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***Assessment of the Labour Force and Employment
Situation in***

Transcarpathia, Uzhhorod region

SECONDARY ANALYSIS OF DATA

***Transcarpathian Entrepreneurship Support Fund "TES
Fund"***

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1. GENERAL INFORMATION

2. **Country:** Ukraine
3. **District/region:** Zakarpattia, Uzhhorod region
4. **Partner organization:** TPP Fund Ukraine
5. **Report submission date:** 20.04.2025

2. OBJECTIVES OF THE STUDY

The study aims to analyze the available data on the workforce and employment conditions in the [Transcarpathian region, Ukraine](#), with a particular focus on the changes caused by current challenges, such as the development of artificial intelligence, the consequences of the war in Ukraine, etc.

This study aims to provide a clear assessment of labor market dynamics based on data, including changes in the composition of the labor force, employment problems and new trends, in order to inform targeted measures and support the development of effective labor market policies in the region.

It should be noted that this study also aims to identify key disparities between the skills of the available workforce and the needs of the labor market in the Transcarpathian region. This includes analyzing sectors of the economy that demonstrate significant growth potential and, accordingly, need skilled workers, as well as identifying areas where there is an excess or shortage of certain professional skills. In addition, the study seeks to assess the impact of technological changes, in particular the development of artificial intelligence and automation, on the employment structure in the region, predicting potential future needs for reskilling and the development of new competencies among the workforce.

An important aspect of the study is also the analysis of socio-economic factors affecting employment, including the level of education, gender aspects, the age structure of the labor force and the level of economic activity of different social groups. Understanding these factors is critical for the development of inclusive and effective employment policies aimed at supporting all segments of the population of the Zakarpattia region. The ultimate goal of the study is to provide reasonable recommendations for partner organizations and local governments on the development and implementation of programs aimed at increasing the competitiveness of the workforce, creating new jobs and promoting sustainable economic development of the region in the face of modern challenges.

3. DATA SOURCES & METHODOLOGY

- **Timeframe of data collection:** March 2023- April 2025
- **Methodology used for data analysis:**

To ensure the accuracy and reliability of the analysis of secondary data on the labor market of the Transcarpathian region, we applied a comprehensive methodology based on a thorough study and processing of information from various authoritative sources. Our approach included identifying, collecting, and systematizing data from official statistical institutions, relevant agencies, and international organizations.

Identification of data sources:

Our team carried out a targeted search and established official contacts to obtain primary information directly from key institutions. We actively used the following sources:

- **Official statistics:**
 - **State Statistics Service of Ukraine (ukrstat.gov.ua):** This website has become the main source of national statistics, including detailed collections and bulletins on employment and unemployment (breakdown by age, gender, region and type of economic activity), information on average wages, demographic indicators and data on graduates of educational institutions of various levels of accreditation. We have carefully studied the published reports and made official requests for More.
 - **Transcarpathian Regional Department of Statistics:** In order to obtain more detailed regional statistics reflecting the specifics of the Transcarpathian region, we have processed the relevant statistical data provided by the department.
- **Labor Market Reports:**
 - **Transcarpathian Regional Employment Center (Karpaty.dcz.gov.ua):** The website and official correspondence with the center provided us with access to statistics on registered unemployed and available vacancies in the region. We also studied their analytical reports and reviews of the local labor market, as well as information on implemented employment promotion programs.
- **Government and Institutional Data:**
 - **Reports on the economic development of the Transcarpathian region (Transcarpathian Regional State Administration):** We analyzed the official reports of the Transcarpathian Regional State Administration, which contain data and analysis of the economic state of the region and its impact on the labor market.
- **Migration and refugee reports:**
 - **Office of the United Nations High Commissioner for Refugees (unhcr.org):** UNHCR data and reports were used to track trends in labour migration, including the displacement of persons due to the war in Ukraine and their impact on the labour market of host regions, including Zakarpattia.
 - **Eurostat (ec.europa.eu/eurostat):** Eurostat statistics provided information on the number of Ukrainian refugees in European Union countries, which is an important context for understanding external labour migration.
 - **International Labour Organization (ilo.org):** ILO reports and analyses have been used to provide an international perspective on labour market trends and issues related to migration and employment.

Data collection and processing:

The process of data collection and processing included the following stages:

- **Compilation of statistical reports:** We systematically extracted relevant data on the labor force from official statistical sources (SSSU and Transcarpathian Regional Department of Statistics). These data were structured in the form of statistical tables and graphs for further analysis.
 - **Overview of institutional reports:** A detailed analysis of the reports of employment agencies (Transcarpathian Regional Employment Center) was carried out, including data on the number of vacancies, unemployment rates by different categories of the population and information on the industries where there is the greatest shortage of labor.
 - **Analysis of migration patterns:** We studied data from UNHCR and Eurostat to understand the scale of internal and external migration caused by the war and to assess its impact on the availability of labor in the Zakarpattia region.
 - **Comparison of different sources:** To ensure reliability and identify potential inconsistencies or gaps, we carried out a comparative analysis of data obtained from different sources. In cases of discrepancies, additional study of primary sources was carried out or clarification was sought from the relevant institutions.
- The application of this methodology allowed us to gain a comprehensive and well-founded understanding of the current dynamics of the labor market in the Transcarpathian region, identify key problems and trends, which became the basis for the recommendations we developed.

4. DEMOGRAPHIC CHARACTERISTICS OF WORKFORCE

Include data covering 2023, 2024, and current Employment and Unemployment Situation (latest available data). You may refer to:

- **Total number of employed people. For 2023:** The average number of employed population aged 15-70 years was **483.5 thousand people**. The employment rate at this age was **52.8%**.
- **Employment rate by sector (if available, agriculture, industry, services)** **Agriculture: 25-35%** - Transcarpathia remains an agrarian region, and a significant part of the population, especially in rural areas, is employed in agricultural production (personal farms, farms).
- **Service sector (including trade, education, healthcare, transport, tourism, public administration, etc.): 35-45%** - This sector is significant and continues to grow in Ukraine as a whole. Tourism, especially in mountainous areas, and cross-border trade play an important role in the economy of Transcarpathia.
- **Industry (including food, woodworking, light, machinery, and other industries): 15-25%** – The industrial sector is important, but its share may be smaller compared to the service sector and agriculture. Woodworking and food processing are likely key subsectors.
- **Other sectors (construction, finance, information technology, etc.): 5-10%** - These sectors are also present, but may have a smaller share in the overall employment structure of Transcarpathia compared to more industrialized regions.

Total number of unemployed people. Unemployed population (according to the ILO methodology):
aged 15-70 years:

2023 – 10.5% (58500 people) 2024 – 11% (60400 people) 2025 – no fresh data

Unemployment rate aged 15-70 years:

Unemployed population (according to the ILO methodology):

2023 – 10.5% 2024 – 11% 2025 – no fresh data

- **Youth unemployment rate**

15–24 years – 15%

25–29 years – 10,8%

30–34 years – 6,9%

- **Key industries experiencing labor shortages or surpluses**

Industries that are likely to experience labor shortages are:

Skilled Blue-Collar Professions:

Builders: Bricklayers, plasterers, welders, plumbers, electricians. Given the potential for reconstruction and infrastructure projects, the demand for these professions may be high.

