

Smart Economy in the Regions of Ukraine: Current Trends and Development Vectors

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Abstract: The speed of technological change requires continuous improvement of national and local economies, as the introduction of the range of innovations increases the competitiveness of companies and regions, positively affecting the welfare of the population. The ability to develop new ideas, reorganize existing knowledge and create new technological paths, while at the same time to implement the concept of smart specialization as the business and innovative basis for regional economies, can counteract the problems of economic development under any condition. The use of smart specialization in Ukraine becomes particularly relevant as it will be necessary to restore the current destruction of building stock, social and industrial infrastructures, and to lay the foundations quickly and efficiently for long-term development. The main determinants of regional intellectual specialization are supply and demand, innovation and smart technologies, business sector development, external threats, sustainable development goals, knowledge society, national and regional policies, digital transformation and the concept of a smart city. This paper examines the direction of the development of intellectual specialization, taking into account the best practices of implementing smart specialization strategies in Ukraine and the European Union. The mechanism for implementing the strategy of intellectual specialization and the status of development of sectoral innovations in regional economies, based on advanced scientific and technical achievements and innovations, are analyzed. It is demonstrated that the implementation of an effective regional policy of smart specialization can ensure the innovative and promising future development of the country. In Ukraine, an active policy of smart specialization in the areas where technologies are developed can strengthen the processes aiming at economic recovery, minimizing losses and increasing profitability for long-term innovative advances and broader development of the country. The concept of entrepreneurship specialisms encompasses the interconnection of science, education and business in the context of regional development. The purpose of initial smart specialization is to make the best use of the potential of the respective regions and countries by maximizing the adaptation of possible directions of scientific and educational development in these regions or countries, adapted to their specific socio-economic conditions.

Keywords: Competitiveness, development, specialization, digitalization, economy, region.

1. INTRODUCTION

The introduction of Industry 4.0 and the transition to Industry 5.0 has necessitated the development of policies to

encourage the evolution of smart economies in all regions of Ukraine. Aslam et al. (2020) outline the main directions and prospects for the transition to Industry 5.0. The main emphasis in this article is on the need to introduce innovational practice in businesses to increase competitiveness and ensure economic growth. Industry 4.0 has disadvantages for the use of dialogue between business and science for the further implementation of the smart economy concept in Ukraine. In his work, Kurt (2019) notes that industry is the main driver

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of innovation in the modern world and it offers a unique combination of technological advances, increased profits and imperfect competition that underlies the historical success of developed countries. At the same time, a country's competitive position, the welfare of citizens and overall national security relating to Industry 4.0 are determined by the accumulation of technological development potentials, characteristic of the development of modern industry and science (Riabov et al., 2022).

Furthermore the service sector should also contribute to economic growth and competitiveness. Individual services themselves are not as important as the generality of all types of services. Today high-tech services are in demand, especially information and communication services, as they are an integral part of a progressive production system in which tangible objects and intangible services form a single whole. In addition, this integration has rendered the traditional distinction between the production of goods and the provision of services obsolete, especially as digital technologies in developed countries are creating hybrid products that are no longer simply goods or services. Prasanna et al. (2019) emphasize the need to develop small and medium-sized businesses, as they have a greater potential for technological innovation and a shorter payback period for projects. Thus the overall competitiveness and growth of the economy can be enhanced.

The results of the implementation of this approach, recommended by European practice, and the effective tools for its implementation need to be more widely covered. Strengthening the integration of the Ukrainian economy into the EU economy, which has been observed at a fairly high pace since 2015, requires the introduction of methods, principles and tools of European structural adjustment, based on relevant economic development practices at all levels (Kozlovskiy et al., 2019). One of these important tools is smart specialization, which is also a key element of cooperation, leading to the use of European structural and investment funds within the framework of European regional policies. Smart specialization is an innovative tool of the European Union, used to build regional capacity through two key approaches, especially taking into account local conditions and the knowledge-based economy. Specifically, this approach identifies the competitive advantages of a region and its assets in terms of innovations and scientific potential. However the successful implementation of intellectual specialization can only be achieved through effective cooperation and synergy between municipalities, businesses, science, and civil society.

