# UNLEASHING SUSTAINABLE RECOVERY AND DEVELOPMENT: ANALYZING EUROPEAN COUNTRIES' LABOR MARKET EXPERIENCE

## Iryna Bashynska\*

<sup>1</sup> Department of Enterprise Economics, Odessa Polytechnic National University, Odesa, Ukraine
<sup>2</sup> Department of Enterprise Management, AGH University of Krakow, Krakow, Poland

<u>bashynska@agh.edu.pl</u>

https://orcid.org/0000-0002-4143-9277

## Hanna Smokvina

Department of Accounting, Analysis and Audit, Odessa Polytechnic National University Odesa, Ukraine, <a href="mailto:smokvinann@gmail.com">smokvinann@gmail.com</a>

https://orcid.org/0000-0001-6058-4720

## Kseniia Bondarevska

Department of Social Security and Tax Policy, University of Customs and Finance Dnipro, Ukraine, <u>Kseny-8888@i.ua</u>

https://orcid.org/0000-0001-8683-6834

## Tetyana Semigina

National Qualifications Agency
Kyiv, Ukraine, <a href="mailto:t.semigina@nqa.gov.ua">t.semigina@nqa.gov.ua</a>

https://orcid.org/0000-0001-5677-1785

#### Yevhen Tsikalo

Department of Accounting and Audit, Ivan Franko national University of Lviv Lviv, Ukraine, <a href="mailto:yevhen.tsikalo@Inu.edu.ua">yevhen.tsikalo@Inu.edu.ua</a>
<a href="mailto:https://orcid.org/0000-0001-8051-9299">https://orcid.org/0000-0001-8051-9299</a>

# Viktoriia Terletska

Department of Management and International Entrepreneurship, Lviv Polytechnic National University

Lviv, Ukraine, Viktoriia.O.Terletska@lpnu.ua

https://orcid.org/0000-0002-9334-2557

Article history: Received 21 May 2023, Received in revised form 5 June 2023, Accepted 5 June 2023, Available online 7 June 2023.

This work was published free of charge as a publisher's support for Ukrainian authors struggling with wartime difficulties caused by Russian aggression against their country.

## Highlights

The policies and strategies prioritizing employment opportunities and supporting social packages can lead to sustainable economic recovery.

## Abstract

The study analyzes the labor market experience of European countries and evaluates the impact of unemployment rates, in-demand professions, and social packages on sustainable economic recovery. The authors use correlation-regression analysis and time-series analysis with Eviews 4.0 software package to identify trends and patterns in large amounts of data. The article's findings provide valuable insights into the labor market experience of European countries and can aid policymakers in developing sustainable policies and strategies for economic recovery, which can positively impact the European region. The economic impact of the article is significant, as it thoroughly analyzes European countries' labor market experience and evaluates the effects of various factors on sustainable economic recovery. By identifying the essential components of the labor market's structure and determining their impact on GDP, the article's findings can aid policymakers in developing sustainable policies and strategies for economic recovery, ultimately positively impacting the European region. The regional impact of the article is also noteworthy, as it focuses specifically on European

countries' labor market experience, making it particularly relevant to the region. By comparing individual European countries'. Positive and negative market features and providing comparative characteristics of labor market stakeholders, the article offers insights into the regional impact of the labor market on economic recovery. The article's evaluation of the impact of unemployment rates, in-demand professions, and social packages on sustainable economic recovery has social implications. The article suggests that policies and strategies prioritizing employment opportunities and supporting social packages can lead to sustainable economic recovery, ultimately benefiting individuals and society.

## **Keywords**

Gross Domestic Product (GDP); in-demand professions; labor market; social packages; sustainable recovery; unemployment rates.

## Introduction

The current state of Ukraine's economy has negatively affected the labor market [1,2]. Today, the institution of the labor market has almost been destroyed, and the issue of its effective functioning is becoming clear. First, it concerns the migration of the population to foreign countries, which led to a significant reduction in employment; another part of the population lost their jobs under the influence of the negative consequences of martial law. It is known that the labor market does not exist independently; it continuously interacts with the markets of production of goods, provision of services and other markets and institutions [3,4]. Therefore, secondly, the decrease in the population and the increase in unemployment also affected the reduction of the Gross Domestic Product (GDP) indicators of Ukraine in almost all sectors.

The purpose of the study is to examine the factors affecting the labor market, which will allow identifying weak points in the economic system; drawing on the best practices of European countries will help identify trends for the gradual revival of the labor market, improve the socio-economic situation, and reignite interest among the population in Ukraine's revitalization. Issues of regulation, functioning and improvement of the labor market are at the center of the attention of states, scientists and other subjects of economic activity. Since they cover the employed and unemployed population (economically active population); establishing robust contractual regulations in the field of labor relations and harnessing the country's intellectual potential are crucial for driving the development and efficiency of the national economy [5]. These unique characteristics of the labor market, combined with the diverse processes occurring within each country's labor market, serve as vital foundations for the reconstruction, reorientation, and sustainable development of Ukraine's economy (or any state in a post-crisis period).