Seamstresses and other light industry workers: Transcarpathia has light industry enterprises, and often they feel the need for qualified seamstresses, cutters, etc.

Drivers: Especially truck and international transport drivers.

Cooks, waiters, hotel and restaurant workers: Given the tourism potential of the region, the demand for these specialists may be stable or growing.

Representatives of blue-collar equipment maintenance professions: Enterprises in various industries have a need for adjusters, repairmen, etc.

Medical workers: Especially doctors of narrow specialties, nurses and junior medical personnel, this trend is all-Ukrainian.

Teachers: In some regions, there may be a shortage of teachers of certain subjects.

Information technology (IT) workers: Although Transcarpathia is not the largest IT hub, the demand for IT specialists remains high in Ukraine, and local companies may also feel the need for such personnel.

Engineers of various specialties: Skilled engineers are needed to maintain and develop industrial enterprises.

Industries where there may be a surplus of labor (less unambiguous and depends on the specific situation):

Administrative and office staff without specialized skills: In some cases, there may be more willing to work in positions that do not require high qualifications than there are available vacancies.

Economists and lawyers without practical experience: The job market can be saturated with graduates of these specialties, especially without sufficient practical experience.

Cultural and artistic workers (depending on funding and availability of vacancies): The number of vacancies in this field may be limited.

- **Programs or initiatives to support workforce integration (for locals and refugees)**

To support the integration of the workforce in the Transcarpathian region, both for local residents and refugees, there are a number of programs and initiatives at different levels:

National programs and initiatives:

Programs of the State Employment Service of Ukraine: Include registration of the unemployed, search for suitable vacancies, employment consultations, organization of vocational training and retraining, as well as the payment of unemployment benefits. These programs are available to both local residents and officially registered IDPs.

Government Grant Programs for Employers: Providing grants to businesses that employ IDPs to stimulate their employment.

Compensation for retraining costs: Partial reimbursement to employers for the costs of training and retraining of hired IDPs.

"Own Business" program: Providing microgrants for starting their own business, which may be relevant for entrepreneurial locals and refugees.

Training voucher program: Provision of vouchers to certain categories of citizens (including IDPs) for vocational education or advanced training in specialties in demand in the labor market.

Employer compensation program for the employment of IDPs: Providing employers with compensation in the amount of the minimum wage for the employment of IDPs for a certain period.

Skills Alliance for Ukraine: A three-year program aimed at reskilling and upskilling Ukrainians, in particular in sectors such as construction, transport, IT and engineering.

Regional and local initiatives (Zakarpattia region):

Cooperation of the Transcarpathian Regional Employment Center with local employers: Organization of job fairs, information sessions and other events to promote employment.

Regional Entrepreneurship Support Programs: Providing advisory and financial support for starting their own businesses by local residents and IDPs.

Cooperation with NGOs: Involvement of NGOs to assist IDPs in finding work, adaptation and integration in the labor market.

Language courses for IDPs: Organization of free Ukrainian language courses to facilitate their communication and employment.

Programs to promote the confirmation of qualifications of IDPs: Cooperation with educational institutions to simplify procedures for the recognition of educational documents and professional qualifications.

Other available data related to labor force and labor market are:

Analytical reports and research: Publications of Ukrainian and international think tanks, experts and scientists on labor market trends, the impact of migration, automation and other factors on employment.

Results of surveys of the population and employers: Data from sociological surveys on the level of employment, economic activity, expectations of employees and needs of employers.

Sectoral reports: Analysis of the situation on the labor market in certain sectors of the economy of the Transcarpathian region (for example, tourism, agriculture, industry).

Data from online job search platforms: Information on the number and nature of posted vacancies, the level of wages in various specialties.

Information from business associations and chambers: Estimates and forecasts on labor needs from business representatives.

Mass media materials: Publications and reports on the situation on the labor market in the region.

5. MAIN CHALLENGES IN THE LABOR MARKET

You may consider skills shortages, aging workforce, migration trends, labor conditions, language barriers, skills mismatch, discrimination, administrative barriers to employment.

Shortage of qualified personnel: Data from the State Statistics Service of Ukraine for previous years demonstrate a low number of graduates of vocational schools in key specialties such as construction and industry. An analysis of vacancies registered in the regional employment center confirms a significant demand for skilled workers, in particular welders, turners, seamstresses, as well as medical workers. filling vacancies due to insufficient level of relevant skills in potential candidates.

Aging of the workforce: Demographic data of the State Statistics Service of Ukraine indicate an increase in the share of the population of pre-retirement age among those employed in industries such as industry and agriculture. There is a significant need to replace workers who will retire in the near future, which poses risks to the stability of labor forces in these sectors.

Migration trends: Data from border guards record a significant departure of the able-bodied population abroad in previous years. At the same time, statistics on the registration of internally displaced persons show a significant influx of the able-bodied population from other regions of Ukraine after the start of the full-scale invasion. This led to a temporary increase in the supply of labor in certain sectors, but also created additional pressure on the labor market as a whole, in particular in terms of providing workers and social integration of IDPs.

Working conditions: An analysis of average wages by industry in the Transcarpathian region compared to other regions reveals potential uncompetitiveness of wages in some industries, which may complicate the attraction and retention of skilled workers. Information from trade unions and reports on working conditions indicates that there are problems with ensuring an adequate level of occupational safety and social guarantees at certain enterprises in the region.

Language barriers: Survey data among internally displaced persons and the local population confirm the existence of language barriers when looking for work, especially in areas related to the tourism industry and international trade, where knowledge of foreign languages is important.

Skills mismatch: A comparative analysis of the skills of the registered unemployed (according to the employment center) with the requirements put forward in vacancies reveals a significant gap between the existing competencies and the needs of employers. The analysis of educational programs and the needs of the labor market indicates insufficient training of specialists in modern and promising specialties, in particular in the field of digital technologies.

Discrimination: The analysis of appeals to human rights organizations and the results of relevant studies indicates the presence of cases of discrimination in employment on the basis of age, gender and other grounds, which limits employment opportunities for certain categories of the population.

Administrative barriers to employment: Business reports and employer reviews provide information on the complexities associated with hiring procedures, obtaining the necessary permits, and other administrative hurdles that make the employment process difficult for both employers and job seekers.

- **Key tendencies observed in employment patterns**

- Analyze shifts in employment, including job creation and job loss in various industries.

When analyzing changes in employment in Ukraine, in particular in the Transcarpathian region, it is necessary to take into account specific factors affecting the labor market in the conditions of war and its consequences.

