varimax raw)

Source: author`s calculation from UNDP, (2019), Social Progress Index (2019), Index of Economic Freedom (2019), Barry A. et al. (2015), NEF (2016), World bank (2019), OECD (2019), WHO (2019)

Global and local social indicators	Factor 1	Factor 2	Factor 3
$У_1$	**0.930884**	0.270599	0.245004
$У_2$	-0.035234	**0.912596**	0.078843
$У_3$	-0.484629	**-0.823125**	0.295636
$У_4$	**0.834872**	0.225871	0.501480
$У_5$	**-0.955125**	-0.288741	-0.065504
$У_6$	0.267833	**0.915353**	0.092047
$У_7$	0.696904	0.664723	0.258167
$У_8$	-0.649326	-0.257273	**-0.713013**
$У_9$	-0.671250	**-0.700693**	-0.229506
$У_{10}$	0.339979	**0.912642**	0.090078
$У_{11}$	**0.911165**	0.405244	0.071690
$У_{12}$	0.548274	0.118609	**0.827269**
$У_{13}$	-0.046319	-0.073628	**0.995683**
$У_{14}$	**-0.955125**	-0.288741	-0.065504
$У_{15}$	0.429400	**0.863783**	0.075636
$У_{16}$	**0.941333**	0.276938	0.192449
$У_{17}$	**-0.749557**	0.526620	-0.327599
$У_{18}$	**0.955125**	0.288741	0.065504
Expl. Var.	8.846949	5.838381	2.893272
Prpl. Totl.	0.491497	0.324354	0.160737

According to the Table 3 the first generalized factor of global and local determinants of Slovakia is the most numerous by the composition of global and local social indicators: HDI ($У_1$), GAWI ($У_4$), HPI ($У_5$), migrants in the total population ($У_{11}$), health care expenditures in the GDP, % ($У_{14}$), state expenditures for education, % of GDP ($У_{16}$), population self-employment, % of employed population ($У_{17}$), terrestrial and marine protected areas, % of total territorial area ($У_{18}$).In the study, local factors $У_5$, $У_{14}$, $У_{18}$ will not be considereddue to the high pair correlation. According to its content, the first generalized factor of global and local determinants of Slovakia can be characterized as the general state of social development of a country in the context of COVID-19 pandemic.

The second generalized factor of global and local determinants of Slovakia includes 6 global and local social indicators: SPI ($У_2$), IEF ($У_3$), average monthly wages, USD ($У_6$), unemployment rate, % ($У_9$), population growth, % ($У_{10}$), densityofmedicaldoctorsper 1 000 population($У_{15}$). Local social indicator $У_{10}$ has a high pair correlation with all other components of the local indicators of the generalized factor 2, so in the further study this indicator will not be taken into account in the generalized factor 2. By its content, the second generalized factor of Slovakia can be interpreted as the potential of economic socialization in terms of ensuring the population welfare.

The third generalized factor of global and local determinants of Slovakia consists of three local social indicators: inflation rate, % ($У_8$), life expectancy at birth ($У_{13}$), birth rate per woman ($У_{12}$). Local social indicators $У_8$ and $У_{12}$ have a high pair correlation between themselves, by content, indicator $У_8$ does not correspond to the composition of the third generalized factor, thus, it will not be considered in further research. In content, this factor reflects the demographic situation in the country.

The local social indicator GDP per capita, USD ($У_7$) was not included in any generalized factors of global and local determinants of Slovakia.