## Methods

In the article, the authors used both general scientific methods and special ones (Figure 1). Justify the use of special methods:

- to gain the article's goal, authors have chosen correlation-regression analysis as it allows considering the leading indicators of impact on GDP, identifying the most critical components of this structure and determining their effect on the performance indicator. The choice of GDP indicators for calculating the model is since it covers the final results of the production activity of economically active units of the labor market (labor force), which are reflected in the cost of manufactured goods and services provided for final use. Using this method, the authors can determine the most important components of the labor market's structure and their impact on the performance indicator (GDP), providing valuable insights into the labor market experience of European countries. Correlation-regression analysis also enables the authors to analyze large amounts of data and identify trends and patterns in the data, which would be challenging to do using other methods. Additionally, this method can help the authors to make predictions about future trends in the labor market, which is essential for developing sustainable policies and strategies for economic recovery.
- since this article analyses European countries' labor market experience over time, time-series analysis is particularly relevant. The authors considered that using the Eviews 4.0 software package is also appropriate for this article's research. Eviews allows the authors to analyze large amounts of time-series data and identify trends and patterns in the data, making it a valuable tool for analyzing the labor market experience of European countries. Furthermore, Eviews provides a range of statistical tools and features that enable the authors to perform regression analysis and other types of econometric analysis. These features make it easier for the authors to identify the relationship between the different factors affecting GDP, such as unemployment rates, in-demand professions, and social packages.

The methodology of empirical and theoretical analysis of the labor market, which includes theoretical research and practical use, is presented in Figure 1.

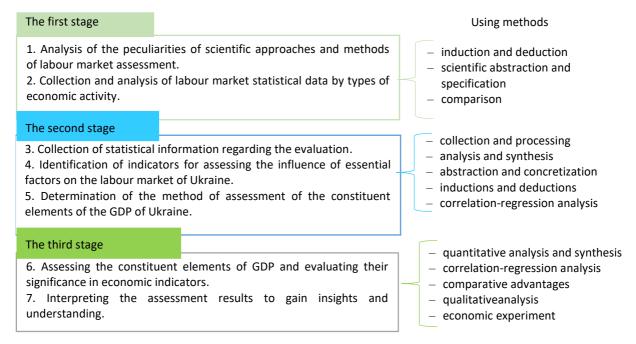


Figure 1. Research methodology. Source: Authors.

## **Results**

The state of the labor market and employment processes are crucial socio-economic parameters that significantly influence social development and the competitiveness of the national economy. On one hand, the labor market is an integral part of the economic system, shaping the direction and pace of macroeconomic dynamics. On the other hand, it serves as a medium through which macroeconomic policies and developments impact the well-being of the population and various social processes [2,6]. Given recent events in Ukraine, the labor market is undergoing a transformation accompanied by negative consequences and trends. These include the emigration of labor force, mass mobilization of men during a full-scale invasion, declining labor productivity due to population demoralization, a rise in informal employment, and an increase in non-standard employment opportunities, among others. The primary criteria used to gauge the efficiency of the labor market are the economically active and inactive population, as well as the employed and unemployed individuals. (Table 1).

Table 1. Labor force aged 15-70 for 2018-2021. Source: Calculated by the authors based on [7,8].

Indicator	Population					
	2018	2019	2020	2021		
Labor force (thousands of people)	17957.8	18155.7	17643.4	17321.6		
The level of participation of the population in the labor force (%)	62.6	56.3	62.0	60.8		
Employed population, thousands of people	16408.5	16668.0	15974.4	15610.0		
Employment rate, %	57.2	51.7	56.1	55.7		
Unemployed population (according to the ILO methodology), thousands of people	1549.3	1487.7	1669.0	1711.6		
Unemployment rate (according to the ILO methodology), %	8.6	8.2	9.5	9.9		

Thus, after conducting an end-to-end analysis of the data of the State Statistics Service of Ukraine [8], during the studied period, there has been a concerning trend in the workforce numbers (18,155.7 thousand people in 2019 and a gradual reduction to 17,321.6 thousand people in 2021) is observed. Other indicators, such

as the number of employed populations, employment level, etc., show a comparable scenario. Considering the indicators related to unemployment levels during the relevant period, there has been a gradual increase in the number of unemployed individuals, following the International Labor Organization (ILO) methodology. In2021, the number of unemployed people reached 1,711.6 thousand, which represents an increase of 222.9 thousand compared to 2019. This rise in unemployment can be primarily attributed to the unstable circumstances stemming from the implementation of quarantine measures during the Covid-19 pandemic. Furthermore, in relative terms, a corresponding analogy can be seen, with the unemployment rate rising from 8.6% in 2018 to 9.9% in 2021.

One of the most generalized characteristics of any country's economy is the population's employment level. This indicator reflects economic development, social and labor activity of citizens. The employment structure directly reflects the relationship between the production and consumption of goods. The need of any individual for social activity, social activity and satisfaction of material needs prompts the inclusion of a potential worker in the economic system. To date, the domestic labor market provides a significant range of vacancies for various types of economic activity (see Table 2 for more details).