The present study addresses the above issues and aims to expand the understanding of smart specialization as a practical tool for innovative changes in localities. To explain this concept, it is necessary to reveal the features of a smart business and its role in the modernization of economic potential. Identifying the obstacles and risks to a Ukrainian smart business in functional, sectoral, and environmental aspects will allow for more effective management of the socio-economic and innovative development of regions. Improvement of the tax, budgetary, financial and credit mechanisms for the development of a Ukrainian smart business requires more de-

tailed understanding and implementation at all levels of the state hierarchy.

The purpose of this study is to analyze the specialization of Ukrainian regions in terms of the introduction of smart technologies, as well as to identify cluster regions in order to increase competitiveness and ensure economic growth.

Based on this goal, the following tasks were identified:

- analysis of the features and prospects for the implementation of smart specialization;
- development of a set of indicators describing the smart specialization of regions;
- clustering of Ukrainian regions;
- development of proposals for improving the management of regional development in terms of smart specialization.

The object of the study is to identify the principles, methods, and mechanisms for implementing smart specialization.

The subject of the study is the organizational and economic relations that arise between the population, business representatives and government agencies relating to the implementation of smart specialization.

The results of the study can be observed in the activities of government agencies and administrations, local communities, non-governmental autonomous non-profit organizations and business enterprises. They can also be used in the development and implementation of national industrial policies and policies in the field of digitalization of the Ukrainian economy and will be useful to those interested in the industrial revolution, the digital economy, and modern business issues.

2. METHODOLOGY

General scientific methods and specific methods are used to achieve the set goals and identify the research tasks. The methods of content analysis, systematization, generalization, analysis and synthesis, historical and logical research, and a systematic approach were used to study and develop theoretical definitions, develop theoretical foundations, and methods of adaptive behavior in industrial entities. The digital transformation of the economy is studied using the methods of decomposition and modeling. For the purpose of systematization and generalization, the study analyzes the differentiation of the clustering of regions in leading countries and determines their impact on the development of digitalization. Using the method of observing the results of the implementation of smart economies in the European Union and the nature of its regulatory support, the article identifies the key ministries and agencies that should be involved in the formation of smart specialization of the regions of Ukraine. In accordance with the systematic approach, the components of an organization's adaptive digital behavior are identified: identification of digital opportunities, actions to initiate the introduction of new digital opportunities, development of digital technologies, analysis of results compared to expectations; and the management of the digital transformation process. Analysis and synthesis is used to deconstruct the challenges and threats that may arise during the transition to digi-

talization and the formation of smart specialization. Based on the analysis using the method of averages, an algorithm for clustering the regions of Ukraine is proposed. The method of content analysis, grouping, and generalization was used to determine the directions of smart specialization in the regions of Ukraine. The results of the study were systematized and visualized using tabular and graphical methods. The data and information basis of the study lies in studies carried out by domestic and foreign scientists and recorded in scientific journals.

3. RESULTS

One of the most important factors that led to the birth of the smart specialization concept was the global economic crisis of 2009. During this period, the Organization for Economic Cooperation and Development coined the concept of smart specialization, which refers to the business and innovation patterns of a regional economy, taking into account public policy frameworks and investments in innovation. These patterns can then influence the economic, scientific and technological specialization of a region and, in turn, its productivity, competitiveness, and specific and interregional aspects. Thus it is a possible way to help both developed and developing economies to improve their competitiveness.

The concept of smart specialization initially has an economic basis for its regional focus, by identifying factors that influence economic, scientific, and technological specialization within the framework of regional policy, respectively, in terms of their impact on productivity, competitiveness, and mechanisms of competitiveness and economic growth (Prokopenko et al., 2019).

The implementation of the concept achieves two main goals.

- A. Creating new opportunities by identifying promising new industries, sectors and areas. As with most goods, the value of a particular type of knowledge or technology reflects the balance of supply and demand. Countries with greater capabilities tend to produce more specialized products that are difficult for other countries to replicate or imitate. These specialized (complex) goods are usually produced by a relatively small number of economies and provide the basis for long-term competitive advantage. Complex goods are also at an early stage of production, which favors their further development. The use of smart technologies opens up new opportunities for companies in all sectors of the economy.
- B. Implementation of structural changes. Smart specialization is based on a multi-level governance hierarchy in which policy theorizing and implementation take place at different geographic levels. For example, the European Union sets general rules and funding targets, leaving lower levels of government (national and regional) to implement policies based on specific guidelines that are appropriate to the region's socioeconomic context. These characteristics define intellectual specialization as a policy based on principles and local experiments.

