

INSTITUTIONAL FOUNDATIONS OF THE REGIONS' DIGITALIZATION

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Abstract

The article is devoted to the study of the institutional foundations of the regions' digitalization. Approaches to understanding and interpreting the essence of the concept of "digitization of the region" were considered, which made it possible to group them into four approaches: scientific, practical, regional and social. It has been proven that the process of forming the regions' digital economy is significantly dependent on the institutional environment. It was determined that this is a set of socio-economic and political norms and rules that serve as the basis for the structural construction and relationships between the components of the digital economy. The following functions of the institutional environment are distinguished: integrative, stimulating, social, distributive, informational, and revenue. The concept, essence, possible variants of the relationship and interaction of formal and informal rules and norms are considered. The concept and essence of development institutes are clarified.

Keywords: digital economy, digitalization, institutional environment, institutional foundations, region, regional socio-economic system, development institutions.

JEL Codes: R 11; R 12, R 58.

Introduction

The transformation of the socio-economic regional system through the introduction of modern digital technologies is a systemic phenomenon that includes a certain number of processes. One of the leading ones is that significantly affects all spheres of life - the process of regions' digitalization.

The functioning and development of the digital economy significantly depends on the parameters of the institutional environment's quality. And, therefore, the modern problems

of regions' socio-economic development in most cases are connected with its inefficiency. The inability of institutions to ensure the effective functioning and development of the regions' economic system should be considered as the result of a certain set of factors, primarily such as lack of information; inability of state authorities to quickly adapt to changes in the external environment; high level of bureaucracy of state and regional authorities; insufficient control over their

activities. Research on the institutional foundations of regions' digitalization and similar directions indicate the prevalence of such processes in most countries of the world. The current global trend is that if formal institutions do not sufficiently implement their functions, they are replaced by informal ones. Such trends lead to the distortion of economic relationships in various spheres of life, increase the risk level of the functioning of both national and regional economies and decrease the level of their competitiveness. Based on the above, within the framework of the study of the institutional foundations of regions' digitalization, it is relevant to clarify and specify the essence of regions' digitalization, the institutional environment of digitalization and its functions.

However, due attention has not been paid to the issue of institutional foundations of regions' digitalization, their research and thorough study, which determined the topic and purpose of this scientific work.

The purpose of the article is to study the institutional foundations of regions' digitalization in modern conditions.

Literature review

The digital economy as a new socio-economic system, which is formed on the basis of new technological possibilities, is the object of many scientific works. However, there are fewer economic studies in this direction than might be expected. The following foreign and domestic scientists devoted their works to the theoretical and practical aspects of the formation, functioning and development of digitalization: Djakona et. al. (2021), Kholiavko et. al. (2022), Kosach et. al. (2022), Popelo et. al. (2021), Shaposhnykov et. al. (2021) and Zhavoronok et. al. (2022).

Regional aspects of the digital economy are given attention in the works Dubois et. al. (2022), Grigoraş-Ichim et. al. (2018), Grosu et. al. (2021), Samiilenko et al. (2021). The article Tulchynska et. al. (2022) is devoted to the development of methodical approaches to the evaluation of innovations in the regions, taking into account modern digitalization processes. The scientific research Samoilovych et. al.

(2021) is based on the analysis of world experience and the study of Ukrainian realities of the regions' digital transformation.

Despite the large number of existing scientific works in the field of regions' digitization, the aspect of its impact on institutional foundations in general, and the institutional environment in particular, remain relevant for research and analysis.

Methodical approach

Within the scope of the scientific work, such methods of scientific research as the method of analysis and synthesis, induction and deduction, scientific abstraction, institutional method were used to clarify the essence of regions' digitalization, the institutional environment of digitalization, consideration of formal and informal norms and rules of digitalization and establishment of relationships between them. A graphic method was used for a visual presentation of approaches to the concept of "digitization of the region" interpretation and the functions of the institutional environment of regions' digitization. The use of such a combination of the indicated methods of scientific research allows, in our opinion, to achieve a high level of objectivity and thoroughness of the study of the institutional foundations of regions' digitalization.

Results

Digitalization is the leading global trend today, which has led to the emergence, formation and development of the era of digital globalization, which is characterized by a large amount of information, various knowledge, ideas, and data flows. Currently, it is estimated that approximately twenty-five percent of the world economy is driven by digital technologies. Developed countries and their regions have moved from the industrial age to the digital age, allowing them to rapidly generate and implement innovations related to automation, robotics, digital platforms, etc.