Table 2. Number of vacancies by t	types of economic activity, 2020-2022.	. Source: Calculated by the authors ba	sed on 11./1.

Number of vacancies, units	2020	2021	2022	Growth rate, %		
				2021/2020	2022/2021	
Total:	829653	705816	325145	-14.93	-53.93	
Agriculture, forestry and fisheries	132416	113411	63403	-14.35	-44.09	
Mining and quarrying	12181	11037	5781	-9.39	-47.62	
Processing industry	142699	121496	61715	-14.86	-49.20	
Construction	31586	26324	9290	-16.66	-64.71	
Transport, warehousing, postal and	53649	44667	21931	-16.74	-50.90	
courier activities						
Education	76675	65780	27971	-14.21	-57.48	
Health care and provision of social	50892	42029	21596	-17.42	-48.62	
assistance						
Arts, sports, entertainment and	7568	7133	3007	-5.75	-57.84	
recreation						

Thus, the data of the State Employment Service of Ukraine (Table 2) [7,8] show a notable decline in job openings across various sectors of the Ukrainian economy between 2020 and 2022. During this time, the labor market of Ukraine experienced the most difficult situation caused by the pandemic and military actions on the territory of Ukraine. ILO forecasts show that the unemployment rate will reach 15.5% in 2023. Thus, the agriculture and industry sector suffered the most significant losses, as evidenced by reduced business entities in the Ukrainian market. Also, the sphere of education and health care underwent substantial transformations, primarily caused by the reduction in the number of educational and medical institutions during the destruction of the infrastructure. A significant part of the workforce left the country due to unsatisfactory working conditions and, as the main priority, concern for their safety. The imbalance of labor supply and demand accordingly affects the reduction of GDP due to decreased production, forging and technical potential, professional and qualification trends, etc. It is important to evaluate the factors that contribute to the growth of different components of the economy. These assessments are crucial for strategic analysis, devising new strategies, and establishing competitive advantages at both the industry and national levels. We will build a correlation-regression model of the assessment of the constituent elements (in terms of the presented indicators) of the GDP of Ukraine to identify the most critical factors and provide suggestions (Table 3). We will build a correlation matrix of indicators and determine the magnitude and nature of the impact on the studied indicator of all other hands. Let's choose the following analytical dependence between the indicators: Y - dependent variable, X1, X2, ..., X12 independent variables. The model specification is presented in equation 1:

(1) 
$$Y = a_0 + a_1 x_1 + a_2 x_2 + a_3 x_3 + a_4 x_4 + ... + a_n x_n$$

#### where:

 $a_0$ ,  $a_1$ ,  $a_2$ ,  $a_3$ , ...,  $a_n$  - parameters of the model n - the number of factors of the linear model.

Table 3. Indicators of GDP level assessment by components. Source: Calculated by the authors based on [1,7].

Value by indicators	Specific weight of the industry in GDP					
GDP of Ukraine (dependent variable)	Υ	2018	2019	2020	2021	2022
Specific weight of the agricultural sector (independent variable)	X <sub>1</sub>	10.1	9.0	9.3	9.5	9.8
Specific weight of construction (independent variable)	X <sub>2</sub>	2.3	2.7	2.9	3.1	2.8
Share of finance and insurance (independent variable)	X <sub>3</sub>	2.7	2.9	3.2	3.2	3.0
Specific weight of IT-spheres (independent variable)	X4	3.9	4.6	5.4	5.9	6.1
Specific weight of education (independent variable)	X <sub>5</sub>	4.5	4.3	4.3	4.5	4.4
Specific weight of the transport sector (independent variable)	X <sub>6</sub>	6.4	6.7	6.3	6.9	6.5
Specific weight of the real estate transaction (independent variable)	X <sub>7</sub>	5.8	6.1	6.4	6.8	6.2
Specific weight of public administration and defense (independent variable)	X <sub>8</sub>	6.0	6.7	7.2	7.5	7.3
Specific weight of trade (independent variable)	<b>X</b> 9	13.3	13.2	14.0	14.5	15.3
Specific weight of taxes (independent variable)	X <sub>10</sub>	14.7	14.8	15.0	15.2	14.8
specific weight of industry (independent variable)	X <sub>11</sub>	21.3	20.7	19.0	20.2	19.7
Share of other industries (independent variable)	X <sub>12</sub>	12.0	11.7	10.2	10.5	10.3

The initial data for building the model are presented in table 3.

In the first stage, we will check the model for multicollinearity. Let's combine the data into a correlation matrix, which measures the strength of the relationship between the selected factor values and the resulting indicator. The correlation matrix calculation makes it possible to draw a conclusion about the significant dependence between the performance indicator (Y) and the factor values.