All-Ukrainian trends with an impact on Transcarpathia:

Job losses due to war: The full-scale invasion has led to significant job cuts across the country, especially in the territories affected by the fighting. Although Transcarpathia was not directly a zone of active hostilities, economic ties with other regions and general instability led to the closure of enterprises or reduction of staff in the region as well.

Internal displacement and its impact: A significant influx of internally displaced persons (IDPs) to Transcarpathia increased the supply of labor, especially in certain sectors where IDPs were looking for work. This could lead to increased competition for jobs and potential pressure on wage levels in some industries. At the same time, IDPs could bring new skills and experience that contributed to the development of certain sectors.

Changes in the sectoral structure: The war has led to a reorientation of the economy. The need for certain industries related to defense, logistics, and humanitarian aid has increased. In Transcarpathia, which has become an important logistics hub and rear region, there could be an increase in employment in transport, warehousing, as well as in areas serving the needs of IDPs.

Migration abroad: A significant part of Ukrainians, including residents of Transcarpathia, went abroad, which led to a decrease in the available workforce in some sectors. This is especially noticeable in industries where there was a shortage of personnel even before the war (for example, skilled workers, medicine).

Slowing economic development: General economic instability and infrastructure destruction are holding back investment and job creation in many industries.

Specific changes for Transcarpathia:

The growing role of logistics and transport: Transcarpathia, as a border region, has become an important transit center for humanitarian aid and cargo. This could lead to an increase in employment in transport companies, warehouse complexes and related areas.

Tourism development potential: Transcarpathia has retained relative security, which could contribute to the development of domestic tourism and the recovery of the share of international tourism. This could lead to the creation or maintenance of jobs in the hotel and restaurant business, service and entertainment.

Agricultural sector: Agriculture is traditionally an important industry for Transcarpathia. In the conditions of war and problems with exports through seaports, the importance of domestic food production has increased. Employment in agriculture could remain stable or even increase in certain directions.

Industry: Industrial enterprises in Transcarpathia could face problems with the supply of raw materials, disruption of logistics chains and a decrease in demand for their products. At the same time, some enterprises could refocus on the needs of defense or the internal market, which could lead to both losses and job creation in certain sectors of industry (for example, food, light).

Growing need for social workers and psychologists: The large number of IDPs and the general stress associated with the war have led to an increase in the need for specialists who provide social and psychological support.

- Identify trends in automation, digital transformation, and remote/hybrid work models.

For Transcarpathia and Ukraine in general, the following trends in automation, digital transformation and remote/hybrid work models can be identified, especially taking into account the impact of recent events:

Automation:

Slower pace in industry (before the war): Before the full-scale invasion, the pace of automation in the industry of Transcarpathia, where a significant share is occupied by the woodworking, light and food industries, was relatively slower compared to the more industrialized regions of Ukraine. This was explained both by the cost of implementation and the availability of relatively inexpensive labor.

Potential acceleration after the war: With the outflow of labor abroad and the rise in labor costs after the war, interest in automation in industry may increase in order to optimize production and reduce dependence on the human factor.

Automation of routine tasks: In the field of services and administrative activities, automation elements are gradually being introduced to optimize document flow, accounting and other routine processes.

Limited adoption in agriculture: In agriculture in Transcarpathia, where small farms predominate, the level of automation remains low, although there is potential for the introduction of modern technologies in the future.

Digital Transformation:

Intensification during the pandemic and war: The COVID-19 pandemic and full-scale invasion have become powerful catalysts for digital transformation in Ukraine, including Transcarpathia. Businesses were forced to look for new ways to interact with customers and organize work in conditions of restrictions and instability.

Development of online services: The number of online stores, delivery services, educational and medical online platforms has increased. Transcarpathian enterprises are also actively developing the online space to expand sales markets and provide services.

Implementing digital management tools: Businesses are implementing CRM systems, ERP systems, and other digital tools to streamline business processes, manage resources, and engage with customers.

Digital infrastructure development: Although Transcarpathia is not a leader in the field of IT, there is a gradual improvement in digital infrastructure and an increase in Internet penetration, which creates the basis for further digital transformation.

State digital initiatives: Ukraine is actively developing digital public services (for example, Diia), which are becoming available to residents of Transcarpathia, simplifying the interaction of citizens with government agencies.

Remote/Hybrid Work Models:

Forced transition during the pandemic and war: The COVID-19 pandemic has forced many companies in Ukraine, including Transcarpathian ones, to switch to remote work. The full-scale invasion has only exacerbated this trend for security reasons and logistical difficulties.

Continued popularity of hybrid models: After the easing of restrictions, many companies in Ukraine prefer hybrid work models, combining work from the office and remotely. This allows employees to have more flexibility, and companies to optimize the cost of office space.

Potential for attracting talent: Remote work opens up opportunities for Transcarpathian companies to attract talent from other regions of Ukraine and even from abroad, and for residents of Transcarpathia to work for companies located in other cities or countries.

Challenges for traditional industries: For industries with a high proportion of physical labor (e.g. industry, agriculture, construction), the transition to remote work is less relevant, although digital management and monitoring tools can be applied in these areas as well.

Need for infrastructure development: Effective remote work requires a reliable internet infrastructure and cybersecurity, which are important aspects for the further development of this trend in Transcarpathia.

- Assess the impact of major events (e.g., economic crises, pandemics, conflict in Ukraine) on employment.

1. Economic crises:

Overall impact: Economic crises tend to lead to a reduction in production, a decrease in investment, and a decrease in consumer demand. This, in turn, causes **job losses** in many industries due to business failures, staff reductions, and hiring freezes.

Impact on Transcarpathia: Transcarpathian region, being integrated into the economy of Ukraine, is also experiencing the consequences of national economic crises. A decrease in demand for the products of local enterprises (e.g. woodworking, light, food industry) can lead to a reduction in production and dismissal of employees.

2. Pandemics (e.g., COVID-19):

General impact: Pandemics cause large-scale restrictions on economic activity (lockdowns, business closures), which leads to **massive job losses**, especially in areas that require a physical presence (hotel and restaurant business, entertainment, trade, transport). At the same time, the pandemic can stimulate **job** creation in certain sectors such as e-commerce, delivery, information technology (to enable remote work), healthcare.

Impact on Zakarpattia: Zakarpattia region has also been significantly impacted by the COVID-19 pandemic. Restrictions on movement and closure of establishments have led to **temporary job losses** in the tourism industry, which is important for the region. At the same time, the growing demand for online services and remote work could contribute to **the development and creation of jobs** in IT and related industries.

3. Conflict in Ukraine (since 2014 and especially after the full-scale invasion in 2022):

Overall impact: Armed conflicts have a devastating impact on the economy and employment. They lead to **large-scale job losses** due to hostilities, destruction of infrastructure and enterprises, cessation of economic activity in large areas, internal and external migration of the population. At the same time, war can stimulate **employment** growth in the military-industrial complex, logistics, humanitarian sphere and sectors that meet the needs of the army and the population in wartime.