The main goal of digitization processes in the region's economy is to transform the operating system into a more adapted and

quickly responsive to permanent changes in the environment and modern conditions, which contributes to increasing the level of the state's and regions' competitiveness in the world of digitization. Therefore, digitalization is a way of obtaining a planned result that meets the requirements and needs of the state, regions, societies and business. Digitalization also means the concentration of digital devices, systems, complexes, etc., and the establishment of information exchange processes between them, which leads to the formation of cyber-physical space.

Regarding digitization of the regional economy, it should be noted that this concept can be interpreted in two meanings - a broad and a narrower one. In a narrow interpretation, this definition means the formation of digital platforms at the regional economic level, which contribute to overcoming various problems and achieving the fulfillment of strategic tasks, such as the effective functioning of the medical field, the transport system, the scientific and educational sector, regional management and regulation, etc. In a broad sense – transformation of operational and economic relations in the region, transformation of their subjective-objective orientation.

Regions' digitization means the achievement of accessibility, speed and ease through the implementation of the digitization process of everything possible and the introduction of systems' and workplaces'

computerization. There is also an interpretation that regions' digitalization is the introduction of digital technologies with the aim of transforming business models and obtaining advantages and opportunities in achieving profitability. In this case, the emphasis is not on social transformations, but on business ones, which gives us the opportunity to distinguish an approach to understanding this definition from the point of view of entrepreneurs and practitioners.

Another approach to the interpretation of regions' digitalization is to equate it with automation, which, in our opinion, is not entirely correct, since the process of automation is more aimed at reducing human participation in the operational activities of a certain socio-economic system, while digitalization makes it possible to transition to new management, business models and a new level of functioning.

Some scientists consider the regions' digitization through the division of its economic system into three components: the first is the agricultural sector, the second is the industrial sector, and the third is the service sector, while the transformation under the influence of digitalization will affect all components.

Thus, based on the above information, four approaches to the interpretation of the concept of the regions' digitization can be distinguished: scientific, regional, social and practical (Fig. 1).

