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Dominants of Innovative and Inclusive Labor Market Development in the Region under Digitalization

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ABSTRACT

The article substantiates the theoretical and methodological principles and identifies the dominant factors of the development of an innovative and inclusive labor market in the region in the conditions of digitalization and military transformations of the socio-economic space of Ukraine. It is proven that modern regional labor markets are characterized by spatial asymmetry, caused by the influence of hostilities, migration processes, business relocation and changes in the structure of economic activity. It is argued that under such conditions, traditional mechanisms for regulating employment are insufficient, and the formation of an innovative and inclusive model of development becomes a priority. The interpretation of the innovative and inclusive labor market of the region is proposed as an institutionally and structurally modernized employment system that combines the creation of innovative jobs, the development of digital competencies, and ensuring equal access of different social groups to productive and decent work. The content of the innovative component (technological modernization, structural restructuring of labor demand, integration of education, science, and business), the inclusive component (involvement of vulnerable groups, reduction of the digital divide, development of lifelong learning) is revealed, and the role of digitalization as a catalyst for employment transformations is outlined. It is substantiated that it is advisable to consider regional labor market development policy in the context of building an innovation ecosystem, within which stable relationships between economic entities and human capital are formed. The dominant elements of regional policy for the formation of an innovative and inclusive labor market are identified, including: development of innovation infrastructure, support for entrepreneurship, digital transformation, integration of the education system with the needs of the economy, and ensuring territorial employment balance. The conclusion is made about the need for a comprehensive combination of innovation and inclusiveness as a prerequisite for the competitiveness and social sustainability of the regions of Ukraine.

KEYWORDS

regional policy, labor market, innovative and inclusive development, digital transformation, dominants, institutional and structural modernization.





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Домінанти розвитку інноваційно-інклюзивного ринку праці в регіоні в умовах цифровізації

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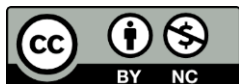
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У статті обґрунтовано теоретико-методологічні засади та визначено домінанти розвитку інноваційно-інклюзивного ринку праці в регіоні в умовах цифровізації та воєнних трансформацій соціально-економічного простору України. Доведено, що сучасні регіональні ринки праці характеризуються просторовою асиметрією, зумовленою впливом бойових дій, міграційними процесами, релокацією бізнесу та зміною структури економічної активності. Аргументовано, що за таких умов традиційні механізми регулювання зайнятості є недостатніми, а пріоритетного значення набуває формування інноваційно-інклюзивної моделі розвитку. Запропоновано трактування інноваційно-інклюзивного ринку праці регіону як інституційно та структурно модернізованої системи зайнятості, що поєднує створення інноваційних робочих місць, розвиток цифрових компетентностей та забезпечення рівного доступу різних соціальних груп до продуктивної й гідної праці. Розкрито зміст інноваційної складової (технологічна модернізація, структурна перебудова попиту на працю, інтеграція освіти, науки й бізнесу), інклюзивної складової (залучення вразливих груп населення, зменшення цифрового розриву, розвиток безперервного навчання), а також окреслено роль цифровізації як каталізатора трансформацій зайнятості. Обґрунтовано, що регіональну політику розвитку ринку праці доцільно розглядати в контексті розбудови інноваційної екосистеми, в межах якої формуються стійкі взаємозв'язки між суб'єктами економічної діяльності та людським капіталом. Визначено домінанти регіональної політики становлення інноваційно-інклюзивного ринку праці, серед яких: розвиток інноваційної інфраструктури, підтримка підприємництва, цифрова трансформація, інтеграція системи освіти з потребами економіки, забезпечення територіальної збалансованості зайнятості. Зроблено висновок про необхідність комплексного поєднання інноваційності та інклюзивності як передумови конкурентоспроможності та соціальної стійкості регіонів України.



КЛЮЧОВІ СЛОВА

регіональна політика, ринок праці, інноваційно-інклюзивний розвиток, цифрова трансформація, домінанти, інституційно-структурна модернізація.