In the second stage, it is advisable to point out the dependence of the factor values on each other. Checking for the presence of the multicollinearity phenomenon necessitates the exclusion of some factors from the economic - mathematical model. It is advisable to use such an exception to the factor values  $X_2$ ,  $X_3$ ,  $X_6$ ,  $X_7$ ,  $X_8$ ,  $X_{10}$ ,  $X_{11}$ , and  $X_{12}$ , the value of the absolute value of the correlation coefficients of which >0.7, which, according to the Chaddock scale [9], characterizes a strong and, accordingly, solid connection between the factorial data values. In this case, we will conduct a regression analysis between significant indicators and factor values  $X_1$ ,  $X_4$ ,  $X_5$ ,  $X_9$ ,  $X_{10}$ .

Furthermore, the model is built using the Eviews 4.0 software package. The constructed model has the following form:

(2) 
$$Y = 2.620397021 * x_1 + 0.8543057437 * x_4 + 1.498573173 * x_5 + 0.6587120427 * x_9 + 1.218204845e - 05 * x_{10} - 3.362485605$$

In the third stage, we will check the indicators for importance. The initial data are presented in the table. 4.

Table 4. Output data for testing indicators for significance. Source: Calculated by the authors used Eviews 4.0.

Variable	Coefficient	t-Statistic	Prob.
$X_1 => X_1$	2.620397021	167.7110	0.0126
X <sub>4</sub> =>X <sub>2</sub>	0.8543057437	9.565177	0.0714
X <sub>5</sub> =>X <sub>3</sub>	-1.498573173	-20.2297	0.00210
X <sub>9</sub> =>X <sub>4</sub>	0.6587120427	217.7317	0.0019
X <sub>10</sub> =>X <sub>5</sub>	1.218204845e-05	9.817612	0.0580

R-squared 1.000000

Adjusted R-squared 0.997978

S.E. of regression 0.006721

Durbin-Watson stat 2.121281

F-statistic 4121.0

Prob(F-statistic) 0.001312

Let's check the significance of the regression. The obtained values of F-statistic = 4121.0 (> 100) and Prob (F-statistic) = 0.0013, which are less than 0.05 and 0.01 (significance level) confirm the statistical significance of the regression as a whole and the adequacy of the model according to the Fisher test. The coefficient of paired regression R2 = 1.000000, which highlights a strong interconnectedness between the components. Hence, the average error of approximation is calculated according to equation 3:

(3) 
$$A = \frac{1}{n} \sum \left| \frac{(y - \widetilde{yx})}{y} \right| * 100$$

Therefore, A = 1.52%. This model can be used because the average approximation error does not exceed 10%. Such a calculation can also be used considering other indicators, deepening the important indicators (employment, unemployment) of influence on the efficiency of the functioning of the labor market. Correlation-regression analysis has identified the key sectors of GDP that require special attention and support from the government. These include agriculture, education, IT sector, trade, and taxes. The given technique is convenient enough to use since only official statistical materials are used in the calculations.

Each country is distinguished from others by its socio-economic strategy, the inherent character of mentality, level of education, features of the cultural environment, etc. These primary factors form the basis of our own national model of the labor market. Social dialogue, which rages on the scale of a particular state, is an effective tool of state management, the main functions of which are to find acceptable ways of economic and social progress, increase the level of well-being and quality of life, social security, and a stable environment in society. Based on the given provisions, it acts as a catalyst for reforms and possible innovative solutions, primarily ensuring openness, transparency and cooperation between all possible sectors of the economy. The experience of foreign countries demonstrates a difficult path in forming a national model of the labor market. Today, the most influential factors exerting significant pressure on the European labor market are the globalization of the economy and, accordingly, regionalization. Each participant of the European market, against the background of strengthening the competitiveness of its participants, tries to adhere to the measures of the innovative economic development model. The global economic crisis remains the most influential factor in the labor market of European countries. Considering national specificities, resource, economic and other opportunities, each country forms its own model of the national labor market, which in turn is formed at the expense of the education system (training and retraining of personnel), the formation and filling of jobs, the system of material incentives, regulation of social and labor relations, etc. [1,4]. Each state adheres to its own anti-crisis policy regarding unemployment, employment, and the number of jobs, which is due to various models of regulating labor relations. In this course, each state has its inherent features of the labor market (see Table 5 for details).

The labor market, as the main core of resource markets, has an impact on political, economic and social life, the state and processes of which are transformed into the population's consciousness, ensuring social stability in society. Paying attention to the fact that Ukraine and many other countries are in complex, unstable social and political conditions, the need to study the experience of economically developed countries and analyze the information of the most critical stakeholders of the labor market increases. Among such essential

components, the level of unemployment, the definition of in-demand and in-demand professions, requirements for foreigners during employment, the social package and the average salary should be singled out (more details in Table 6).

Table 5. Comparison of positive and negative market features of individual European countries. *Source: Compiled by the authors according to the data* [5,10–14].