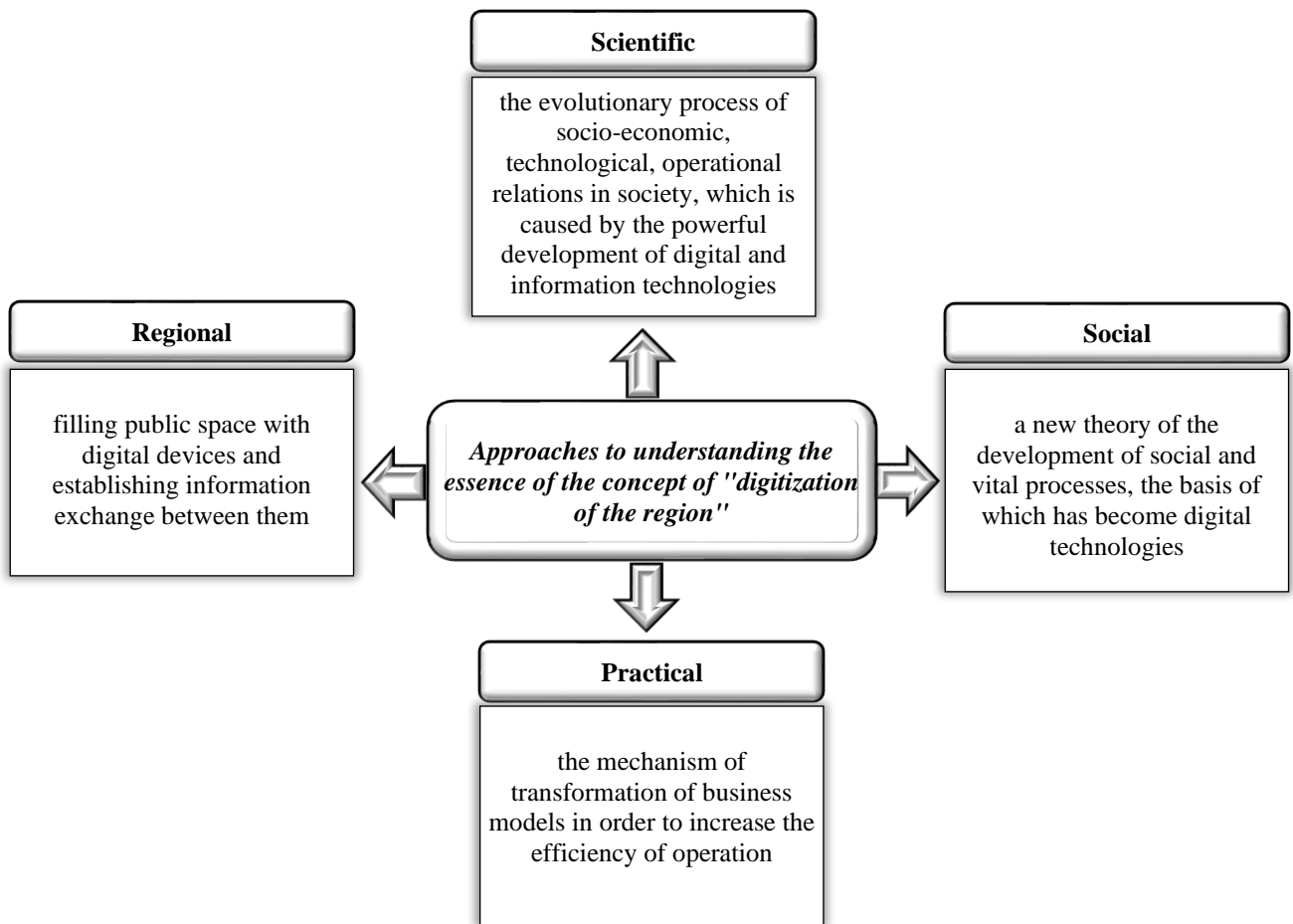


Figure 1. Approaches to the interpretation of the concept of “digitization of the region”

**Source: generated by the authors.*

Therefore, the study of scientific approaches to the interpretation of the essence of the concept of “digitization of the region” proves the existence of different approaches and points of view of understanding this category, the emergence of certain ambiguity and differences of opinion. Thus, it is quite common in the scientific circle to emphasize the fact that digitalization of the region significantly affects the effectiveness of the socio-economic systems of the region as a whole and single out the positive results of its action. At the same time, it should be noted that digitization is not an end in itself for the region, but is only a tool to ensure its sustainable development.

The functioning of the regional digital economy largely depends on the institutional component of its development, including the quality of the institutional environment. At the same time, issues related to the institutional

foundations of regions’ digitalization are currently not fully covered and remain open for further research. Based on this, the primary interest is the study of the essence and content of the institutional environment of regions’ digitalization. The study of these aspects will make it possible to identify and evaluate the most promising ways of digitization, as well as a number of possible risks and threats with the aim of preventing them.

Taking into account the above, we can conclude that the institutional environment of regions’ digitalization is a set of norms and rules in the political, socio-economic spheres, etc., which build the structure of relationships between the elements of the digital economy. In addition, the institutional environment implements such relevant functions as: integrative, stimulating, social, distributive, informational, income-generating (Fig. 2).