1. Introduction

At the current stage of development of the national economy of Ukraine and its regional socio-economic systems, deep structural transformations of regional labor markets are taking place, due to a combination of military challenges, demographic shifts, migration processes and accelerated digitalization. The specificity of these changes is clearly spatially differentiated. The frontline territories are characterized by a reduction in economic activity, destruction of production infrastructure, forced relocation of businesses, and outflow of labor resources. In the central regions of Ukraine, there is a structural restructuring of employment, adaptation of enterprises to the conditions of the war economy and an increase in demand for specialists in the military-industrial and logistics profile. The western, conditionally rear regions demonstrate the concentration of IDPs, the intensification of entrepreneurial activity and increased competition in local labor markets. Such asymmetry forms new architectonics of regional employment and requires a rethinking of approaches to regional labor policy.

The war, undoubtedly, imposes long-term restrictions on the reproduction of human capital, increases the risks of unemployment, professional maladjustment and social vulnerability of certain groups of the population. At the same time, it is a catalyst for structural changes, as it stimulates the development of defense technologies, digital services, remote forms of employment, business relocation and the formation of new economic growth centers. In such conditions, traditional approaches to the regulation of the labor market are insufficient, since they do not take into account the need for simultaneous technological renewal of the economy and ensuring social cohesion. That is why the concept of an innovative and inclusive labor market of the region as a model that combines modernization and socially oriented vectors of development is of particular relevance.

The innovative and inclusive labor market of the region in the context of digitalization is considered as an institutionally and structurally modernized system of regional employment, which ensures the creation and dissemination of innovative jobs, the formation of digital competencies, and at the same time guarantees equal access of various social groups to productive and decent work based on the principles of technological modernization, social justice and territorial balance. All this makes it possible to integrate economic growth goals with the priorities of social sustainability, which is especially important in the period of military confrontation and future post-war recovery.

With deep territorial differentiation of socio-economic processes, it is the regional level that becomes a key platform for the implementation of balanced solutions that can ensure the competitiveness of the economy and social cohesion. Accordingly, the study of the drivers of the development of the innovative and inclusive labor market in the region in the context of digitalization is timely and scientifically significant, as it is aimed at substantiating the strategic guidelines for the transformation of employment in the context of modern challenges and long-term needs for the recovery of Ukraine.

2. Literature Review

The relevance of this topic has united many scientists and practitioners in a multidimensional discourse on various aspects of the transformation of the labor market in the context of digitalization, structural shifts and military challenges. A significant basis for understanding the regional aspects of innovative development is the concept of “constructing regional advantage”, proposed in the work of B. Asheim, R. Boschma and P. Cooke, who substantiate the role of associated diversity and differentiated knowledge bases in the formation of competitive positions of regions [1]. This approach focuses on the need for a new regional policy that integrates innovation ecosystems, human capital and entrepreneurial activity. This allows us to consider the innovation-inclusive labor market as a component of the regional innovation system, where digitalization is not only a technological, but also an institutional driver of transformations.

The problems of migration processes as a factor of structural changes in the labor market are thoroughly covered in a series of studies by Lücke and Saha [8], which analyzes the growing macroeconomic impact of labor migration from Ukraine and changes in its geographical directions. Domestic migration specialists [5; 9; 15] reveal institutional mechanisms for regulating migration and prove that regional employment imbalances are one of the key factors in migration activity. A similar

position is defended by Sadova et al. [16], emphasizing the dependence of the population's migration intentions on the state of the regional labor market. Further studies [22] have empirically proven the relationship between the competitiveness of regional labor markets and the scale of international migration. Such results convincingly demonstrate that digitalization and innovative modernization of regional employment should be considered as a tool not only for economic growth, but also for reducing migration losses.

In the conditions of war, the emphasis of scientific research shifts towards the analysis of structural imbalances, unemployment and productive employment. Thus, in particular, Azmuk [2] substantiates the transformational challenges of reproducing the workforce in the new realities and the need for adaptation strategies. At the same time, Serohina [17] analyzes the impact of hostilities on productive employment, focusing on the loss of human potential. Many scholars systematize the key changes of wartime – employment reduction, rising unemployment, large-scale migration, and precarization of labor [18; 19]. Similar trends are studied at the regional level: for example, a study by Vasylytsiv et al. [21] identifies structural imbalances in regional labor markets in the Carpathian region, their causes and potential consequences, and outlines stabilization policy guidelines. These ideas were further developed in the works of Baranyak and Makhoniuk [3] and Mulska et al. [12], where tools for monitoring internal imbalances and mechanisms for reducing personnel shortages were proposed. One of such mechanisms is the regionalization of employment policy as a prerequisite for increasing its effectiveness in the context of spatial differentiation of unemployment and structural imbalances [4]. At the same time, there is an objective need to combine stabilization and adaptive tools for labor market regulation aimed at restoring economic activity and forming prerequisites for long-term sustainability in the process of post-war reconstruction [20]. However, the scientific achievements of the war period focus mainly on the problems of stabilization and minimization of losses, while the issues of combining innovation and inclusiveness remain fragmentarily disclosed.

