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DETERMINATION OF POSITIONS OF UKRAINE IN GLOBAL DIGITAL ECONOMY INDICES ON THE BASIS OF THE LOCAL GOVERNMENTS

The authors determine the positions of Ukraine in global digital economy indices on the basis of the local governments. The authors indicate the following subsystems of providing the digital economy infrastructure: technical (ICT capabilities in terms of individual sectors of the economy); information and technological (digital technologies); staffing (human capital); regulatory (institutional environment); financial and economic (investment opportunities of economic entities). The authors indicate a number of generally accepted parameters that allow to determine the level of digitalization within the economy and society: Internet coverage; the use of broadband Internet; the percentage of smartphone owners; mobile Internet coverage; the share of society with

digital skills, public online services, etc. The authors propose to use the following main rating indices of digitalization: Digital Economy and Society Index (DESI); Digital Evolution Index (DEI); Digital Adoption Index (DAI); ICT Development Index (IDI); Global Innovation Index (GII); Networked Readiness Index (NRI); Digitization Index of the Economy (Boston Consulting Group – e-Intensity); IMD World Digital Competitiveness Index (WDCI).

***Keywords:** public administration, digital economy, global indices, digital economy infrastructure, local governments.*

Formulation of the problem. The transition to a digital economy is an element of national security, the competition of the domestic economy in the global space in the long term. However, the existence of concepts of state development programs that are not reflected in real steps demonstrates the inefficiency of development in this direction. In this context, for the development of the domestic digital economy, it is necessary to create an effective infrastructure for the interaction of state bodies with society and business to optimize various socio-economic processes and to create favorable conditions for the digital transformation of production and the introduction of digital innovations in entrepreneurship. The prospect of further research is the study of digital quality of life, the use of digital technologies in the education and labor market.

Analysis of recent research and publications. The authors (Agung Purnomo, Triana Susanti, Elsa Rosyidah, Nuzula Firdausi, Mohammad Idhom, 2022) note that digital economy research continues to evolve, but is limited to one country or area. This study is aimed at the visual study of mapping and research of trends in the field of the digital economy on an international scale. This study analyzed 2,784 scientific papers published from 1984 to 2019. This study proposes the followin grouping of research topics on the digital economy: information systems, digitization, e-commerce, education, engineering, marketing, industrial revolutions and information technology, abbreviated as IDEEEMII research topics.

The authors (Wang, Q. & Wei, Y., 2023) think that the impact of the digital economy on enterprise technological innovation has been investigated with the Moran index model and panel regression. All Moran indices were greater than 0, and the data were concentrated in the first and third quadrants of the scattering diagram. The results of the study indicate that the digital economic development of the province is a phenomenon of aggregation in spatial distribution. Regression coefficients are significant, at least at 10%, indicating that the digital economy can effectively promote the quantity of technological innovation in manufacturing plants. The digital economy has a dual spurring effect on technological innovation.

The paper (Li, Q. & Zhao, S., 2023) focuses on analyzing how the digital economy affects industrial restructuring and examining the mediation role of relevant factors. Based on the analysis of the mechanism of influence of the development of the digital economy on the restructuring of industry, an improved system of measuring indices of the digital economy was built, covering digital infrastructure, digital industrialization and digitalization of industry, which measures regional digital economic growth.

Despite the large number of developments presented by scientists and practitioners in the field of digital economy, determination of the place of Ukraine with the digital economy indices still remains especially relevant.

Accordingly, the purpose of the work is to determine the positions of Ukraine in global digital economy indices on the basis of the local governments.

Presenting main material. First of all, it is necessary to identify the key components of the basic infrastructure of the digital economy, while we will proceed from the logic that the infrastructure of the digital economy is a complex of interconnected and complementary subsystems for ensuring the effective interaction of subjects of the digital economy in order to optimally meet their needs in digital goods and services in resource constraints. The main subsystems of providing the digital economy infrastructure are the following:

1) technical (ICT capabilities in terms of individual sectors of the economy);

2) information and technological (digital technologies);

3) staffing (human capital);

4) regulatory (institutional environment);

5) financial and economic (investment opportunities of economic entities) [1; 5].

It should be noted that the distinction between individual subsystems and components of the digital economy infrastructure is somewhat conditional, since, for example, the introduction of digital technologies into the practical activities of individual economic entities within the economy requires technical and financial capabilities. Digitalization of the economy characterizes the general state of digital transformations in the process of organizing of socio-economic relations in the conditions of three sector models of society, which corresponds to domestic realities and includes: citizens (society), business (economy) and the state (government) [2; 6].