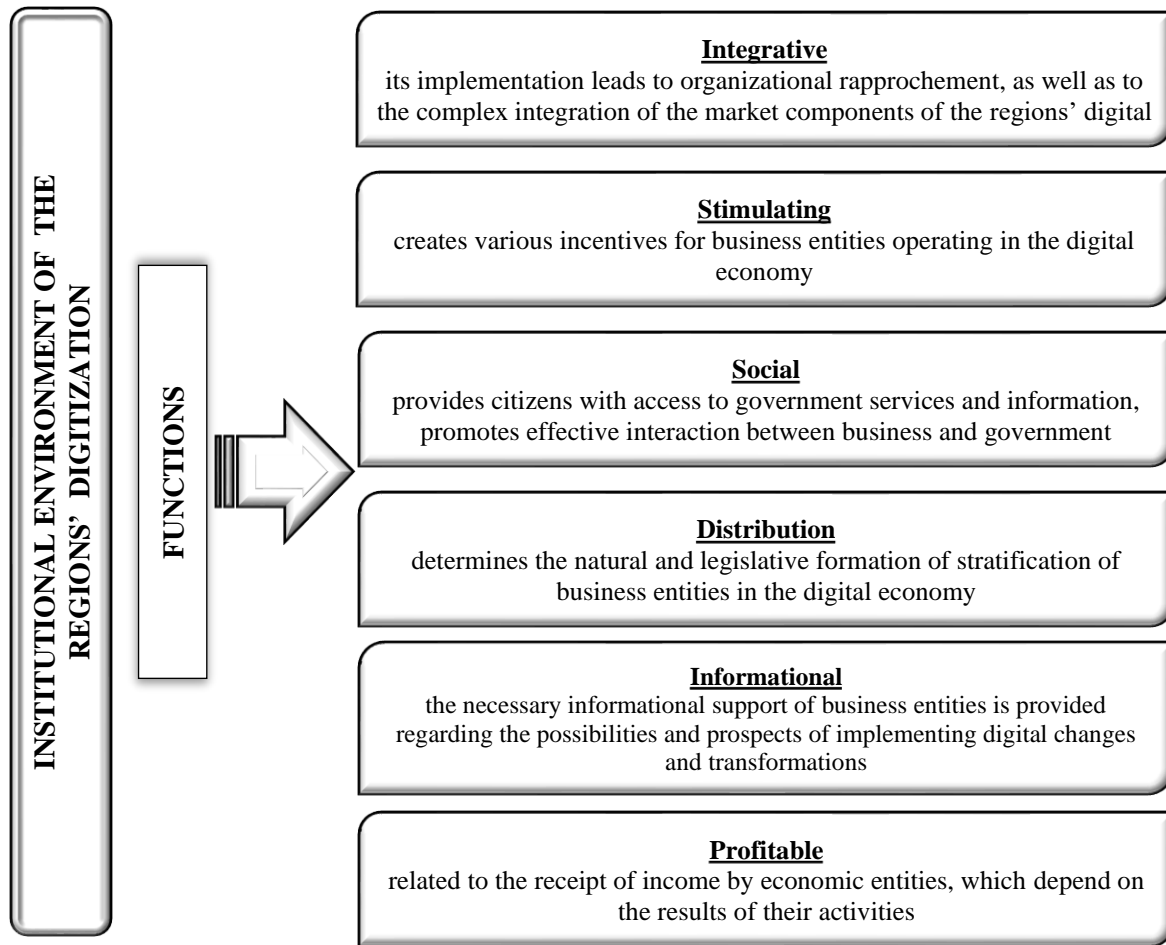


Figure 2. Functions of the institutional environment of the regions' digitalization

*Source: generated by the authors.

It should be noted that the formation and further development of the digital economy in the conditions of permanent changes in the environment has a significant dependence on those formal and informal norms and rules that have developed. Formal norms and rules are those that are established by law and have real protection from the state (legal norms and rules). Under such conditions, in our opinion, the basic and leading institutions are: legislative and organizational regulation; highly qualified personnel who were trained taking into account digital approaches and needs; an education system that is adapted and aimed at the activation of digitization processes; research skills, abilities, competencies and technical and technological know-how that are relevant to digital needs and requirements. An important task at the same time will be the development and

adoption of legal support for digitization and the parallel formation of legal institutions, the functioning of which will be aimed at solving the primary and priority tasks of the functioning and development of the digital economy.

Figure 3 shows the percentage of households that have access to the Internet at home and the distribution of the population that uses the Internet at least once a week - in % of the population that reported using Internet services. Thus, on average in Ukraine, the indicator of household Internet access in 2021 was 82.7%. The regions with an indicator above the average were Volyn (84.5%), Dnipropetrovsk (90.5%), Transcarpathian (89.6%), Ivano-Frankivsk (84.6%), Odessa (88.5%), Kharkiv (90.6%), Cherkasy (83.2%), Chernivtsi (84.3%) regions and Kyiv city (90.9%).