A significant contribution to the formation of an institutional approach to balancing the labor market was made thanks to the research of Mulska et al. [11], Novikova and Ostafiichuk [14], which substantiate the partnership between business and the vocational education system as a mechanism for overcoming imbalances and strengthening the resilience of the economy. The problems of sustainability are developed by scientists Mishchenko and Kapranova [10], introducing the concept of inclusive regional development of the labor market in the context of labor resource volatility, especially in the post-war perspective. Along with inclusion, the growing role of digital competencies and hybrid forms of work is emphasized, the transformative effects of digitalization are considered through the prism of the employment model of the XXI century [6]. In this context, Levytska and Hres [7] substantiate the strategic directions of structural and institutional transformations of regional labor markets in conditions of instability. At the same time, Mulska et al. [13] prove that the development of regional labor markets is a tool for regulating internal and external migration and reducing the social vulnerability of the population.

Despite the significant amount of scientific developments, system analysis testifies to a certain fragmentation of research. On the one hand, there is a strong theoretical basis for regional preferences, institutional partnerships, and digital transformations [1; 6]. On the other hand, applied approaches to stabilizing the labor market in wartime conditions have been developed [2; 3; 20]. However, the integrated vision of the dominant development of the innovative and inclusive labor market in the region in the context of digitalization, which would combine modernization, institutional, migration and social dimensions, has not yet acquired a proper theoretical and methodological form.

3. Problem Statement

Substantiation of the dominants of the development of the innovation-inclusive labor market in the region in the context of digitalization, taking into account war-induced structural transformations. To achieve this goal, it is envisaged to implement the following tasks: to form the conceptual foundations for building an innovative and inclusive labor market in the region in the context of digital transformation, to summarize its key characteristics from the standpoint of technological modernization, social inclusion and territorial balance, to identify and systematize the dominants of its development, as well as to substantiate their complementary relationship on the basis of the matrix approach with the definition of practical guidelines for regional employment policy.

4. Methods and Materials

To implement the objectives of the study of the dominants of the development of the innovative and inclusive labor market of the region in the context of digitalization, a set of complementary scientific approaches was used, which made it possible to form a theoretical, methodological and applied basis for the analysis of employment transformations, the institutional environment and mechanisms of state regulation. The concept of the interconnection of the digital transformation of the economy, structural shifts in the demand for competencies, risks of social exclusion of vulnerable groups of the population and parameters of regional competitiveness is substantiated. The key barriers to the formation of an innovative and inclusive labor market have been identified: the risks of digital segmentation of employment, differentiation of access to quality jobs and deepening of the qualification gap. A methodological approach to assessing the level of innovation and inclusiveness of the regional labor market has been developed, taking into account the indicators of digital infrastructure, employment structure, educational potential and institutional capacity.

Causal and factor analysis is applied to identify the determinants of structural changes in employment; bibliometric and content analysis using the tools of the Elsevier, Scopus, Web of Science, and Google Scholar platforms – to systematize the modern scientific discourse on the digitalization of work and inclusive development.

Semantic, systemic, structural-functional analysis was used to form content chains between the digitalization of the economy, innovative activity of business entities, the quality of human capital and the inclusiveness of employment. This provided a holistic vision of mechanisms for increasing the adaptability of the regional labor market and its ability to support sustainable development in the face of technological changes.

5. Results and Discussion

The digital transformation of the economy is changing the logic of the functioning of regional labor markets, tightening the requirements for the quality of human capital and exacerbating the problem of unequal access to employment opportunities. Under these conditions, the formation of an innovative and inclusive development model is of strategic importance for ensuring the structural modernization of the regional economy and social cohesion. Conceptualization of such a model requires the identification of systemic components that determine its content and implementation mechanisms.

When forming an innovative and inclusive labor market in the regions of Ukraine in the context of digital transformation, 4 key and interrelated aspects should be taken into account (Fig. 1). Firstly, it is an innovative component of the innovation and inclusive labor market of the region, which is the backbone and responsible for the technological modernization of employment, the structural restructuring of the demand for labor and the formation of a new quality of human capital in the context of the digital transformation of the economy. It determines the dynamics of updating the professional structure, the nature of the jobs created and the level of competitiveness of the regional economy in the interregional and global dimensions.