The development of a basic scorecard for monitoring the digitalization of the economy and social relations is carried out by many influential international organizations, institutions and various analytical agencies. There are a number of generally accepted parameters that allow you to determine the level of digitalization within the economy and society; the main indicators in this context include:

1) Internet coverage;

2) the use of broadband Internet;

3) the percentage of smartphone owners;

4) mobile Internet coverage;

5) the share of society with digital skills, public online services, etc. [3; 4]

The most common methods for assessing the state of development of the digital economy are the formation of rating indices. The main rating indices of digitalization include:

1) Digital Economy and Society Index (DESI);

2) Digital Evolution Index (DEI);

3) Digital Adoption Index (DAI);

4) ICT Development Index (IDI);

5) Global Innovation Index (GII);

6) Networked Readiness Index (NRI);

7) Digitization Index of the Economy (Boston Consulting Group – e-Intensity);

8) IMD World Digital Competitiveness Index (WDCI) [1; 3].

Some scientists add the Global Competition Index to the above list, however, we believe that the given index can only be considered conditionally an indicator of the development of the digital economy, since the global competitiveness index measures a set of institutions, policies and factors that recognize stable current and medium-term levels of economic prosperity without separate detail of the specific components associated with the development of digitalization.

For further in-depth analysis of the digital economy development indices proposed above, we will use the following methodical approach – we will analyze the indices according to three main criteria that, in our opinion, are quite consistent with the objectives of the study:

1) we will determine the popularity (significance) of the index (that is, the frequency with which a particular index occurs (is mentioned) when making relevant requests on the sites of the Google search engine), in order to increase the objectivity of the study, we will use the English version of the index names;

2) we will identify the representation of our state in each index (presence or absence), which are chosen for an in-depth study in order to determine the place of Ukraine in comparison with the countries of the nearest geographical neighbors;

3) we will outline the time frame (period) for the representation of our state in the above indices in order to identify the dynamics of changes that occur in our state under the influence of factors of general digitalization of the world's economies [2; 5].

This will allow to describe the existing trends in the country's economy in further studies with reference to the change of individual digitalization indices and to outline possible promising directions for digitalization of the domestic economy with a minimum investment burden.

The results of the analysis of the main rating indices of digitalization and the description of the representation of our state in them are reflected in table 3, on the basis of which we will get for further research the indices in which our state is represented.

Analyzing the data of table 1, we can state that the most popular and recognizable in the modern world is the Global Innovation Index (GII), since the number of mentions when making requests on Google search engine websites on the Internet is 457 million units. The second most popular one is the Digital Adoption Index (DAI) – 191 million mentions. The Digital Evolution Index (DEI) and the Digital Economy and Society Index (DESI) are not represented, so they are not mentioned according to the methodology described above [3; 4].

Also, based on the data of Table 1, we consider it appropriate to analyze in detail the third in demand the ICT Development Index (IDI), which has quite high popularity on the Internet (70.7 million mentions) and in which our state has been represented since 2002. The Global Innovation Index (GII) is a global study of the INSEAD International Business School, Cornell University (USA) and the World Intellectual Property Organization. The study analyzes the level of innovation in institutions, education, infrastructure and business (it has 82 different variables) on the basis of which the corresponding rating is formed [4; 7].

Table 1. Analysis of the rating indexes of digitalization and Ukrainian presence in them (December 2020)

The name of the Index	Popularity of the Index	Presence of Ukraine	The period of presence of Ukraine
Digital Economy and Society Index	107000	-	-
Digital Evolution Index	173000	-	-
Digital Adoption Index	191000	+	2014
ICT Development Index	70700	+	2002
Global Innovation Index	457000	+	2007

Networked Readiness Index	897	+	2002
Digitization Index of the Economy	7990	+	2011
IMD World Digital Competitiveness Index	16600	+	2014

In 2020, 131 countries fell to this rating, which is at different levels of innovative development. Given the high dynamism of the innovation process, the list of basic indicators is periodically updated and is supplemented. GII indicators cover the components of the innovation sphere and are combined into two subindexes:

1) the 1st – 55 indicators characterize the innovation potential of the country - the Innovation Input Subindex;

2) the 2nd – 27 indicators characterize the scientific and creative results of innovation activity and form the Innovation Output Subindex [1-5].

Conclusions. Thus, the analysis of the data presented in table 6 allows us to argue that the indicators of the development of information and communication technologies (according to the IDI index) in our closest neighbors significantly exceed the indicators of our state. It is a shame to admit, however, Ukraine is the worst among countries that have common borders, both in the east and in the west, in terms of the development of information and communication technologies, which requires the development at the state level of effective mechanisms for implementing measures to overcome the digital gap. A comprehensive study of the place of our state in the world space (according to the IDI index) involves a comparison of indicators of the development of information and communication technologies in Ukraine and on average in the world (the total average value for all 167 countries present in the IDI index).

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