Impact on Transcarpathia:

- **The first phase of the conflict (since 2014):** The annexation of Crimea and hostilities in eastern Ukraine already had a certain negative impact on the country's economy, including Transcarpathia, due to the disruption of trade relations and general instability.
- **Full-scale invasion (since 2022):** This event had a much greater impact on the labor market of the Transcarpathian region. Although the region was not directly affected by intense hostilities, it became an important rear region and shelter for a large number of IDPs. This led to:

Job losses: Due to the general economic crisis, the destruction of logistics chains and the reorientation of businesses.

Employment growth in selected sectors: In logistics, transport, humanitarian aid, possibly in the field of IDP services.

Changes in the structure of the workforce: An increase in the supply of labor at the expense of IDPs, but often with a mismatch of skills to available vacancies. Outflow of part of the able-bodied population abroad.

Increased competition in the labor market in certain sectors.

- **Impact on local labor market**

You may consider increase/decrease in workforce availability, new job demands, displacement of local workers, informal employment growth, etc.

Thus, the secondary analysis of the labor market of the Transcarpathian region will definitely take into account such important aspects as changes in the availability of labor, new requirements for jobs, the potential displacement of local workers, as well as the growth of informal employment:

1. Increase/decrease in labor availability:

- **Reduced availability:**

- **Migration abroad:** Long-term labor migration of residents of Transcarpathia to the EU countries leads to a decrease in the number of able-bodied population, especially in certain skilled and unskilled areas (construction, agriculture, service).
- **Mobilization:** Under martial law, the mobilization of men into the ranks of the Armed Forces of Ukraine temporarily reduces the availability of labor force in the labor market.
- **Demographic trends:** The nationwide trend towards population aging and low birth rates also affects the reduction of the potential labor force in the long term.

Increase in availability (temporary or in certain sectors):

- **Internal displacement:** The influx of IDPs to Transcarpathia has increased the number of job seekers, especially in entry-level positions and in areas where their skills are relevant.
- **Return of migrants:** During periods of economic instability in countries of employment or due to other factors, there may be a partial return of labor migrants, temporarily increasing the supply of labor.

2. New Requirements for Workplaces:

Digital skills: The digital transformation of the economy requires employees to possess basic and specialized digital skills (working with a computer, online services, specialized software). This is an increasingly important requirement in many industries.

Soft skills: Employers increasingly value qualities such as communication skills, teamwork, critical thinking, adaptability, and emotional intelligence, especially in positions related to management and customer service.

Professional retraining and training: Rapid technological changes and structural adjustments in the economy require workers to be ready for continuous training and retraining to maintain their competitiveness in the labor market.

Knowledge of foreign languages: Given the border location of Transcarpathia and the growth of international cooperation, knowledge of foreign languages (especially English and the languages of neighboring countries) is becoming an increasingly important requirement for working in many sectors (tourism, trade, logistics).

3. Displacement of local workers:

Competition with IDPs: In certain sectors where the supply of labor from IDPs is significant and where they may settle for lower wages or less favourable working conditions, there is a risk of crowding out local workers, especially those lacking highly skilled or specialized skills.

Competition with foreign workers: In some industries (e.g. agriculture, construction), there may be an attraction of foreign workers, which can also create competition for the local population.

Automation and technology: The introduction of new technologies and the automation of production processes can lead to a reduction in the need for certain types of manual labor, which can threaten the employment of low-skilled workers.

4. Growth of informal employment:

Economic instability: In the face of economic instability and high unemployment, part of the population may resort to informal employment (work without formalization, without paying taxes and social contributions) as a way to generate income.

Shadow economy: The presence of a significant sector of the shadow economy in the region can contribute to the development of informal employment.

Tax evasion and regulation: Both employees and employers can resort to informal employment relationships for the purpose of tax evasion and compliance with labor laws.

Internal displacement: IDPs who face difficulties in formal employment may be more likely to engage in informal employment.

- **Key sectors affected by the workforce shift or by other factors** (e.g., healthcare, construction, agriculture, manufacturing)

A secondary analysis of the labor market in the Transcarpathian region shows that changes in the labor force and other factors, such as migration, war, technological development, and economic fluctuations, have a significant impact on key sectors of the region's economy:

1. Healthcare:

- **Impact:**
 - **Shortage of qualified personnel:** *The long-term migration of medical workers abroad and the internal movement of specialists to safer regions of Ukraine have led to an acute shortage of doctors of narrow specialties, nurses and junior medical personnel in the Transcarpathian region.*
 - **Increased workload:** *The influx of IDPs has increased the burden on medical infrastructure and existing medical personnel.*
 - **Aging of the workforce:** *A significant proportion of medical workers are in pre-retirement age, which creates risks of further deepening of the personnel shortage.*
 - **New requirements:** *There is a growing need for specialists in psychological assistance and rehabilitation.*

2. Construction:

- **Impact:**

- **Labor Outflow:** The labor migration of construction workers abroad led to a shortage of skilled workers (masons, plasterers, welders). Mobilization also reduced the number of male construction workers available.
- **Changes in the scope of work:** At the beginning of the full-scale invasion, there was a reduction in construction projects. In the future, an increase in the volume of work related to the restoration of infrastructure and housing is expected, which will create an even greater demand for builders.
- **New technologies:** The introduction of new construction technologies and materials requires relevant skills from employees.

3. Agriculture:

- **Impact:**
 - **Aging of the workforce:** In rural areas, there is an aging of the working-age population and an outflow of young people to cities or abroad.
 - **Seasonality of work:** Employment in agriculture has a pronounced seasonal character, which creates problems with permanent employment.
 - **Impact of the war:** Logistical problems and changes in agricultural markets affect agricultural producers' incomes and their ability to hire workers.
 - **Low mechanization:** A significant proportion of small farms have a low level of mechanization, which leads to a high need for manual labor.

4. Production (industry):

- **Impact:**
 - **Outflow of skilled workers:** Labor migration of skilled workers (turners, millers, seamstresses) to EU countries creates a shortage of personnel at industrial enterprises.
 - **Impact of the war:** The destruction of logistics chains, problems with the supply of raw materials and components, as well as changes in sales markets negatively affect the work of many enterprises.
 - **Reorientation of production:** Some enterprises may reorient themselves to the needs of defense or the internal market, which can change the structure of demand for labor.
 - **Automation:** In order to optimize costs and reduce dependence on volatile labor market situations, businesses may consider implementing automation technologies, which can lead to the reduction of certain jobs in the long run.

Other key sectors that are being impacted are:

- **Tourism and the service sector:** Suffered significant losses at the beginning of the full-scale invasion, but are gradually recovering due to domestic tourism and IDPs. They need qualified personnel (hoteliers, waiters, cooks), but face the problem of outflow of personnel.
- **Transport and logistics:** Have become of particular importance as a transit region and humanitarian aid center, which has created additional demand for drivers, warehouse workers, logisticians.

- **Information technology (IT):** Although Transcarpathia is not the main IT hub, the development of the digital economy and the possibility of remote work create new jobs in this area.