The innovation component means, first of all, a constant process of generation, adaptation and commercialization of new knowledge, technologies and management decisions that transform the employment system. We are talking about the development of high-tech sectors, as well as innovation as a universal characteristic of economic activity (from the digitalization of industry to the introduction of *smart-* solutions in the field of services, logistics, agribusiness and public administration). In this context, the labor market becomes a space for the implementation of the results of the innovation process through the creation of new professions, the transformation of functional responsibilities and the growing demand for cognitive, creative and digital competencies.

For the regional labor market, the innovation component provides for structural diversification of employment and a phased transition from a resource-intensive to a knowledge-oriented development model. This is manifested in the growth of the share of employees in the fields of digital technologies, automation, engineering development, data analytics, creative industries, as well as in the technological renewal of traditional industries through the implementation of Industry 5.0 solutions. Such a transformation changes the sectoral structure of employment, increases the requirements for the quality of the workforce and actualizes the importance of continuous learning, interdisciplinarity and

professional adaptability.

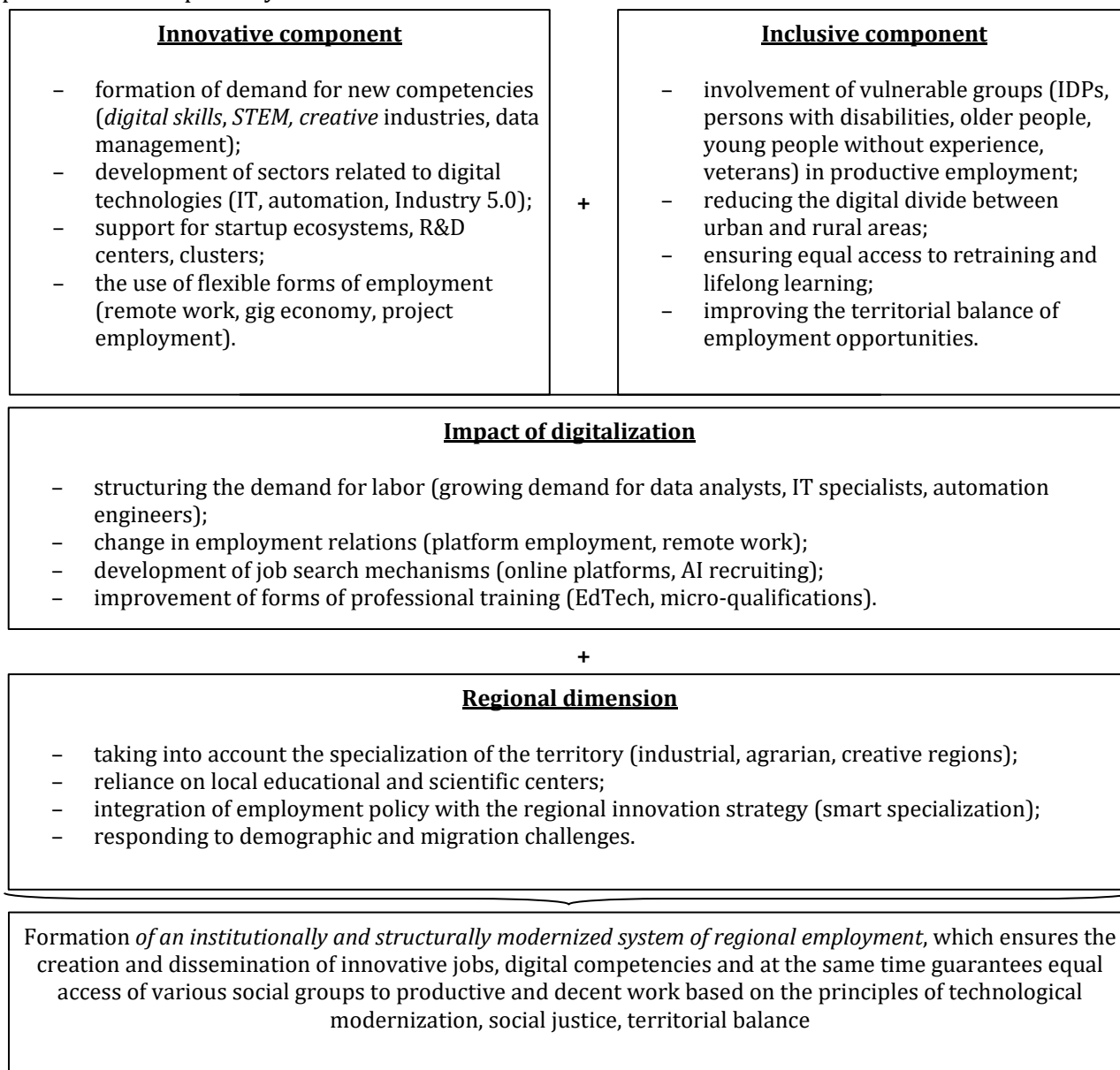


Figure 1. The concept of building an innovative and inclusive labor market in the regions of Ukraine in the context of digital transformation

Source: author's development.

The dominant feature of the innovation component is the formation of regional innovation ecosystems based on the interaction of universities, scientific institutions, business, authorities and entrepreneurship support infrastructure (incubators, technology parks, clusters). This model of cooperation creates internal demand for highly skilled labor, stimulates the development of entrepreneurial activity and contributes to the consolidation of human capital in the region. In the context of digitalization, integration into global knowledge networks is of great importance, which expands the opportunities for remote employment, outsourcing and participation in international projects without physical migration of labor resources.

The innovation component is directly related to the growth of labor productivity and incomes of the population. The introduction of new technologies, automation of production processes, the use of digital management platforms forms the prerequisites for increasing added value, increasing the technological saturation of jobs and the competitiveness of wages. In this context, innovation is a factor in the formation of high-quality employment, combining high productivity, stability and professional prospects.

At the same time, innovative transformation has a pronounced structural effect: the creation of

new types of activities is accompanied by the displacement of obsolete professions and the redistribution of labor resources. This necessitates an active policy of retraining, the development of professional mobility and the introduction of mechanisms for forecasting personnel needs. The effectiveness of innovation dynamics depends on the availability of flexible educational programs, sustainable partnerships between employers and educational institutions, as well as the institutional ability of the region to respond quickly to technological changes.