Country	Positive features of the market	Negative features of the market
Germany	<ul> <li>the level of unemployment is low, especially among young people, which is connected with the dual apprenticeship system</li> <li>Germany's labor market was almost unaffected by the Great Recession, especially in terms of total employment</li> <li>the labor market remains quite challenging in international comparison, but the country manages to avoid many adverse side effects.</li> </ul>	<ul> <li>the tendency to prioritize academic education over professional training endangers the vital role of the dual apprenticeship system</li> <li>given the relatively high cost of labor, it is important that Germany remains productive and innovative</li> <li>the return of protectionism.</li> </ul>
Switzerland	<ul> <li>unemployment remains stably low</li> <li>wage inequality remains low by international standards</li> <li>there is no evidence that the main events of the last 15 years (the crisis in the Eurozone, the mass flow of refugees or the appreciation of the Swiss franc) have had a negative impact on the labor market.</li> </ul>	<ul> <li>unemployment among foreigners is more than twice as high as among Swiss citizens</li> <li>the difference in wages between Swiss citizens and foreigners remains high, especially among men</li> <li>the level of long-term unemployment increased and remained higher</li> <li>notable regional disparities in both the proportion of the labor force and the levels of unemployment.</li> </ul>
Poland	<ul> <li>the employment rate among persons aged 15-70 increased significantly between 2000 and 2016, while the unemployment rate decreased significantly over the same period</li> <li>in 2016, the share of older adults in the labor force reached the highest level since 1990</li> <li>from 2000 to 2016, real wages increased by 54%.</li> </ul>	<ul> <li>since 2000, the number of temporary employments has more than doubled, and now Poland has the highest share of temporary jobs in the EU</li> <li>the labor force share of older workers remains low compared to most developed countries</li> <li>the reduction of the retirement age in 2017 increases the decline in labor supply due to the ageing of the population</li> <li>high gender pay gap.</li> </ul>
Spain	<ul> <li>since 2014, there has been an increase in the level of employment</li> <li>in 2018, gender gaps in workplace employment and temporary employment were smaller than before the recession</li> <li>the overall level of temporary employment decreased after the Great Recession</li> <li>slow growth of the share of employment of immigrants</li> <li>reduction of overall monthly wage inequality and inequality in the lower half of the monthly wage distribution.</li> </ul>	<ul> <li>during the Great Recession, youth unemployment and long-term unemployment rose sharply</li> <li>the share of men in the labor force decreased due to a sharp reduction in the participation of young men in the post-crisis period</li> <li>the level of temporary employment among young people has increased significantly</li> <li>real wages fell during the recession and have not yet returned to pre-crisis levels.</li> </ul>

Table 6. Comparative characteristics of labor market stakeholders. *Source: Compiled by the authors according to the data* [1,2,6,10,15–20].

Labor market st	akeholders	Germany	Switzerland	Poland	Spain	Ukraine
In-demand	agriculture				+	+
professions	tourist business				+	
	industrial production			+		
	unqualified specialists	+			+	
	the field of it technology	+	+	+	+	+
	sphere of wholesale and retail trade			+		+
	media and telecommunications			+		
	medical staff	+	+			
	management positions		+			+
	financial sphere		+			
	the field of education		+			
Undemanding	specialists with higher education			+	+	+
professions	specialists without higher education	+	+			+
Requirements	registration at the labor exchange	+	+	+	+	+
for foreigners during	job search on special sites with job announcements	+	+	+	+	+
employment	contacting the company directly	+	+	+	+	+
	application to the employment service, which deals with employment	+	+	+	+	+
	residents	+	+	+	+	+
	application to a private employment agency	+	+	+	+	+
	job search in newspapers and on bulletin boards	+	+	+	+	
Social package	work permit	+	+	+	+	
	medical insurance, including against accidents	+	+			
	old age insurance	+	+			+
Salary*	rounded minimum/average, USD	2136/4100	4450/7430	830/1750	1300/ 2500	180/62

<sup>\*</sup> wage data cannot be directly compared, as taxes on it are very different

By integrating the findings of economic and mathematical modeling with the analysis of European experience regarding labor market development, it becomes possible to identify priority areas and future prospects for economic and social growth in Ukraine (Figure 2).

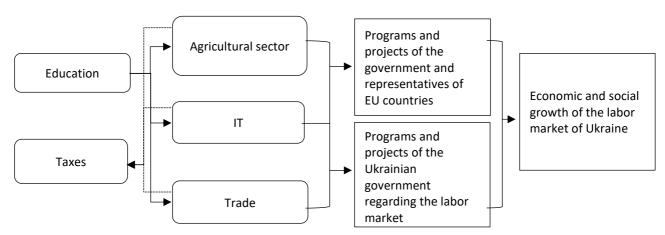


Figure 2 - Priority directions of economic and social growth of the labor market of Ukraine. Source: Own development.

The proposed model consists of two blocks of factors; The first block of factors, the basic one, is equally characteristic of any country and consists of Education and Taxes.