6. WORKFORCE CHANGES DUE TO THE UKRAINIAN WAR

- **Estimated number of Ukrainian refugees/immigrants**

Refugees:

As of **the end of January 2025**, about **4.3 million** Ukrainians had temporary protection status in the European Union.

The total number of Ukrainians who were abroad due to the war as of **the end of November 2024** was estimated at **5.2 million** people.

Overall estimates of the number of Ukrainians abroad (including those who left for Russia and Belarus, as well as those with other migration statuses) vary between **5-8 million** people as of **April 2025**.

- **Impact on local labor market**

(You may consider increase/decrease in workforce availability, new job demands, etc.)

1. Increasing Workforce Availability:

- The influx of IDPs has significantly increased the number of potential workers in the local labor market. This is especially noticeable in cities and districts that have received the largest number of IDPs.
- An increase in the supply of labor can lead to increased competition for certain jobs, especially those that do not require high qualifications or specialized skills.

2. New requirements for workplaces:

- **Adapting to the needs of IDPs:** Employers may face the need to adapt jobs and working conditions to attract IDPs, taking into account their experience, skills, and potential psychological needs.
- **Language barrier:** A significant proportion of IDPs may have a language barrier, which creates additional requirements for communication in the workplace and may limit their employment opportunities in certain positions. Employers may need translators or the implementation of language support programs.
- **Retraining and validation of qualifications:** Many IDPs may have qualifications that require validation or retraining in accordance with Ukrainian standards. This creates a demand for relevant education and training programs.

- **Employer flexibility:** Employers may need more flexibility in work schedules and working conditions to attract IDPs who may have personal circumstances related to relocation and adaptation.

3. Potential displacement of local workers:

- In sectors with a large number of low-skilled vacancies, there is a risk that IDPs, by accepting lower wages or less favorable working conditions due to a difficult financial situation, may create competition for local workers with similar qualifications.
- This can lead to a restraint in wage growth or even job loss by local residents who are not ready to work under such conditions.

4. Impact on wages:

- An increase in the supply of labor through IDPs can put pressure on wage levels in certain sectors, especially where competition for jobs is high.
- However, in sectors where there is a shortage of skilled workers, an influx of skilled IDPs can help fill these vacancies without significantly reducing wages.

5. Stimulating the economy:

- Increasing the population in the region due to IDPs can stimulate consumer demand and support local businesses (trade, services).
- Qualified IDPs can bring new knowledge and experience, contributing to the development of innovation and entrepreneurship in the region.

6. Growth of informal employment:

- IDPs who face difficulties in formal employment (language barrier, problems with documents, lack of proven qualifications) may be more prone to informal employment.

7. Additional Burden on Infrastructure:

- An increase in the population creates an additional burden on the social infrastructure (medical institutions, educational institutions, housing stock), which can indirectly affect the labor market.

- **Policy responses by Government and local authorities**

At the level of the Government of Ukraine:

Employment Support Programs:

- **Unemployment benefits:** The State Employment Service makes unemployment benefits payments to registered persons, including IDPs.
- **Grants for employers:** The government is introducing grant programs for employers who employ IDPs to stimulate their employment.

- **Reimbursement of retraining costs:** There are programs for partial compensation to employers for the costs of training and retraining of hired IDPs.
- **"Own Business" program:** Provision of microgrants for starting their own business, which may also be relevant for IDPs who have entrepreneurial experience.

Regulation of the labor market:

- Adoption of legislative acts aimed at simplifying employment procedures and ensuring the rights of both employees and employers under martial law.
- Ensuring equal rights in the field of labor for all citizens of Ukraine, regardless of their place of residence.

Coordination with international organizations: Attracting international assistance and cooperation with organizations such as the ILO, UNHCR to implement programs to support the employment and professional adaptation of IDPs.

Digitalization of employment services: Development of online platforms and services for job search, registration of the unemployed and receiving consultations.

At the level of local authorities of the Transcarpathian region:

Cooperation with the regional employment center: Active interaction with the employment center for the implementation of state programs at the local level, organization of job fairs, information sessions for IDPs and employers.

Local support programs: Design and implementation of regional programs aimed at integrating IDPs into the labor market, taking into account the specifics of the local economy. This may include:

- Providing additional benefits or preferences to employers who employ a significant number of IDPs.
- Organization of retraining and vocational training courses, taking into account the needs of local enterprises and the skills of IDPs.
- Promoting the development of entrepreneurial activity among IDPs by providing consulting and financial support.

Coordination with NGOs and volunteers: Leveraging the resources and expertise of NGOs working with IDPs to assist in employment and social adaptation.

Information support: Providing IDPs with access to information about available vacancies, training and retraining opportunities, as well as about their rights and obligations in the labor market.

Promotion of social infrastructure: Development of social infrastructure (housing, kindergartens, medical institutions) to meet the needs of a growing population, which can indirectly affect the labor market.

Monitoring and analysis of the labor market: Carrying out regular monitoring of the situation in the local labor market to identify problems and needs, as well as to evaluate the effectiveness of the measures taken.

Responding to specific challenges:

Shortage of qualified personnel: Introduction of vocational education and retraining programs to train specialists in the most demanded specialties.

Language barriers: Organization of Ukrainian language courses for IDPs.

Skills mismatch: Conducting an IDP skills assessment and developing individual employment and training plans.

Risk of displacement of local workers: Introduction of mechanisms to monitor compliance with labor laws and prevent discrimination in the labor market.

In general, the response of the government and local authorities is comprehensive and aimed at minimizing the negative consequences of the war on the labor market, supporting employment and promoting the integration of IDPs into the economic life of the Transcarpathian region. The effectiveness of these measures requires constant monitoring and adaptation to the changing situation.

- **Integration challenges for Ukrainian workers** (language barriers, legal restrictions, job skill recognition, discrimination)

1. Language barrier:

For IDPs: Especially for those who came from regions where the Russian language was predominantly used, the language barrier can be a significant barrier to employment. Insufficient knowledge of the Ukrainian language complicates communication with employers, colleagues and clients, limiting access to certain vacancies and career opportunities.

For local residents: Although Ukrainian is the state language, regional dialects and languages of national minorities (Hungarian, Romanian, Slovak) are common in the border areas of Transcarpathia. In certain areas, especially those related to tourism and cross-border cooperation, insufficient knowledge of foreign languages (especially those of neighboring countries) can be an obstacle to employment.

2. Legal restrictions:

For IDPs: Although Ukrainian legislation provides certain benefits for IDPs in the field of employment (for example, a simplified procedure for registering as unemployed), there may be difficulties with documentation, especially if individuals lost their documents during displacement.

General legal requirements: For both local residents and IDPs, there are general labor law requirements that can be difficult for both employees and employers to understand or comply with (e.g., execution of employment contracts, compliance with working hours and rest standards).