Therefore, the innovation component performs the function of a driver of structural modernization of the regional labor market, increasing its productivity and long-term competitiveness. It forms a new configuration of employment focused on knowledge, digital competencies and the ability to constantly professional renewal, which creates the basis for the sustainable and technologically progressive development of the regional economy.

The second systemic component is the inclusive component of the innovation and inclusive labor market of the region, which is responsible for social stabilization, ensuring equal access of various social groups to high-quality, decent and productive employment. We believe that its key role is to minimize socio-economic differentiation, prevent marginalization of certain categories of the population and form a balanced model for using the human potential of the region.

Inclusivity involves the systematic involvement of vulnerable groups of the population (for example, IDPs, people with disabilities, older people, young people without work experience, veterans) in productive employment. In the context of modern challenges for the regions of Ukraine, this is of particular importance, since a significant part of the labor potential is in a state of forced mobility, professional maladaptation or social vulnerability. The inclusive component of the labor market creates conditions for their economic self-realization through adaptive employment programs, flexible forms of work, support for entrepreneurial initiatives, and targeted retraining programs.

An important aspect of inclusivity is reducing the digital divide between urban and rural areas. With active digitalization, unequal access to Internet infrastructure, modern technologies and digital skills can become a factor in increasing territorial inequality. Therefore, the inclusive labor market provides for the expansion of digital infrastructure, the development of remote employment, and the provision of basic and advanced digital competencies for the population, regardless of their place of residence. Such shifts activate the spatial mobility of labor without physical migration and reduce imbalances between the center and the periphery.

Inclusivity also means ensuring equal access to *the lifelong learning system*, which is becoming a prerequisite for professional adaptation in the face of rapid technological changes. A regional labor market focused on inclusion integrates educational policy with the needs of employers, forms flexible models of retraining and promotes the renewal of competencies throughout working life, prevents structural unemployment, increases the resilience of human capital to crisis impacts.

It should be emphasized that an essential dimension of the inclusive component is the territorial balance of employment opportunities. It is about the formation of conditions under which economic activity is not concentrated exclusively in large cities, but growth points are created in small towns and communities, and this contributes to strengthening social cohesion, reducing labor migration and preserving the demographic potential of the region. The inclusive component of the regional labor market ensures both social justice and economic efficiency. It expands the base of productive employment, increases the level of use of human capital and forms the prerequisites for long-term socio-economic sustainability of the region. Inclusivity means not just the availability of jobs, but the creation of conditions for decent, stable and highly productive work, accessible to all groups of the population.