The European experience shows that smart specialization can be used and disseminated to develop regional development

strategies that identify competitive advantages, set strategic priorities, and implement smart strategies to maximize the potential of knowledge-based development. For instance, smart specialization can help to transform a region into a regional robotics cluster and an innovation exemplar for the European Union. This is also important for Ukraine, as its regions become integrated into global trade flows through extensive cooperation and highly competitive markets where innovative changes are constantly taking place. The introduction of smart specialization can be a very effective tool for future development, especially for the possibility of integration at higher levels of the European value chain. It is equally important that the introduction of smart specialization in Ukraine, as it works in Europe, is possible on the basis of achieving the transformational effects necessary for industrial modernization in the context of the growing influence of Industry 4.0/5.0.

A key tool for implementing the new innovation development strategy at the regional level is the use of clusters organized to gather and share experience, funding, leadership, and advice to make businesses prosperous, productive, and profitable, and to promote employment for all. The cluster fosters innovation and start-ups by building on the region's existing strengths and supporting the development of entrepreneurial initiatives in cooperation with other stakeholders to facilitate access to global markets.

Today, cluster associations are one of the most effective forms of organizing innovation processes, a form of business promotion whereby it is not individual companies which compete in the market, but entire complexes of enterprises, reducing costs through joint technological cooperation. Clusters form a specific smart space that expands the scope of free trade, free movement of capital and human resources, thus functioning as a structural element in the global system.

Clustering has a positive impact on the development of the country's economy and improves the welfare of citizens. This is confirmed by the positive experience of clustering in such leading countries as Finland, Denmark, the United States, Germany, Italy, Poland, and Hungary (Table 1).

In order to implement smart specialization policies in Ukraine, the Ministry of Regional Development, Construction, Housing and Communal Services of Ukraine, the Ministry of Economic Development and Trade of Ukraine, and the Ministry of Education and Science of Ukraine are forming a national team to coordinate the process across the country, with the next step being in pilot regions. After a detailed analysis of data from various fields using the methodology of European experts in the pilot regions, the EU methodology will be adapted to the specific situation in Ukraine after analyzing the results. The next step will be to train Ukrainian specialists to introduce the use of intellectual specialization in all other regions of Ukraine. Given the formation of regional development strategies, the existence of a regional intellectual division of labor will help to use available resources more efficiently, develop relevant characteristics and improve the system of regional strategic planning.

All of this fulfills the task of providing an evidence basis for proposals for choosing the direction of development of the

Table 1. Impact of Clustering on Economic Development.

State	Features of Clustering	Impact on the Economy and Welfare
Finland	The economy is divided into 9 clusters that ensure competitiveness	The country has only 0.5% of the world's forest resources but accounts for 10% of the world's exports of wood products and 25% of paper exports. In addition to forests, most important for the Finnish economy are the information and telecommunications clusters, which together provide the main exports and account for a significant share of the country's GDP.
Denmark	The economy is divided into 29 leading clusters	40% of enterprises operate and account for 60% of exports.
USA	More than half of companies operate according to the cluster model: companies in a cluster focus on a region to maximize its natural, human, and inclusive potential. Currently, about 400 of the largest clusters in the United States are engaged in high technology, natural resource extraction, household goods, and services.	The clusters account for approximately 61% of the GDP and employ 57% of the country's potential labor force. American know-how in consumer goods has given the country leadership in agriculture, packaging, and mechanized production, as well as success in advertising and finance. The cluster's products are typically export-oriented or import-substituting. Silicon Valley is now considered an advanced cluster, accounting for about 30% of all venture capital investments.
Germany	Industrial clusters, such as machine building, chemicals, and biotechnology, play a relevant role.	Economic leader in the field of biotechnology. The turnover in this industry is over 3 billion euros. More than 30 thousand scientists conduct research. Research and development expenditures amount to more than a billion euros.
Italy	Developed industrial districts (clusters), which employ about 30% of the total labor force. It has 200 industrial districts, which unite 60,000 companies and produce more than a third of all exports	Industrial clusters are characterized by a high concentration of small businesses in traditional manufacturing industries. Out of 4 million companies, only 2% are large.
Hungary	At the beginning of the 21st century, a network of 150 clusters was created in construction, textile production, hot water supply, optical equipment, automotive, wood-working, food processing, electronics, etc.	There are about 80 operating industrial parks, which include about 600 companies and employ more than 60,000 people in total. These industrial parks have appropriate infrastructure and very important duty and tax incentives.