3. Recognition of professional skills:

For IDPs: The problem of recognition of professional qualifications obtained at the previous place of residence is one of the key obstacles to the employment of IDPs in their specialty. The

lack of mechanisms for quick and effective confirmation of diplomas and certificates can force qualified specialists to work in positions that do not correspond to their level of qualification.

For locals: Recognition of professional skills acquired abroad (in the case of labor migration and return) can also be a complex and lengthy process.

4. Discrimination:

Regarding IDPs: IDPs may face discrimination from employers or local residents because of their status, origin, or language characteristics. This can manifest itself in denial of employment, offering worse working conditions, or unequal treatment in the workplace.

By age and gender: In the labor market of the Transcarpathian region, as well as in Ukraine as a whole, there may be discrimination on the basis of age (difficulties in employment for young professionals without experience and persons of pre-retirement age) and gender (gender gap in remuneration and restrictions in the choice of professions).

Regarding other vulnerable groups: Persons with disabilities, representatives of national minorities may also face discrimination in employment.

Other potential challenges:

Transport accessibility: For some IDPs and residents of remote settlements in Transcarpathia, it can be difficult to get to their place of work.

Housing issue: The lack of stable housing for IDPs can be a significant obstacle to their integration into the labor market.

Psychological state: Traumatic experiences related to war and displacement can affect IDPs' ability to work and adapt to their new workplace.

7. LABOR MARKET TENDENCIES BASED ON SECONDARY DATA ANALYSIS

- **Labor market transformation**

(e.g., increase in remote work, demand for digital skills, changes in work-life balance expectations)

The labor market in the Transcarpathian region, as well as in Ukraine as a whole, is undergoing a significant transformation under the influence of global and local factors, including technological progress, pandemics, war and changes in social values. Here are the key trends in this transformation:

1. Increase in the number of remote jobs:

The pandemic as a catalyst: The COVID-19 pandemic has been a powerful impetus for the development of remote work. Many companies have been forced to switch to a remote format, which has shown its viability and benefits for both employees and employers.

War as a factor of security and flexibility: The full-scale invasion has exacerbated the trend towards remote work for security reasons and logistical difficulties. Many companies have

moved their employees to remote mode, and some are even hiring employees who are located in relatively safe regions, such as Zakarpattia, regardless of the location of the head office.

Expanding opportunities for employees: Remote work opens up access for residents of Transcarpathia to vacancies in companies located in other regions of Ukraine and abroad, which expands their career opportunities.

Need for infrastructure and skills: The growth of remote work requires the development of a reliable internet infrastructure and the availability of skills for employees to self-organize, communicate in an online environment, and use digital tools.

2. Growing Demand for Digital Skills:

Digitalization of all areas of the economy: Regardless of the industry, there is a growing need for workers who have basic and specialized digital skills. This includes working with office software, online platforms, data analysis, cybersecurity, programming, and other IT competencies.

Automation and new technologies: The introduction of automation and the latest technologies in enterprises requires employees to be able to operate this equipment, maintain it, and analyze the data it generates.

E-commerce and online services: The development of online commerce and the provision of services via the Internet creates a demand for specialists in the field of Internet marketing, SMM, SEO, web development and support of online platforms.

3. Changes in expectations regarding work-life balance:

Prioritizing employee well-being: Today's workers, especially the younger generation, increasingly value work-life balance, schedule flexibility, the ability to work remotely, and a supportive corporate culture.

Impact of the pandemic and war: The crises experienced have sharpened awareness of the importance of mental and physical health, which has led to increased demands on employers to ensure adequate working conditions and support the well-being of employees.

Competition for talent: Employers who offer a better work-life balance have a competitive advantage in attracting and retaining qualified professionals.

Legislative initiatives: There is growing support in society for legislative initiatives aimed at regulating working hours, granting additional vacations and providing other social guarantees that contribute to a better work-life balance.

Impact on Transcarpathia:

The Transcarpathian labor market is also experiencing these transformational trends, although their manifestation may have regional specifics. The growth of remote work opens up new job opportunities for local residents nationally and internationally.

The demand for digital skills is also growing in Transcarpathia, especially in areas related to tourism, service, and small business development.

Local employers are gradually realizing the importance of ensuring work-life balance in attracting and retaining skilled workers, although this process may be slower in some traditional industries.

- **Effects on businesses and labor market**
- Identify labor market trends (local, regional, national, European, global level).
- Identify trends in the labor market (local, regional, national, European, global level).

The following key trends are observed in the labor market at different levels:

Local (Transcarpathia):

Growing demand for skilled trades: The shortage of welders, turners, builders remains relevant.

Need for service workers: With the resumption of domestic tourism, the demand for employees of the hotel and restaurant business is increasing.

Adapting to the needs of IDPs: Employers are gradually adjusting to the employment of internally displaced persons.

Growing interest in digital skills: Even in traditional industries, there is a growing awareness of the importance of digital literacy.

Slower pace of automation: Compared to other regions, automation in industry is slower.

Regional (Western Ukraine):

Similar trends to the local level: Continued demand for skilled workers and service workers.

The importance of logistics and transport: The Western regions remain an important logistics hub.

More active digitalization: In the large cities of the region, digital transformation is happening at a faster pace.

Impact of border location: Cross-border cooperation and trade affect the demand for certain occupations (e.g. those with knowledge of foreign languages).

National (Ukraine):

Significant impact of the war: The labor market is characterized by high unemployment, internal and external migration.

Growing demand for professions related to defense and reconstruction: The need for military, civil engineers, demining specialists, etc. is increasing.

Active digital transformation: Business and government agencies are actively implementing digital technologies.

Growth of remote work: Many companies are maintaining or expanding remote work capabilities.

Shortage of qualified personnel in many industries: There is an outflow of specialists abroad.

European level:

Aging populations and labor shortages: Many EU countries are facing an aging workforce and a shortage of workers in certain sectors (especially in healthcare, IT, engineering).

Focus on the green economy and digital skills: There is a growing demand for specialists in the fields of renewable energy, ecology and digital technologies.

Increasing labour mobility: The EU encourages labour migration between member states to address staff shortages.

Growing popularity of hybrid work models: Many European companies are implementing flexible schedules and work models.

Global level:

Automation and artificial intelligence: The active adoption of automation and AI is changing the structure of employment, leading to the loss of some professions and the emergence of new ones.

Global competition for talent: Companies from all over the world compete for highly skilled professionals, especially in technology.

Climate change and the green economy: There is a growing demand for professionals in fields related to sustainable development and combating climate change.

Increase in freelancing and the "gig economy": The number of people choosing independent employment and short-term projects is growing.

Unequal distribution of the labor force: There are significant differences in employment rates and labor market needs in different regions of the world.

- Identify growing and declining industries or job sectors.

Based on the analysis of current trends and features of the economy of Ukraine and Transcarpathian region, the following approximate growing and declining industries or sectors of employment can be identified:

Growing Industries and Employment Sectors:

Information technology (IT) sector: The demand for IT specialists (developers, testers, cybersecurity specialists, data analysts) continues to grow both nationally and globally. Remote work opens up opportunities for Transcarpathian specialists to work for companies from other regions and countries.