Thirdly, the digital transformation of the economy and society is a significant factor. Its impact on the regional labor market is systemic in nature and covers structural, institutional and behavioral changes in the field of employment. Digitalization is not only a technological trend, but also a factor in a profound restructuring of labor supply and demand, ways of organizing labor activity and mechanisms for reproducing human capital. First of all, the structure of demand for labor is transformed. There is a growing need for specialists in data analysis, information technology, cybersecurity, automation of production processes, and management of digital systems. At the same time, routine professions that are subject to algorithmization are reduced or significantly modified. This increases the importance of cognitive, technical and interdisciplinary competencies, as well as the ability to quickly adapt and retrain.

The nature of labor relations is also changing. Remote and hybrid employment formats, platform

labor, and project models of cooperation are spreading. The space of interaction between employees and employers is expanding, regardless of territorial boundaries, and the flexibility of the labor market is increasing. At the same time, the issues of social protection, income stability and regulatory regulation of new forms of employment are becoming more acute. The use of online employment platforms, digital job databases, algorithmic resume screening, and AI recruiting tools speeds up recruitment and increases the transparency of market processes, which leads to an increase in the requirements for digital literacy of all participants in labor relations.

Significant changes are taking place in the field of vocational training. The development of EdTech solutions, online courses, micro-credentials, and modular programs creates conditions for continuous updating of competencies in accordance with the needs of the economy. Educational trajectories are becoming more flexible and focused on the practical needs of employers.

At the same time, digital transformation generates risks: displacement of low-skilled labor, growth of technological unemployment, and increased socio-economic differentiation. Its effects depend on the ability of regional policies to combine technological renewal with mechanisms for professional adaptation and ensuring equal access to new opportunities. In the absence of such coherence, innovation dynamics may be accompanied by deepening structural imbalances in the labor market.

Fourthly, the regional dimension of the innovative and inclusive labor market is existential, reflecting the spatial specifics of the formation and transformation of employment, taking into account the economic specialization of the territory, the demographic structure of the population, the state of infrastructure and institutional capacity. It is at the regional level that there is direct interaction between employers, employees, educational institutions and authorities, which ensures the practical implementation of innovative and inclusive approaches.

The configuration of the regional labor market is determined by the sectoral structure of the economy. Industrial, agricultural, tourist or creative regions are characterized by a different structure of demand for competencies, different intensity of technological renewal and unequal opportunities for integration into global production chains. This determines the variability of trajectories of modernization of employment and the formation of human capital.

Under such conditions, the innovative and inclusive model of labor market development requires a differentiated approach. Its parameters should be consistent with local competitive advantages, resource base, and strategic priorities of smart specialization. The effectiveness of the implementation of such a model depends on the integration of employment policy with the regional innovation strategy, investment programs and educational competence policy, which ensures the integrity of management decisions and increases the adaptability of the regional socio-economic system.

The systemic nature of the transformation of the regional labor market in the context of digitalization necessitates the structuring of key factors of its development. The identification of dominants allows not only to outline the content components of the innovation-inclusive model, but also to establish the logic of their functional interaction, implementation tools and expected socio-economic results. Generalization of such characteristics creates an analytical basis for further assessment of the state of regional labor markets and the formation of reasonable management decisions (Table 1).

The generalized model of interaction of the dominant factors in the development of the innovative and inclusive labor market of the region is based on the hierarchical logic of their functioning and interdependence. The basic level is digital infrastructure as the material and technological basis of transformation processes. The level of development of telecommunication networks, digital platforms, electronic services and cybersecurity systems determines the technical possibilities of modernizing employment, spreading remote forms of work, platforming labor relations and the availability of educational resources. The spatial accessibility of digital services directly affects the territorial mobility of the workforce and the integration of peripheral territories into the national economic space.

At the functional level, educational-competence and innovation components interact. The educational and competence component forms the quality of human capital through the development of digital, technical and interdisciplinary skills, ensures the adaptability of the workforce to technological changes and reduces the time lag between the emergence of new professions and the training of relevant personnel. The innovation component, in turn, transforms the structure of demand for labor, stimulates the creation of high-tech jobs and determines the direction of structural

restructuring of the region's economy. Their interaction forms a dynamic balance between the supply of competencies and the demand for them.