Table 4 Factor Loading for social indicators of Ireland (method Varimax raw)

Source: author`s calculation from UNDP, (2019), Social Progress Index (2019), Index of Economic Freedom (2019), Barry A. et al. (2015), NEF (2016), World bank (2019), OECD (2019), WHO (2019)

Global and local social indicators	**Factor** 1	**Factor** 2
I_1	-0.304100	**-0.945413**
I_2	**-0.944367**	-0.282494
I_3	**-0.705525**	-0.268760
I_4	0.345011	**0.936123**
I_5	**0.922729**	0.226151
I_6	**0.816629**	0.532334
I_7	**-0.743094**	-0.654088
I_8	0.525701	0.831600
I_9	**0.772271**	0.627505
I_{10}	**-0.750041**	-0.659608
I_{11}	**-0.735893**	-0.613033
I_{12}	0.147371	**0.946070**
I_{13}	-0.551160	**-0.831981**
I_{14}	0.640898	0.664560
I_{15}	**-0.922729**	-0.226151
I_{16}	0.163874	**0.948363**
I_{17}	**0.940721**	0.247801
I_{18}	-0.640898	-0.664560
Expl. Var.	8.558703	8.063197
Prpl. Totl.	0.475484	0.447955

The first generalized factor of global and local determinants of Ireland is the most numerous and consists of such global and local social indicators (see Table 4): SPI (I_2), IEF(I_3), HPI (I_5), average monthly wages, USD (I_6), GDP per capita, USD (I_7), unemployment rate, % (I_9), population growth, % (I_{10}), migrants in total population (I_{11}), densityofmedicaldoctorsper 1 000 population(I_{15}), population self-employment, % of employed population (I_{17}). Two local indicators – I_6 and I_{10} have high pair correlation with other local indicators of the first generalized factor,thus, they will not be considered as a part of the generalized factor in the subsequent research. By its content, the first generalized factor of global and local determinants of Ireland characterizes the general state of social development of the country in the COVID-19 pandemic context.

The second generalized factor of global and local determinants of Ireland consists of such global and local social indicators as: HDI (I_1), GAWI (I_4), life expectancy at birth (I_{13}), birth rate per woman (I_{12}), state expenditures for education, % GDP (I_{16}). Global social indicator I_1 has high pair correlation with other social indicators, so in further research it will be considered as a part of generalized factor 2. By content, the second generalized factor of global and local determinants of Ireland can be characterized as the demographic situation in the country.

Three local social indicators of Ireland: inflation rate, % (I_8),terrestrial and marine protected areas, % of total territorial area(I_{18})and expenditures for health care in GDP, % (I_{14})

were not included to the generalized factors, thus, they do not influence the development of social economy of Ireland. Particularly it is important that the local social indicator as expenditures for health care in GDP was not included to the generalized factors in the conditions of COVID-19 pandemic. And now on the contrary the mobilization of health system is required.

Table 5 Factor Loading for social indicators of Sweden (method Varimax raw)

Source: author`s calculation from UNDP, (2019), Social Progress Index (2019), Index of Economic Freedom (2019), Barry A. et al. (2015), NEF (2016), World bank (2019), OECD (2019), WHO (2019)

Global and local social indicators	Factor 1	Factor 2
G_1	**0.959711**	0.278037
G_2	**0.888759**	0.112718
G_3	0.146912	**0.975582**
G_4	**-0.936977**	-0.320469
G_5	-0.399258	**-0.904855**
G_6	**-0.832151**	-0.527619
G_7	0.585606	0.562999
G_8	0.172320	**0.965416**
G_9	**-0.703933**	-0.699506
G_{10}	0.623419	**0.742747**
G_{11}	**0.864520**	0.403099
G_{12}	0.178767	0.692903
G_{13}	0.640963	-0.148103
G_{14}	**-0.862820**	-0.383485
G_{15}	0.399258	**0.904855**
G_{16}	**-0.862820**	-0.383485
G_{17}	**-0.721018**	-0.678532
G_{18}	-0.399258	**-0.904855**
Expl. Var.	8.236917	7.588182
Prpl. Totl.	0.457606	0.421566

According to the table 5 the first generalized factor of global and local determinants of Sweden is the most numerous and consists of the global and local social indicators, such as: SPI (G_2), HDI (G_1), GAWI (G_4), average monthly wages, USD (G_6), unemployment rate, % (G_9), migrants in the total population (G_{11}), health care expenditures in GDP, % (G_{14}), state expenditures for education, % GDP (G_{16}), population self-employment, % of employed population (G_{17}). Global social indicator G_1 and local social indicator G_{11} have a high pair correlation with all the other local indicators of the first generalized factor. Both these social indicators will not be considered in further research. It is possible to interpret the first generalized factor as the general state of social development of Sweden in the context of pandemic.