Source: summarized by the author based on (Ladonko et al., 2022; Kovaliuk et al., 2020; Poplavskiy, 2019)

Ukrainian smart industry and its regulatory fiscal, budgetary, financial, and credit context.

Smart specialization represents a new digital stage in the automation and management organization of productive enterprises. Therefore, it is clear that the sectoral aspects of the development of businesses according to smart principles should be promoted, both in its current state and in potentials for further automation depending on the region (Bulkot, 2021; Ostropolska, 2021).

In order to determine the level of automation in certain sectors of the economy, it is necessary to group all the main types of human economic activity into several categories. The relative shares of these institutions in each sector of the economy are then determined. Industries that are most likely to make extensive use of automation are those where physical operations performed in a well-structured and predictable environments account for a large share of production activity. Therefore the most regulated operations, such as data processing and assembly of multi-component assemblies, are automated to the maximum extent possible (Kovalenko-Marchenkova et al., 2022).

In accordance with the systematic approach, the components of an organization's adaptive digital behavior can be identified: identification of digital opportunities, actions to initiate the introduction of new digital opportunities, development of

digital technologies, analysis of results in accordance with expectations; management of the digital transformation process. Recognizing the constancy of changes in the digital environment in which enterprises operate, they have developed sustainable mechanisms for overcoming changes, defined as coping syndromes, which are standard rules of organizational behavior. The nature of the adaptation syndrome depends on the intensity of the adaptation process and the internal preparation of the adaptation response. Based on the specifics of economic activity, the challenges and opportunities of digital transformation and building clusters that ensure the economic development and competitiveness of the country are analyzed in Fig. (1).

The purpose of cluster analysis is to identify the presence of a structure, which is manifested in the formation of groups of similar objects - clusters. At the same time, its role is to give structure to the object under scrutiny. This means that clustering methods are necessary to identify data structures that are difficult to spot by visual inspection or with the help of experts. A non-hierarchical clustering method, the method of averages, was chosen as a clustering tool for this work. The algorithm of the analysis is shown in Fig. (2).

Based on the research scheme developed above, the regions of Ukraine were clustered by the level of digitalization. The results of the clustering are presented in Table 2.

	Strengths	Weaknesses
Opportunities	Launch of digital transformation areas. High digital literacy at the level of the population, businesses, and the state. Development of new digital technologies. Effective response to market challenges	Poor quality of use of available digital capacities. Limited use of business intelligence technologies.
Threats	Rapid development of Industry 4.0 and transition to Industry 5.0. Implementation of a single digital market strategy Prospects for the development of digital marketing	Barriers to doing business with the European Union. Lack of a developed legislative infrastructure. Lack of understanding of the essence of digital rights.

Fig. (1). SWOT analysis of challenges and threats to the transition to a smart economy.

Source: authors illustration.