## Education.

As the most complex sector, the sphere of education has been undergoing changes and reforms for a long time. The complexity and importance of this component lie in the fact that it covers all the features listed above (agricultural sector, trade, IT sphere and taxes). It would be helpful for Ukraine to choose the experience of Germany as a foundation. First, it concerns the implementation of the dual education system. Dual education is built on the coordination of the interests of the educational and production spheres, which makes it possible to overcome the inconsistency between these spheres in personnel training. Applicants of higher education, professional and pre-higher education first receive basic knowledge of theoretical material. Then he gets practice according to the chosen speciality at the enterprise with which the educational institution has signed a cooperation agreement. The work of young specialists is paid according to the contract. Moreover, such practice can be carried out during the entire training period (3 days of studying theoretical material and 2 days of gaining practical experience at the enterprise). This educational approach carries dual importance, both socially and economically, as it guarantees an equilibrium between labor market demand and the availability of skilled workforce. Namely: every willing citizen gets a profession; convergence of the employment system with the education system is carried out, which will ensure a balance between the needs and interests of employers and young professionals; stimulation of pedagogical skills of teachers by the conditions of the employer aimed at the quality of education; the participation of enterprise representatives in the development of educational plans, compilation of the opus of the profession; to permanently attract foreign teachers-practitioners to teaching in Ukrainian educational institutions, etc.

#### Taxes.

Today, a simplified and general taxation system operates in Ukraine. In the last years of the announcement of the European choice in Ukraine, many steps have been taken to integrate the economy into the European space. Considering world practices and Ukrainian experience in conducting economic activity, Poland is the most optimal country for business scaling in European countries. Poland has long proven itself on the positive side. The Polish government continues supporting business registration and economic activity in the country. Economic entities of which can choose the appropriate form of taxation: Single tax - 19% (9% - in case of compliance with the profit limit of 2,000,000 euros); Tax on withdrawn capital/dividends - 19%; Personal income tax (PIT): 17% - up to 18,000 euros; 32% - more than 18,000 euros; The tax rate for a self-employed person is 20% [21]. Although revising tax preferences, expanding the tax base, and increasing tax revenues may not have a substantial impact on GDP growth, it is important to note that GDP growth leads to enhanced financial well-being, higher wages, and increased tax revenues. To achieve this, addressing the shadow economy, establishing transparent control systems, simplifying tax payment procedures for small and medium-sized businesses (which are highly adaptable to innovation and technology in the real economy), implementing a progressive tax distribution among taxpayers, and reducing unwarranted benefits are crucial steps. In the previous phase, combating the surplus of labor present in nearly all sectors of Ukraine's economy requires implementing strategies to reorient enterprise activities. Additionally, the state should aid and support businesses by temporarily easing fiscal policies [5]. A priority vector of social policy will contribute to keeping the economy afloat by supporting the population's purchasing power. The second block, identified by us with the help of correlation analysis, is the most critical factors (agrarian, IT and trade sectors) that can most effectively and quickly help in the sustainable renewal of the country.

# Agrarian sector.

The agricultural sector, which forms the socio-economic conditions of agricultural development, and creates economic, food and environmental security, has always been considered a city-forming branch of the economy of Ukraine. Agro-industrial regions include Odesa, Kherson, Mykolaiv, Dnipropetrovsk, Kharkiv, Cherkasy, Kirovohrad, Poltava, Sumy regions, and others [22]. The specified regions need a workforce of specialists in the agro-industrial complex. One of the key socio-economic objectives for the state in ago-complex development is to support farmers through various means.

This includes initiatives such as modernizing agricultural machinery by attracting investments from EU countries, implementing development programs with the involvement of the Ukrainian government and investor countries, enhancing living conditions through increased wages for rural populations, fostering interest among young people in pursuing agricultural professions (through educational system reforms), and consequently increasing

the workforce and elevating the significance of rural production. These efforts aim to raise the share of the agricultural sector within the overall GDP.

## IT sphere.

Currently, information technology stands out as one of the most promising industries worldwide. As indicated in Table 5, the IT sector holds the highest relative importance in terms of the total GDP and national income of the state. It is characterized by lucrative compensation levels, fosters innovation, and generates employment opportunities. But in the conditions of the state of emergency, previous crisis phenomena in the country, reduction in demand for services and outsourcing of companies to European countries (high level of taxation of T companies and FOPs), there is an outflow of highly qualified personnel from abroad. The low level of education in the training of specialists is considered an equally important reason for the reduction of GDP in the IT sector. Hence, as part of education system reform, it is crucial for the state to focus on enhancing the quality of vocational training for specialists in the field of information technology. On the part of interested business entities, pay attention to the constant improvement of workplace qualifications, etc. Because if Ukraine focuses only on the agro-raw material economic development model, it will lead to the complete "organization" of the state. And Ukraine must develop in the direction of technological and digital transformation.

#### Trade.

The trade sector in the structure of Ukraine's GDP is approximately 13 - 15%. The predominant share of export goods is ferrous metals, about 20%; Ore - 11%, Other goods almost 30%; grain (corn, oil, wheat), oil, electric machines, etc. The state of war in Ukraine naturally changed the structure of exports of ferrous metals due to the destruction of industrial capacity in Mariupol. Therefore, the question of reproducing the export of ferrous metals is open until the war's end. In this case, targeted attention must be paid to the development and strengthening of the industrial sector and the agricultural sector. The aforementioned points outline the directions for the development of the agricultural sector. In summary, the conducted research underscores the importance of implementing a post-war recovery plan to sustain the economy. This plan should incorporate approaches, methods, and experiences from EU countries that promote efficient economic and labor market functioning, leading to social and economic benefits.