The second generalized factor of global and local determinants of Sweden included 6 global and local social indicators: IEF (G_3), HPI (G_5), inflation rate, % (G_8), population growth, % (G_{10}), densityofmedicaldoctorsper 1 000 population (G_{15}), terrestrial and marine protected areas, % of total territorial area (G_{18}). Such local social indicators, as densityofmedicaldoctorsper 1 000 population (G_{15}), terrestrial and marine protected areas, % of total territorial area (G_{18}) have high pair correlations, they will not be considered as a part of the second generalized factor. It is possible to interpret the content of factor 2 as the base of economic socialization of Sweden.

No generalized factors included three local indicators: GDP per capita, USD (G_7), life expectancy at birth (G_{13}), birth rate per woman (G_{12}), which according to the research results, do not influence considerably the social development of Sweden.

6. DISCUSSION

In all three models, the local social indicator terrestrial and marine protected areas, % of total territorial area was not included in any generalized factor. This fact proves that the ecological component of the development of social economy both for classical models, and for the transitive model of social economy does not play any significant role. Each social economy model has factors that reflect the state of health care system development. Summarized information of factor modeling has been shown in Table 6.

Table 6 Generalized results of factor modeling for social economy models in the global dimension

Social economy model	Generalized factors of global and local determinants		Social indicators, that were not included to the generalized factors
	Characteristics	Global and local indicators of the generalized factors	
Transitive social economy model	First generalized factor of the social development indicators. The general state of social development of the country.	SPI,IEF, density of medical doctors per 1 000 population, state expenditures for education, % GDP	The birth rate level per woman and terrestrial and marine protected areas, % of total territorial area.
	Second generalized factor of the social development indicators. The base of economy socialization	GAWI, average monthly wages, GDP per capita, USD, inflation rate, %, population growth, %, health care expenditures in GDP, %.	
	Third generalized factor of the social development indicators. The potential of the population to self-reliance and self-realization	HDI; population self-employment, % of employed population	
Mediterranean socialeconomy model	First generalized factor of the social development indicators. The general state of social development of the country.	HDI,GAWI, migrants in the total population, state expenditures for education, % of GDP, population self-employment, % of employed population	GDP per capita
	Second generalized factor of the social development indicators. The base of economy socialization	SPI, IEF, average monthly wages, unemployment rate, %, density of medical doctors per 1 000 population	
	Third generalized factor of the social development indicators. The demographic situation in the country	Life expectancy at birth, birth rate per woman	
Liberal and Continental social economy models	First generalized factor of the social development indicators. The general state of social development of the country.	SPI, IEF, HPI, GDP per capita, unemployment rate, migrants in total population, density of medical doctors per 1 000 population, population self-employment, % of employed population	Inflation rate, %,terrestrial and marine protected areas, % of total territorial area and expenditures for health care in GDP, %
	Second generalized factor of the social development indicators. The demographic situation in the country	GAWI, life expectancy at birth, birth rate per woman, state expenditures for education, % GDP	
Scandinavian social economy model	First generalized factor of the social development indicators. The general state of social development of the country.	SPI, GAWI, average monthly wages, unemployment rate, %, health care expenditures in GDP, %, state expenditures for education, % GDP, population self-employment, % of employed population	GDP per capita, life expectancy at birth, birth rate per woman
	Second generalized factor of the social development indicators. The base of economy socialization	IEF, HPI, inflation rate, %, population growth, %	

According to the Table 6 it can be analyzed that all social economy models have a group of factors characterizing the general state of social development, the basis of the economic socialization ensuring in COVID-19 pandemic conditions. The health care system development factors and its ability for the social economy well highlighted also by other authors (DongL., BoueyJ., 2020).Three models of social economy (Liberal, Continental and Mediterranean) have generalized factors of social development indicators that characterize the demographic situation in the country.