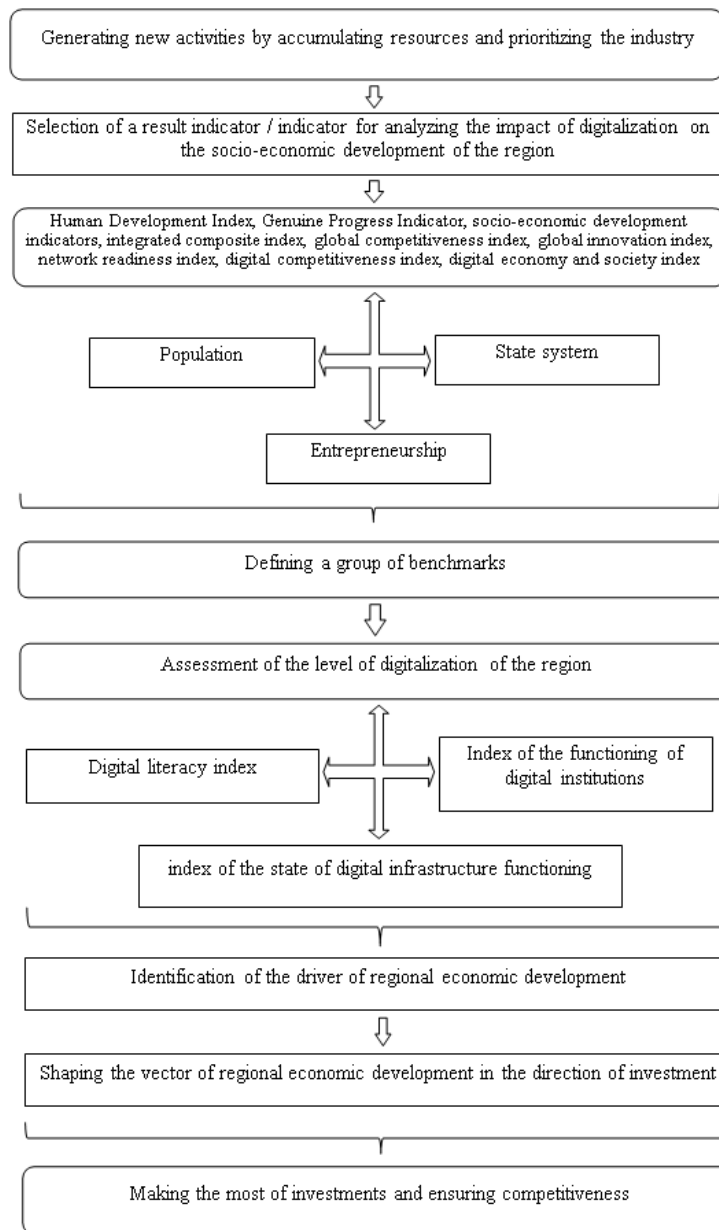


Fig. (2). Scheme of clustering regions according to the level of digitalization.

Source: authors' illustration.

Table 2. Clustering of Ukrainian Regions by the Level of Smart Specialization.

Region	Smart Specialization of the Region	Determination of Cluster Affiliation	Defining a Cluster with a Focus on the European Union
Vynnytsia	Processing and food industry	Food cluster	Healthcare
Volyn	Forestry and tourism and recreation sector	Forestry and agriculture, tourism and recreation cluster	Agricultural industry
Dnipro	Machine building industry	Machine building cluster	Health care
Donetsk	Mining and quarrying industry	Mining and quarrying cluster	Mechanical engineering
Zhytomyr	Forestry and tourism and recreation sector	Forestry and agriculture, tourism and recreation cluster	Agricultural industry Healthcare
Transcarpathian	Transport and logistics sector	Transportation cluster	Construction and infrastructure
Zaporizhzhia	Agriculture and food industry	Agriculture and food cluster	Agricultural industry
Ivano-Frankivsk	Retail trade and services	Trade and services	Creative industry and services
Kirovograd	Services, wholesale and retail trade	Trade and services	Creative industry and services
Kyiv	Energy and food industry	Energy and food cluster	Mining and quarrying
Luhansk	Mining and quarrying	Mining and quarrying cluster	Mining and quarrying
Lviv	Information and telecommunications, business services	Innovation and development	Creative industry and services
Mykolaiv	Tourism and recreation sector	Tourism and recreation cluster	Creative industry and services
Odesa	Transportation and logistics sector	Transportation cluster	Construction and infrastructure
Poltava	Environmental protection	Environmental protection	Healthcare
Rivne	Woodworking industry, agriculture	Agriculture cluster	Agricultural industry
Sumy	Mechanical engineering, environmental protection	Machine building cluster	Mechanical engineering
Ternopil	Professional scientific and technical activities	Innovations and developments	Creative industry and services
Kharkiv	Educational services, professional scientific and technical activities	Innovations and developments	Creative industry and services
Kherson	Transport and logistics sector	Transportation cluster	Construction and infrastructure
Khmelnitsky	Agriculture and art	Agriculture and creative industry	Agricultural industry Creative industry and services
Cherkasy	Transport and logistics sector	Transportation cluster	Construction and infrastructure
Chernivtsi	Services, wholesale and retail trade	Trade and services	Creative industry and services
Chernihiv	Construction and transportation infrastructure	Construction and infrastructure, transportation cluster	Construction and infrastructure