## Discussion

A feature of the article is the use of the correlation-regression analysis method, which allows for considering the leading indicators of the impact on GDP, identifying the essential components of this structure and determining their effect on the performance indicator. Suppose correlation-regression analysis is quite a widespread technique in this kind of article [23–26]. The novelty of the study is the selection of the GDP indicator for the calculation of the model, due to the fact that it covers the final results of the production activity of economically active units of the labor market (labor force), which are reflected in the cost of manufactured goods and services provided, for final use. GDP as a summary indicator was used not long ago, but studies [27] show that the labor market choice is very justified. GDP is the main indicator that makes it possible to eliminate most of the shortcomings of existing studies, namely the limited scope of the analysis [28,29] and the lack of a comprehensive assessment of the labor market experience of European countries [27,30]. By utilizing GDP as a comprehensive measure of production activity across economically active entities, the article offers a more comprehensive and precise depiction of the labor market experiences of European countries.

## **Impact**

## Economic Impact.

The study provides a comprehensive analysis of the labor market experiences in European countries, thoroughly examining the impact of different factors on sustainable economic recovery. Using correlation-regression analysis and time-series analysis with Eviews 4.0 software package, the authors could identify the most essential components of the labor market's structure and determine their impact on the performance indicator (GDP). The article's findings can be valuable in developing sustainable policies and strategies for economic recovery, which can ultimately positively impact the European region.

# Regional Impact.

The article focuses specifically on European countries' labor market experience, making it particularly relevant to the region. By comparing individual European countries' positive and negative market features and providing comparative characteristics of labor market stakeholders, the article offers insights into the regional impact of the labor market on economic recovery.

## Social Impact.

The article's evaluation of the impact of unemployment rates, in-demand professions, and social packages on sustainable economic recovery has social implications. The article suggests that policies and strategies that prioritize employment opportunities and support social packages can lead to sustainable economic recovery, ultimately benefiting individuals and society.

## **Conclusions**

Ukraine and the European world live in an era of crisis phenomena, unforeseen events, changes and modernizations. The labor market does not become an exception in terms of globalization processes. As Ukraine is still in the early stages of forming a market economy, it requires effective mechanisms for state regulation of the labor market to address pressing issues amidst an unstable socio-economic and political environment. Currently, Ukraine is undergoing decentralization of the state administration system, making the experience of European countries and the functioning of their labor markets highly relevant for domestic practices. By examining foreign labor market models and delving into European practices it becomes evident that the experiences of these countries can serve as a valuable reference in shaping policies for unemployment and employment regulation. Furthermore, studying European practices offers insights into potential prospects for labor management in Ukraine. Therefore, a systematic analysis of various aspects of the labor market will allow identifying significant indicators and relevant directions for restructuring economic processes and phenomena using correlation-regression analysis. The study of the practical experience of European countries will allow us to identify the positive and negative aspects of foreign experience, consider peculiarities and choose a scenario and integrate into the socio-economic environment of the state to ensure post-war economic and social development.

### Limitations of the study

Some limitations of the study should be noted:

- the study focuses specifically on European countries' labor market experience and may not be directly applicable to other regions or countries outside of Europe. The findings should be interpreted within the context of the European labor market.
- the study's analysis is based on a specific timeframe, and the labor market experiences, and recovery strategies may vary over time. The findings may not capture the long-term dynamics or future trends in the labor market, potentially limiting the relevance of the conclusions for future policy-making.

## **Conflict of interest**

There are no conflicts to declare.

# Acknowledgments

This research has not been supported by any external funding.

# References

- [1] G.A. Smokvina, A. V. Moisei, Experience of Developed Countries on Labor Market Development: Analysis of the Current State and Prospects of Development in Ukraine, Bus. Inf. 11 (2021) 248–254. https://doi.org/10.32983/2222-4459-2021-11-248-254.
- [2] L.H. Fedunchyk, The labor market in Ukraine: problems and ways to solve them: Labor economics and employment problems, (2016) 31.
- [3] D. Lewicka, The impact of HRM on creating proinnovative work environment, Int. J. Innov. Learn. 7 (2010) 430–449. https://doi.org/10.1504/IJIL.2010.032932.
- [4] Y. Malynovska, I. Bashynska, D. Cichoń, Y. Malynovskyy, D. Sala, Enhancing the Activity of Employees of the Communication Department of an Energy Sector Company, Energies. 15 (2022) 4701. https://doi.org/10.3390/en15134701.
- [5] KNEU, Convergence and divergence in Europe: Polish and Ukrainian cases Monograph, (2013) 688.
- [6] M. Dudek, I. Bashynska, S. Filyppova, S. Yermak, D. Cichoń, Methodology for assessment of inclusive social responsibility of the energy industry enterprises, J. Clean. Prod. 394 (2023) 136317. https://doi.org/10.1016/j.jclepro.2023.136317.
- [7] State Employment Service of Ukraine, https://www.dcz.gov.ua/analytics/69. https://www.dcz.gov.ua/analytics/69.
- [8] State Statistics Service of Ukraine, http://www.ukrstat.gov.ua/, (2022).
- [9] R.E. Chaddock, Principles and methods of statistics, 1st Editio, Houghton Miffin Company, The Riverside