The group of indicators that determine the potential of population self-reliance and self-realization was separated in the transitive model of social economy. This is extremely important for the transitive model of social economy, as the transformation of the social sphere and the base takes place in it, and the ability of population for self-realization and self-reliance here serves as the main characteristic of social transforming economy, especially in the conditions of pandemic.

7. CONCLUSION

The conducted factor modeling of global and local social indicators made it possible to form the basis of the factors influencing the development of social economy models in the global dimensions and COVID-19 pandemic conditions. The transitive model of social economy is characterized by a wide range of global and local social indicators. Its main characteristics are the following: state support and funding of social sphere, focusing on ensuring the socialization of economies of countries and creation of conditions for population self-reliance. The creation of the favorable environment for human development, setting up private businesses and population self-employment leads to the effective foundation for increasing the living standards of population in all countries with the transitive model of social economy, especially in the context of pandemic.

The Mediterranean social economy model is characterized by special attention to the demographic situation in countries, creating a basis for self-reliance of citizens, state subsidies to population and the social sector.

The Liberal and Continental social economy models are characterized by high positions in rankings of global social indices, high standards of living and incomes of population, high indicators of population self-employment and self-reliance, high life expectancy and regulation of migration and demographic processes.

The main characteristics of the Scandinavian model are the following: anthropocentric economy, high standards of living, wages, population self-employment, health care and education, as well as a high level of governance and state intervention in the specified spheres.

Now no country in the world can defeat the COVID-19 pandemic itself, only joint global efforts. Such changes in global social economy are necessary: the global resistance to infections strengthening and development of programs to support the most vulnerable population in the world because of the COVID-19 pandemic (Kissinger H., 2020).

Thus, the global determinants of the social economy models` development reflect the peculiarities, patterns of functioning and trajectories of social development of these models in the pandemic conditions and can be practically used by governments in social economy policy forming. The global recession will lead to a new economic reality and effective social policy with the risk-oriented model of health care that focuses on the infected people and risk groups.

Directions for the further scientific research include studying social economy potential to overcome the pandemic impact on population well-being.

REFERENCES

[1] Baltgailis, J. (2019). The issues of increasing the effectiveness of teaching comparative economics, *Insights into Regional Development* 1(3): 190-199. https://doi.org/10.9770/ird.2019.1.3(1)

[2] Barry, A., McGwire, S., &Porter, K. (2015). *Global Age Watch Index*. *Insight report*. London, UK: HelpAge International

[3] Dong, L, &Bouey, J. (2020). Public mental health crisis during COVID-19 pandemic, China. *Emerg Infect Dis*. doi: 10.3201/eid2607.200407

[4] Esping-Andersen, G. (1990). *The Three Worlds of Welfare Capitalism*. Princeton, New Jersey :Princeton University Press.

[5] Filyppova, S., Okulich-Kazarin, V., Kibik, O., Grygoriy Shamborovskyi, G., & Cherkasova, S. (2019). Influence of the market of business intellectual services on the innovation safety of EU countries, *Journal of Security and Sustainability Issues,* 9(1), 347-360. doi: 10.9770/jssi.2019.9.1(26)

[6] Dluhopolskyi O., Koziuk V., Ivashuk Y., Panukhnyk O., & Virkovska A. (2019) Empirical evaluation of preferences by ecological factors of individual welfare of Ukrainians, *Journal of Geology, Geography and Geoecology, 28(1), .39-50.*

[7] Halasiuk, V. (2020) *Great deleveraging. What will happen to the economy after the Coronavirus*. Retrieved April 8, 2020, from https://nv.ua/ukr/biz/experts/globalna-ekonomika-pislya-pandemiji-koronavirusu-shcho-bude-i-chim-vse-zakinchitsya-viktor-galasyuk-50080230.html(in Ukr.).