Source: authors illustration.

However the available resources and potential of economic clusters are not exhausted in this study. Therefore, the further development of cluster structures and technologies in business organizations will allow them to effectively address the most pressing problems of modernization of their structures through the integration of related activities, increase of labor productivity and specialization of economic units, regional clustering of innovation activities, constant formation of small and medium-sized enterprises in knowledge networks and expanding the opportunities for access of manufacturers of innovative products to markets, suppliers, technical

knowledge and highly qualified personnel. Thus, Ukraine's transition from the model of adapting borrowed technologies to local conditions to the model of its own innovative development and effective commercialization will be a promising direction for increasing competitiveness.

The core of the national network of clusters should be formed with the participation of: national research centers and universities; patent centers; experimental centers; industrial and technical centers; and logistics marketing and information centers. The state, in its turn, should focus primarily on implementing horizontal policy, i.e., creating the

framework conditions for effective cluster activities without interfering with corporate structures - a favorable environment for investment and competition, equal access of enterprises to resources, markets, and financing.

Effective and dynamic technology clusters of the national economy require a synergistic combination of state and business efforts in the field of innovation and business financing, cluster forms, and the concept of public-private partnership in this area at the national level.

4. DISCUSSION

One of the important areas for implementing the provisions of the Association Agreement with the European Union and economic integration with the EU internal market and ensuring integration into global value chains is the introduction of the concept of smart specialization in Ukraine (Polishchuk et al., 2019).

The article analyzes the European experience of implementing smart technologies and clustering of regions. It is determined that the application of this new approach is a key element of cooperation on the possibility of using European structural and investment funds within the framework of the European Neighborhood Policy (Tsoukalis, 2022). At the same time, based on the need to comply with the European Union's Smart Specialization Strategy (Foray et al., 2021), Ukraine has been actively working since 2016 to form a coordinated position with the European Union but has not achieved the maximum desired result. This is due to the influence of external factors and limitations on the possibility of effective implementation in regions where active hostilities are taking place.

The study found that in order to properly apply the principles of smart specialization and achieve positive results on this basis, it is extremely important to correctly understand the essence of this innovative system of smart solutions developed by the European Union to intensify structural changes in the region's economy, training and development of regional capabilities for effective work in the world's major markets. However, in Ukraine, intellectual specialization as an innovative decision-making system in the field of regional and structural policy has not developed in practice at all. At present, only the Ministry of Economic Development and Trade of Ukraine is trying to implement the concept of smart specialization when laying the foundation for a new industrial policy, especially in the draft strategy for the development of industrial parks in Ukraine until 2025 (Matyushenko et al., 2021). Therefore, the primary task is to improve the regulatory framework for the implementation of smart specialization.

At the same time, smart specialization in Ukraine is mainly related to the development or modernization of the industry and the introduction of digital technologies. In this case, it will be useful to apply the experience of the European Union, where smart specialization is a way to identify the unique characteristics and advantages of each country and region, emphasizing the competitive advantages of regional industries, and this is also part of the decentralization policy.

As for the understanding of smart specialization in the European Union, it is being implemented as a tool for the devel-

opment of broader sectors of the regional economy that are promising in terms of innovation. Among the directions envisaged by the strategy, such as promoting the implementation of Ukrainian intellectual specialization at the European level, those that are consistent with regional methods of defining smart specialization are selected. Joining the European Smart Specialization Platform to open the platform's tools to national regions in order to determine the future economic and innovative specialization of regions and expand access to the European Union's structural funds.