- Press, Cambridge, Boston, MA, USA, 1925.
- [10] I. Bezzub, Foreign experience of labor market regulation and possibilities of its use in Ukraine: monograph, (2017).
- [11] N.V. Bakhchevanova, Ukraine on the global labor market: monograph.
- [12] Central Statistical Office of Poland, Obszary tematyczne Rynek pracy. https://stat.gov.pl/obszary-tematyczne/rynek-pracy/.
- [13] National Institute of Statistics of Spain, Total Nacional. Tasa de paro de la población. Ambos sexos. 16 y más años. https://www.ine.es/consul/serie.do?d=true&s=EPA815.
- [14] D. Lewicka, Employee institutional trust as an antecedent of diverse dimensions of organisational commitment, Argumenta Oeconomica. 2020 (2020) 321–340. https://doi.org/10.15611/aoe.2020.1.13.
- [15] A. Nowaczek, E. Dziobek, J. Kulczycka, Benefits and Limitations of Indicators for Monitoring the Transformation towards a Circular Economy in Poland, Resources. 12 (2023) 24. https://doi.org/10.3390/resources12020024.
- [16] L. Burroni, A. Gherardini, G. Scalise, Policy Failure in the Triangle of Growth: Labour Market, Human Capital, and Innovation in Spain and Italy, South Eur. Soc. Polit. 24 (2019) 29–52. https://doi.org/10.1080/13608746.2019.1575571.
- [17] J. Kulczycka, L. Lelek, Tools for promoting environmental sustainability in Poland, in: Pathways to Environ. Sustain. Methodol. Exp., Springer International Publishing, Cham, 2014: pp. 193–203. https://doi.org/10.1007/978-3-319-03826-1 19.
- [18] Federal Statistical Office of Germany, Arbeitslosenquote Deutschland. https://www.destatis.de/DE/Themen/Wirtschaft/Konjunkturindikatoren/Arbeitsmarkt/arb210a.html.
- [19] Social security system in Germany. https://migrant.biz.ua/nimechina/zhittya-de/sotsialne-zabezpechennia.html.
- [20] Swiss Federal Statistical Office, Erwerbslose gemäss ILO. http://surl.li/dtobu.
- [21] D. Zakovorotnyj, Small business in Europe: what simplified taxation system are offered by EU countries, (2022).
- T. Semigina, Frustrations or moving forward? Ukrainian social work within the 'hybrid war' context, Eur. J. Soc. Work. 22 (2019) 446–457. https://doi.org/10.1080/13691457.2017.1366432.
- [23] S. V. Belousova, Forecasting financial indicators of the company's activity using correlation-regression analysis, Bull. Odesa Natl. Univ. Ser. Econ. 21 (2016) 62–66.
- [24] P. Bite, M. Konczos Szombathelyi, L. Vasa, The concept of labour migration from the perspective of Central and Eastern Europe, Econ. Sociol. 13 (2020) 197–216. https://doi.org/10.14254/2071-789X.2020/13-1/13.
- [25] M. Garai-fodor, J. Varga, Á. Csiszárik-kocsir, Correlation between generation z in hungary and the motivating factors to do volunteer work in a value-based approach, Sustain. 13 (2021) 11519. https://doi.org/10.3390/su132011519.
- [26] A. Tibajev, The Economic Return to Labour Market Experience of Immigrants in Sweden, Soc. Indic. Res. (2023). https://doi.org/10.1007/s11205-023-03089-7.
- [27] A. Zhurauliou, J. Palomino, O. Gulevych, L. Vasa, Comparative analysis of labour markets in Ukraine, Armenia, Moldova, and Estonia: Institutional approach, 1995-2020, Reg. Stat. 13 (2023) 149–166. https://doi.org/10.15196/rs130107.
- [28] S. Mazhar, Tapping the latent resource (women) as a potential contributor towards increasing GDP, Mind Soc. 11 (2023) 27–31. https://doi.org/10.56011/mind-mri-114-20223.
- [29] Y. Arbel, Y. Arbel, A. Kerner, M. Kerner, What is the optimal country for minimum COVID-19 morbidity and mortality rates?, Environ. Sci. Pollut. Res. 30 (2023) 59212–59232. https://doi.org/10.1007/s11356-023-26632-y.
- [30] Ontario's panel on economic growth and prosperity, Strength in numbers: Targeting labour force participation to improve prosperity in Ontario, Ontario's Panel on Economic Growth and Prosperity, 2017.
  - https://www.competeprosper.ca/uploads/Annual\_Report\_16\_Strength\_in\_numbers\_targeting\_labour force participation in Ontario Dec 2017.pdf.