Institutional Foundations of the Regions' Digitalization

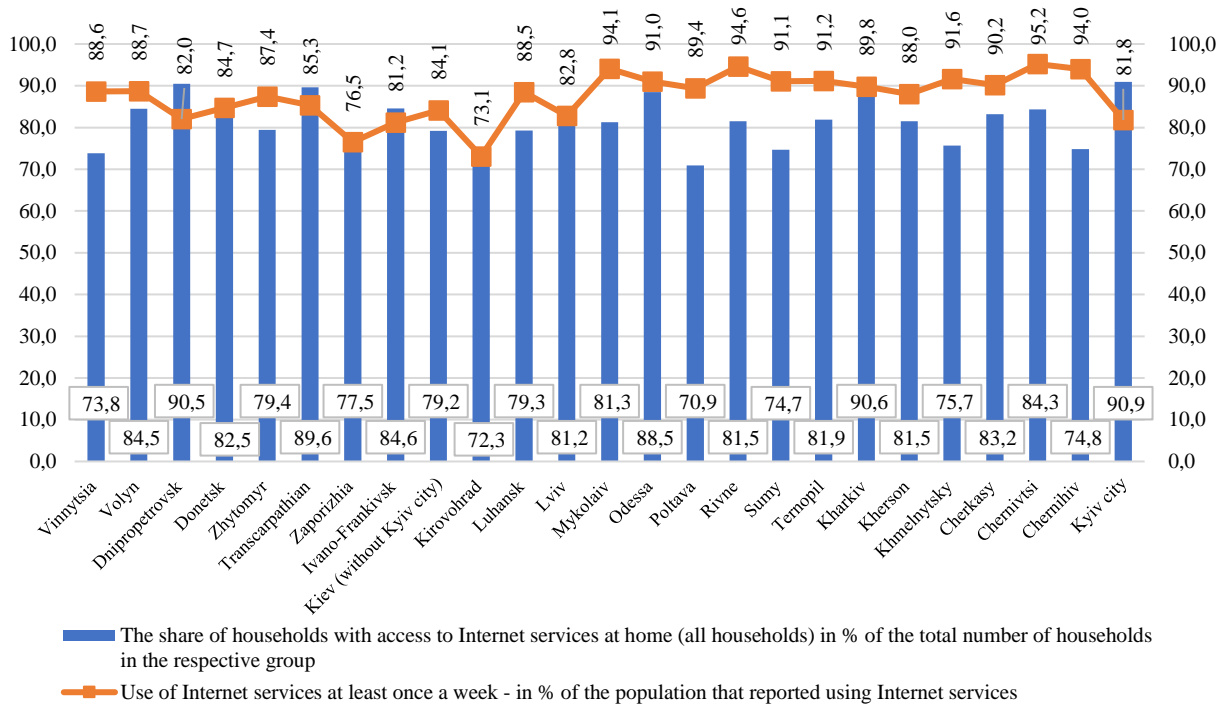


Figure 3. Indicators of household's access to the Internet in Ukraine's regions

*Source: generated by the authors based on <https://www.ukrstat.gov.ua>.

It is appropriate to note that in institutional theory, great attention is paid to the aspect of the relationship and interaction of formal and informal rules and norms. For this reason, a detailed analysis of options for similar ratios and relationships is carried out. As a result, conclusions are formed that formal norms and rules can be considered as continuing and complementary, which contributes to the unimpeded, continuous, evolutionary emergence of new formal rules and norms. The appearance of informal rules is determined by the formation and use of formal rules in the socio-economic sphere, that is, they can be considered secondary. The development of the economic sector occurs gradually, without significant transformations. At the same time, new formal rules often come into conflict with informal institutions, which leads to an increase in the cost of their implementation in the conditions of the functioning of the real economic system. Accordingly, there is a need to choose between new spending rules and norms and those that already exist and are applied in practice. Based on this, it becomes clear that this moment needs to be taken into account and

significantly worked under the current conditions of formation and development of digitalization processes in the region.

An important point that should be noted is the dependence of the transformation of a certain institutional environment on development institutions. They usually mean the components of the institutional infrastructure, which are aimed at supporting the creation of various innovations. They can also be interpreted as structures of a socio-economic and organizational-technological nature, which deal with the process of distributing various resources in favor of creating the latest growth of the economic system by investing in areas and segments of development and human capital, as well as generating new ideas and technologies. Development institutes are a complex of formal and informal norms and rules that are formed with the support and participation of state and regional authorities and are aimed at innovative development and risk reduction in the market economy. Domestic development institutes include technology parks, investment and venture funds, business incubators, etc.

Conclusions

The conducted study of the institutional foundations of regions' digitalization made it possible to study the institutional aspects of the development of this process; to find out the essence and nature of the concept of "digitization of regions"; to prove the existence of dependence between digitization and the quality of its institutional environment, to highlight the functions of the institutional environment.

Current conditions for the functioning and development of regions' digitalization allow us to investigate the regulation of this process, as well as the development of digital platforms and the use of digital technologies. However, the asymmetry of regional

development and differentiation existing in Ukraine, which is characteristic of the qualitative characteristics of the socio-economic and technological development of the Ukraine's regions, leads to a noticeable lag of the business and government sectors in the field of digitalization, as well as a low level of use of digital platforms and technologies by the country's population and its regions. The aforementioned requires solving the existing problems, and the conducted research in terms of understanding the essence, role, relationship and interrelationship of formal and informal norms and rules; the application and expansion of the functioning of development institutions, in our opinion, will encourage further study and analysis of the outlined problems.

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