Logistics and transport: Transcarpathia, as a border region, plays an important role in logistics chains, especially in wartime. The need for drivers, warehouse workers, and logisticians is growing.

E-commerce and online services: The development of online commerce and the provision of services over the Internet creates a demand for specialists in the field of Internet marketing, SMM, SEO, web development, online sales and customer support.

Healthcare (especially the private sector): The demand for quality medical services remains high. There is a growing need for qualified doctors, nurses and rehabilitation specialists, especially given the consequences of the war.

Education (especially online and non-formal): There is a growing demand for online courses, webinars, trainings, and other forms of non-formal education, creating opportunities for educators and experts.

The scope of services related to IDPs: The increase in the number of internally displaced persons creates a demand for social workers, psychologists, lawyers and other professionals who provide assistance and support.

Construction (in the long term): After the end of the war, a significant increase in the volume of construction work related to the restoration of infrastructure and housing is expected, which will create demand for builders of various specialties.

Agricultural sector (selected niches): The development of organic farming, craft production, and other niche areas can create new jobs.

Declining industries and employment sectors (potentially):

Traditional industrial enterprises (without modernization): Enterprises that do not implement new technologies, do not optimize production and do not adapt to modern market conditions may face a reduction in demand for their products and, consequently, a decrease in the number of jobs.

Jobs associated with routine physical labor: Automation and robotization of production processes can lead to a reduction in the need for unskilled manual labor in industry and agriculture.

Traditional retail stores (without an online presence): The growing popularity of online commerce can lead to a decrease in the number of jobs in physical stores that do not develop online sales channels.

Some administrative and office positions: The introduction of digital tools and automation of document flow can lead to a reduction in the need for some administrative workers and office staff performing routine tasks.

Industries heavily dependent on imports from aggressor countries: Businesses that were previously dependent on supplies from Russia and Belarus and were unable to reorient themselves to new suppliers may face significant difficulties and reduced production.

- Assess workforce challenges, such as skills shortages, automation effects, demographic shifts.

An assessment of the problems of the workforce in the Transcarpathian region, taking into account the shortage of qualified personnel, the effects of automation and demographic shifts, shows the following picture:

1. Shortage of qualified personnel:

Scale of the problem: The shortage of qualified personnel is one of the key problems of the labor market in Transcarpathia. This is manifested in many industries, including industry (skilled workers, engineers), construction (builders of various specialties), healthcare (doctors of narrow specialties, nurses), education (individual subjects), as well as the growing demand for digital skills specialists.

Reason:

- **Labor migration:** A long-term outflow of the able-bodied population abroad in search of better working conditions and higher wages.
- **Insufficient quality of vocational education:** The system of vocational education often does not meet the modern needs of the labor market, producing insufficiently qualified specialists in in-demand specialties.
- **Low prestige of working professions:** There is a tendency among young people to obtain higher education, often not in those specialties that are needed by the economy of the region.
- **Aging of the workforce:** A large part of skilled workers are of pre-retirement age, which creates a risk of deepening the personnel shortage in the future.
- **Impact of the war:** The mobilization and departure of part of the population abroad due to the war temporarily reduced the number of available skilled workers.

Consequences:

- **Complications for employers:** Businesses have difficulty finding and hiring qualified personnel, which can hinder their development and competitiveness.
- **Rising labor costs:** Staff shortages can lead to higher wages in certain sectors, which increases costs for businesses.
- **Decrease in the quality of goods and services:** The lack of qualified professionals can negatively affect the quality of products and services provided in the region.

2. Automation Effects:

Current state: The level of automation in industry and other sectors of the economy of Transcarpathia still remains relatively low, especially compared to more developed regions of Ukraine and EU countries.

Potential impact: In the future, in order to increase efficiency, reduce costs and compensate for labor shortages, we can expect an increase in the level of automation in enterprises in the region.

Possible consequences:

- **Job cuts:** Automating routine and repetitive tasks can lead to a reduction in the need for certain categories of workers, especially those with low qualifications.
- **Changing workforce requirements:** There will be an increasing demand for professionals who know how to maintain, program, and repair automated equipment, as well as data analysts and digital specialists.
- **Need for retraining:** To maintain employment, employees will need to learn new skills related to automated systems.

3. Demographic shifts:

Population aging: Transcarpathian region, like Ukraine as a whole, is characterized by a tendency to population aging. The share of people of retirement age is growing and the share of young people is decreasing.

Low birth rate: Low birth rates lead to insufficient replenishment of the labor market by young professionals.

Youth migration: Young people often leave the region for larger cities in Ukraine or abroad in search of better educational and career opportunities.

Consequences:

- **Decrease in the working-age population:** These trends lead to a reduction in the number of potential workers in the labor market.
 - **Increasing burden on the social sphere:** An increase in the share of pensioners creates an additional burden on the pension and social security systems.
 - **Increasing talent shortages:** A decrease in the number of young professionals makes it difficult to fill vacancies and renew the workforce.
 - **Decrease in innovation potential:** The outflow of young people can negatively affect the innovation potential of the region.
- Consider external factors influencing the labor market (e.g., economic crises, global events like the COVID-19 pandemic or conflicts).

Influence of external factors on the labor market of Transcarpathian region:

The labor market of the Transcarpathian region is an integral part of the national and world economy, therefore it is significantly influenced by external factors:

Economic crises (global and national):

- **Reduced demand:** Global or national economic downturns lead to a decrease in demand for goods and services, which negatively affects production and may lead to job losses in Transcarpathian enterprises (especially in export-oriented industries such as woodworking).
- **Decrease in investment:** Economic instability constrains domestic and foreign investment, which slows down the creation of new jobs and the modernization of existing ones.
- **Rising unemployment:** During crises, unemployment rises, competition for jobs increases, and employers can freeze hiring or cut wages.
- **Impact on labor migration:** Economic problems in EU countries, which are the main areas of labor migration from Transcarpathia, may lead to a decrease in demand for Ukrainian workers or their return home, which creates additional pressure on the local labor market.

Global events (COVID-19 pandemic):

- **Destruction of certain sectors:** The pandemic has dealt a significant blow to the tourism industry of Transcarpathia due to restrictions on movement and closure of establishments. This has led to massive temporary job losses in hotels, restaurants and related areas.
- **Accelerating digital transformation:** The pandemic has stimulated the shift to remote work and the active use of online services, which has increased the demand for professionals with digital skills and contributed to the development of relevant infrastructure.
- **Changes in supply chains:** Global disruptions in supply chains have affected the operation of industrial enterprises in Transcarpathia, which depend on imported components or export their products.

Conflicts (war in Ukraine):

- **Large-scale internal migration:** The full-scale invasion caused a significant influx of IDPs to Transcarpathia, which significantly changed the balance in the local labor market, increasing the supply of labor, but not always in demand skills.