Table 1. Dominants of the development of the innovative and inclusive labor market of the region in the context of digitalization

Dominant	Implementation mechanisms	Evaluation indicators	Expected effects for the region	Potential risks
Innovative	Stimulating R&D; support for startup ecosystems; tax instruments for innovative business; development of industrial and technological parks	The share of high-tech sectors in the GRP; share of those employed in STEM fields; R&D costs; Labor productivity	Increasing competitiveness; growth of added value; creation of quality jobs	Technological unemployment; Strengthening the qualification gap
Inclusive	Active employment programs; support for social entrepreneurship; flexible forms of employment; Regional Integration Programs	The level of economic activity of the population; the level of employment of vulnerable groups; gender pay gap; Social Cohesion Index	Expansion of the taxpayer base; reduction of social tension; increasing social mobility	Formal inclusion without a real improvement in the quality of employment
Institutional	Regional Digital Development Strategies; public-private partnership; clusters "business-education-government"; Labor Market Monitoring Systems	Availability and quality of strategic documents; the level of institutional capacity; Scope of partner projects	Increasing the manageability of transformations; reduction of structural imbalances	Policy fragmentation; duplication of functions; low efficiency of program implementation
Educational and competence	Modernization of vocational and higher education; dual education; reskilling and upskilling programs; micro-qualifications	The level of digital skills of the population; the share of adults in training programs; compliance of competencies with employers' demand	Productivity growth; reduction of structural unemployment; Increasing labor mobility	The lag of the educational system from the pace of technological changes
Digital infrastructure	Investments in telecom networks; implementation of e-government; development of remote employment platforms; Cybersecurity	High-speed Internet coverage; the level of use of e-services; share of remote employment	Expanding employment opportunities regardless of the territory; Reduction of transaction costs	Digital inequality between territories; Cyber threats

Source: Authors' development.

The regulatory dimension is provided by an institutional component that integrates strategic planning, financing mechanisms, regulatory and legal support and a labor market monitoring system. It is the institutional capacity of the authorities that determines the coherence of stakeholders' actions, the coordination of employment policy with the policy of innovative development and education, as well as the efficiency of the use of resources. The presence of stable institutional mechanisms reduces the level of uncertainty and transaction costs for entities.

The social dimension of transformation is reflected through an inclusive component, which characterizes the degree of involvement of various socio-demographic groups in quality employment and the level of socio-economic cohesion of the region. The effectiveness of innovation and educational changes is evaluated precisely through the parameters of labor market accessibility, reduction of inequality and expansion of opportunities for economic participation of the population.

The synchronized development of these dominants forms a systemic multiplicative effect. The growth of innovation activity increases labor productivity and the share of added value in the regional product. Inclusivity expands the economic base by activating labor potential and increasing tax revenues. Competency-based adaptability of the workforce reduces the scale of structural unemployment and increases the flexibility of the labor market. Institutional coherence reduces administrative barriers and coordination costs. Developing digital infrastructure reduces spatial disparities and ensures the integration of local markets into wider economic networks.

An imbalance between dominants leads to the accumulation of structural gaps. Technological renewal without proper training generates an increase in technological unemployment. Uneven access

to digital resources forms employment segmentation. Insufficient institutional coordination exacerbates policy fragmentation. Formally expanding the participation of vulnerable groups without improving the quality of jobs limits the long-term socio-economic effect. Thus, the effectiveness of the development of the innovative and inclusive labor market is determined by the degree of integration of its dominants within the framework of a holistic regional strategy of digital transformation.

The practice of transformation of regional labor markets in the context of digitalization testifies to the presence of a number of *systemic problems* that reduce the effectiveness of innovative and inclusive development. Technological renewal occurs unevenly, which deepens territorial disproportions and forms segmentation of employment. The educational system does not always have time to adapt the content of training to the dynamics of demand for new competencies, as a result of which the structural gap between the supply of work and the strength and needs of innovation sectors. Institutional fragmentation of employment, education, and digital development policies makes it difficult to coordinate decisions and leads to the dispersion of resources. At the same time, inclusive mechanisms are often formal in nature and do not ensure the integration of vulnerable groups into segments of high-quality, productive employment.