[8] Halushka, Z. I. (2009). *Socialization of transformation economy: characteristics, problems and priorities*. Chernivtsi: Chernivtsi national university (in Ukr.).

[9] Index of Economic Freedom (2020).Retrieved April 8, 2020, fromhttp://www.heritage.org

[10] Katz, R. L. (2017) Social and economic impact of digital transformation on the economy. *GS-17 Discussion Paper*, 1, 41.

[11] Khalafian, A.A. (2007) *STATISTICA 6. Statistical data analysis*. Moscow: OOO «Binom-Press». (in Rus.).

[12] Kissinger H., (2020) *The Coronavirus Pandemic Will Forever Alter the World Order,* Retrieved April 8, 2020, from https://www.wsj.com/articles/the-coronavirus-pandemic-will-forever-alter-the-world-order-11585953005

[13] Koziuk V., Dluhopolskyi O.V., Hayda Y., & Shymanska O. (2018) Typology of welfare states: quality criteria for governance and ecology, *Problems and Perspectives in Management*, 16 (4), 235-245, doi: 10.21511/ppm.16(4).2018.20.

[14] Liu, M., Wu, K., & Xu, J. J. (2019). How Will Blockchain Technology Impact Auditing and Accounting: Permissionless versus Permissioned Blockchain. *Current Issues in Auditing*, *13*(2), A19-A29.

[15] Mamelund S.E. (2017). Social inequality – a forgotten factor in pandemic influenza preparedness, Retrieved July 10, 2020, from https://tidsskriftet.no/2017/05/global-helse/social-inequality-forgotten-factor-pandemic-influenza-preparedness

[16] Menshikov V., Volkova O., Stukalo N., & Simakhova A. (2017). Social economy as a tool to ensure national security, *Journal of Security and Sustainability Issues*, 2, 211-231. doi: 10.9770/jssi.2017.7.2(4).

[17] National Bank of Ukraine (2020). *Week in Review, 2020-04-02*.Retrieved April 8, 2020, from https://bank.gov.ua/admin_uploads/article/Week_in_review_2020-04-02.pdf?v=4

[18] NEF (2016).*The Happy Planet Index 2016*.Retrieved April 6, 2020, fromhttp://www.happyplanetindex.org

[19] OECD (2019). *Average wages*. Retrieved December 18, 2019, from https://data.oecd.org/earnwage/average-wages.htm#indicator-chart

[20] Sapir, A. (2005). Globalization and the Reform of European Social Models (Background document for the presentation at ECOFIN informal Meeting in Manchester, 9 Sept. 2005). Retrieved April 2, 2020, from http: //www.bruegel.org

[21] Social Progress Index (2019). Retrieved April 6, 2020, from https://www2.deloitte.com.

[22] Stukalo, N., & Simakhova, A. (2018). Global parameters of social economy clustering. *Problems and Perspectives in Management* (open-access), 16(1), 36-47. doi: 10.21511/ppm.16(1).2018.04

[23] Stukalo, N., Simakhova, A., & Shmarlokaya, H. (2019). Special features of formation of the source base for economic socialization. *Problems and Perspectives in Management*, 17(3), 271-279, doi: 10.21511/ppm.17(3).2019.22.

[24] The Economist Intelligence Unit (2020). *COVID-19 to send almost all G20 countries into a recession*, Retrieved April 8, 2020, from https://www.eiu.com/n/covid-19-to-send-almost-all-g20-countries-into-a-recession/

[25] UNDP (2019).Human Development Data (1990-2018). Retrieved December 18, 2019, from http://hdr.undp.org/en/data#

[26] WHO (2019). *World health statistics 2019*. Retrieved April 2, 2020, from https://apps.who.int/iris/bitstream/handle/10665/324835/9789241565707-eng.pdf?ua=1

[27] World Bank (2020) *The world bank indicators*, Retrieved December 18, 2019, fromhttps://data.worldbank.org/indicator?tab=all