At the same time, the article determines that the draft strategy also has certain inconsistencies with the requirements of the classical concept of smart specialization in the field of ensuring the development of industrial regions, especially with regard to promoting cluster initiatives and developing cooperation between industrial clusters (Gianelle et al., 2019).

The experience of European countries shows that the development of the concept of smart specialization is possible by bridging this gap between smart specialization and the application of cluster policy. According to their definition, the implementation of cluster policy in the region can become a hindrance to the development of promising structural strategic changes. However, in the case of Ukraine, this poses an additional threat, since the implementation of cluster policy in the context of an outdated economic structure in an industrial zone prevents the transfer of specialization to new, less traditional, but potentially more promising regions. Therefore, this study requires further analysis and elaboration.

5. CONCLUSIONS

Smart specialization is a strategic approach to promoting national economic development through targeted support for research and innovation, and it is the basis for the European Union's structural funds to ensure investment in research and innovation. This allows European countries to achieve political cohesion, increase employment and implement the European Economic Development Plan. Smart specialization is about identifying regional strengths and developing regional competitive advantages based on the existing structure of the regional economy. To further develop the economy and technology through innovation in a globally competitive environment, it is necessary to avoid duplication of research and innovation activities in different regions. In the broader context of smart specialization, it covers the process of developing an innovative concept, identifying competitive advantages, setting strategic priorities, and using them.

The efficiency of the development of the digital sector in the regions of Ukraine as a basis for the digital transformation of the economy and ensuring the development of regional competition is assessed. To assess the level of information and telecommunication support of the economy of a region of Ukraine, appropriate methods are proposed, which involve determining the overall efficiency coefficient of the sector's development. The results obtained at different stages of application can be used to formulate strategies for the socio-economic development of regions or individual administrative units and develop regional plans for digital transformation. Based on the proposed methodological approach, sub-indices of development efficiency in the field of infor-

mation and communication technologies of the regions of Ukraine can be calculated and the total efficiency coefficient for each region can be determined, on the basis of which the corresponding ratings are obtained. The influence of the readiness of organizations and technological regions for digital transformation on the economic results of regional development without the intervention of external assistance, which creates barriers to rapid economic transformation to the digital transformation model. The highest rates can be achieved in Kyiv and regions whose regional centers are cities with a population of more than one million, where a significant part of Ukraine's scientific and technical potential is traditionally concentrated, namely Odesa, Lviv, and Kharkiv. At the same time, it should be noted that this methodology takes into account only the performance of industrial enterprises and does not take into account the contribution of other regional entities. This approach significantly limits the possibilities of qualitative interpretation of the data in terms of enterprises, agencies, and business entities operating in other sectors of the economy.

The potential for the development of smart specialization in the Ukrainian regions has been investigated. Considering the individualities of a region's leading industries and their role in regional economic development, as well as modern requirements for the formation of regional development strategies based on smart planning, a methodology for determining economic development strategies is proposed. The development potential in a region is based on the main sum of factors of concentration of components adjusted for growth rates, which can be used as added value in determining the leading industry and justifying smart specialization programs in other types of economic activity. Based on the proposed methodological approach and the relevant mathematical tools, the author analyzes the economic development potential in different regions of Ukraine, which made it possible to identify the regions where the leading economic activity is located. Above is demonstrated a clustering of the regions of Ukraine by the level of digitalization.

The key narrative for choosing business priorities based on regional potential and with the support of national and international institutions is to mutually align the current work on restoring the destroyed economic system with the long-term priorities of innovation development in Ukraine.

Ukraine has a chance to bring its economy back to a new higher level of innovation. As part of the smart specialization concept, improving urban, social, housing, and public transportation infrastructure is necessary. The implementation of the smart specialization strategy involves bringing together industrial and agri-food companies, banks, financial institutions, research institutions, and government agencies around common problems of reformatting regional specialization by introducing innovations and end-to-end technologies in the agricultural sector. The key narrative for choosing business priorities based on regional potential and with the support of national and international institutions is the mutual alignment of the current work on restoring the destroyed economic system with the long-term priorities of innovative development in Ukraine.

CONFLICT OF INTEREST

The authors declare that they have no conflict of interest.

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