These problems indicate the presence of imbalances between the key dominants of the labor market development and require their systematic coordination. To identify the nature of cross-influences, determine critical interaction points and assess potential effects, it is advisable to apply a matrix approach (Table 2).

Table 2. Complementary relationship of the dominant development of the innovative and inclusive labor market of the region: matrix approach

Dominant source of influence	Recipient dominant				
	Innovative	Inclusive	Institutional	Educational and competence	Digital infrastructure
Innovative		Forms demand for new groups of employed; stimulates the integration of young people and highly qualified personnel	Needs strategic coordination and regulatory support	Generates a demand for STEM, digital and creative competencies	Increases the requirements for speed, security, and availability of digital networks
Inclusive	Expands the human resources base of the innovation sector		Requires adaptive socio-economic policies	Focuses educational programs on accessibility and flexibility	Requires universal access to digital services
Institutional	Creates conditions for investment in innovation	Forms mechanisms of social integration		Regulates education standards and qualifications systems	Coordinates the development of the digital ecosystem
Educational and Competence	Provides the personnel basis for technological modernization	Increases the employment of vulnerable groups through reskilling	Needs regulatory and financial support		Uses digital learning platforms
Digital infrastructure	Provides the technical basis for innovation activities	Expands the territorial and social accessibility of employment	Increases management transparency	Creates an environment for continuous online learning	

Source: Authors' development.

The construction of the matrix of interaction of dominants allows for a structured way to understand the dependencies between the innovative, inclusive, institutional, educational-competence and digital-infrastructure components and to form an analytical basis for justifying managerial decisions at the regional level.

The development of the innovation-inclusive labor market has a polycentric character and is determined not by the isolated action of individual dominants, but by the density and coherence of their interaction. Each component simultaneously acts as a source and recipient of influences, forming a

network of functional dependencies, within which changes in one segment are broadcast to the entire system. The analysis of cross-links allows us to identify the bottlenecks of regional policy, in particular, the interaction of the innovation and educational-competence components, as well as the role of digital infrastructure as an environment that determines the scale and speed of transformations. The institutional component performs an integrative function, ensuring the coordination of interests and resources, while the inclusive component reflects the final socio-economic performance of the system.

6. Conclusions

It is advisable to consider regional policy in the context of the development of an innovative and inclusive labor market through the prism of the formation and development of an integral innovation ecosystem in the region. It is within its framework that key relationships between business, the scientific and educational environment, authorities, entrepreneurship support institutions and civil society arise and are reproduced. These ties are manifested in cooperation on personnel training, knowledge and technology transfer, cluster development, stimulation of startup initiatives and the formation of domestic demand for highly skilled labor. Therefore, the innovation-inclusive labor market is not an autonomous subsystem, but the result of the coordinated interaction of elements of the regional innovation ecosystem.

When building an innovative and inclusive regional labor market, it is necessary to take into account four interrelated aspects: the innovation component, the inclusive component, the regional dimension and digitalization opportunities. The innovation component provides structural modernization of employment and productivity growth; the inclusive component guarantees the involvement of various social groups in high-quality and decent work; the regional dimension allows you to adapt the policy to the specifics of the territory, its specialization and demographic trends; Digitalization catalyzes change, shaping new professions, employment formats, and training mechanisms. Only a comprehensive consideration of these aspects ensures the balance and long-term sustainability of transformation processes in the labor market.

Innovation without inclusiveness does not create a sustainable development model, just as social orientation without technological renewal does not ensure the competitiveness of the region. Therefore, the strategy for the development of the labor market should combine the stimulation of the creation of high-tech jobs with a proactive policy of professional adaptation, retraining and support of vulnerable categories of the population. In the context of digital transformation, this means the need to form a system of continuous learning, forecast personnel needs, and introduce flexible institutional mechanisms for regulating new forms of employment.

The dominants of the regional policy for the formation of an innovative and inclusive labor market in the region should be: development of innovation infrastructure and cluster initiatives; integration of education, science and business; ensuring digital accessibility and development of digital competencies of the population; support for entrepreneurship and self-employment; active policy of social integration and territorial balance of employment. The implementation of these priorities will contribute to the formation of a competitive, socially cohesive and sustainable regional labor market capable of effectively responding to the challenges of technological and socio-economic transformations.

It is appropriate to associate the prospects for further research with the development of a roadmap for the regional policy of transformation of regional labor markets in Ukraine in the context of a full-scale war.

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