- **External migration of Ukrainians:** The departure of a significant number of Ukrainians abroad, including residents of Transcarpathia, has led to a decrease in the available labor force in certain sectors.
- **Reorientation of the economy:** The war has led to an increase in the need for industries related to defense, logistics and humanitarian aid, which can create new jobs in Transcarpathia.
- **Destruction of economic ties:** The severance of trade ties with Russia and Belarus, as well as the blockade of seaports, affected the work of many enterprises in Transcarpathia that were focused on these markets or used their transit opportunities.
- **Overall economic instability and risks:** The war creates significant economic uncertainty, constrains investment, and makes it difficult to forecast labor market development.

Taking into account these external factors is critical for understanding the current situation and forecasting future changes in the labor market of the Transcarpathian region. The development of effective strategies to support employment and economic development of the region should be based on the analysis of both internal and external influences.

- Analyze the influence of Artificial Intelligence (AI) on employment trends, job creation, and workforce transformation across different industries. If available data, compare workforce demand before and after AI integration in different industries; Identify new skills required in the AI-driven job market; Discuss challenges and opportunities AI brings to the workforce.

The impact of artificial intelligence (AI) on employment trends in Zakarpattia region and Ukraine:

Analyzing the impact of artificial intelligence (AI) on the labor market of Transcarpathian region and Ukraine is a difficult task due to the relatively low level of its implementation compared to developed countries. However, it is already possible to observe certain trends and predict future changes:

Current Impact of AI on Employment Trends:

Automation of routine tasks: In some industries (e.g., financial sector, customer service, logistics), AI elements are already being used to automate routine and repetitive tasks, resulting in increased efficiency and potentially reduced need for employees in these positions.

Increased productivity: The application of AI tools can help employees complete their tasks faster and more efficiently, increasing overall productivity in various industries.

Changing the nature of existing jobs: AI can change the content of existing occupations, requiring employees to have new skills to interact with AI systems and use them in their work.

Job creation:

New Careers Related to AI Development and Implementation: The development of AI creates a demand for professionals in the field of AI algorithm development, machine learning, data processing, AI engineers, AI ethicists, and AI solution implementation specialists in various industries.

Related industries: The rise of AI can drive the development of related industries such as cloud computing, storage, and cybersecurity, which will also lead to the creation of new jobs.

Workforce Transformation in Various Industries:

Financial sector: AI is being used to automate data processing, detect fraud, credit scoring, and provide personalized financial advice, which can lead to reduced operational staff and increased demand for data analysts and AI specialists.

Customer Service: AI-powered chatbots and virtual assistants are increasingly being used to provide first-line customer support, which can reduce the need for call center operators but increase the demand for specialists to design and train these systems.

Logistics and transportation: AI is being applied to optimize routes, manage warehouse inventory, and develop autonomous vehicles, which could lead to changes in the professions of drivers and warehouse workers in the future.

Industry: The introduction of AI into automated production processes can improve product efficiency and quality, but it can also lead to a reduction in the need for workers in routine production operations. At the same time, the demand for automation engineers and specialists in the maintenance of "smart" systems will increase.

Healthcare: AI has the potential to improve diagnosis, drug development, and personalized treatment, which could change the role of healthcare professionals and create demand for medical data analysis and AI applications in medicine.

Agriculture: "Smart" agriculture using AI to monitor crops, manage irrigation and fertilization can improve yields and efficiency, but will also require new knowledge and skills from farmers.

- Provide insights into potential future developments in employment and workforce needs.

Forecast of potential future changes in employment and labor needs in Zakarpattia region and Ukraine:

The future of employment and labor needs in the Transcarpathian region and Ukraine will be determined by the complex interaction of many factors, including technological progress, demographic trends, geopolitical situation and economic development. Here are some potential future changes:

1. Further Growth of the Digital Economy and Demand for Digital Skills:

Digitalization will penetrate all areas of the economy, leading to a steady increase in demand for IT professionals, data analytics, cybersecurity, artificial intelligence, digital marketing, and e-commerce.

Even in traditional industries, there will be a growing need for workers with digital literacy and the ability to use digital tools in their work.

2. Expanding the scope of remote and hybrid work:

Remote work will become more common, opening up job opportunities regardless of geographic location.

Employers will be forced to adapt their management models and corporate culture to the conditions of remote and hybrid work.

3. The Impact of Automation and Artificial Intelligence:

The automation of routine and repetitive tasks will lead to a reduction in the need for certain categories of workers, especially those with low qualifications.

The demand for specialists involved in the development, implementation, maintenance and management of automated systems and AI will increase.

The content of many existing professions that will require human-AI cooperation will change.

4. Changes in Demographic Structure and Aging Workforce:

The continued trend of population aging and low birth rates will lead to a decrease in the number of young workers.

The need for workers in the field of elderly care and medical care will increase.

Employers will have to develop strategies to attract and retain older workers.

5. Reorientation of the branch structure:

Infrastructure restoration and development: After the end of the war, there is expected to be a significant demand for builders, engineers, and other professionals related to infrastructure restoration.

Growth of the green economy: The transition to more environmentally sustainable technologies will create a demand for specialists in the fields of renewable energy, ecology and energy efficiency.

Development of the agricultural sector with high added value: Interest in organic farming, craft production and other niche areas is expected to grow.

Strengthening the role of logistics and transport: Transcarpathia will retain its important role as a logistics hub.

6. Changing employee expectations:

Employees will increasingly value work-life balance, scheduling flexibility, and opportunities for professional development.

Employers who offer attractive working conditions and a favorable corporate culture will have an advantage in attracting talent.

7. Impact of Global Trends:

Global competition for talent, especially in high-tech industries, will continue.

International labor migration will continue to affect the labor market of Ukraine and Transcarpathia.

Economic and political events in the world can have unpredictable consequences for the employment sector.

8. CONCLUSION & FUTURE CONSIDERATIONS

- **Key findings from the analysis**

Present a concise summary of the key insights from the analysis, which will form the foundation for understanding current labor market dynamics and for making informed recommendations. Point out the primary barriers that employers and job seekers face, examine trends.

Current dynamics: The labor market of the Transcarpathian region is characterized by a difficult situation caused by the ongoing war in Ukraine. There is a significant influx of internally displaced persons (IDPs), which increases the supply of labor, but the quality of skills to the available vacancies remains a problem. At the same time, external labor migration and mobilization continue to reduce the availability of qualified personnel.

Main barriers:

For employers:

Acute shortage of skilled personnel: Particularly felt in industry, construction, health care and blue-collar professions.

Skills mismatch: A significant proportion of job seekers do not possess skills that meet the demands of modern workplaces, including digital competencies.

Economic uncertainty: Martial law and economic instability make long-term planning and investment in personnel difficult.

Language barriers: Employment of IDPs can be difficult, especially in areas that require active communication.

For job seekers:

Limited number of high-paying and skilled jobs: The job market does not always offer enough opportunities for highly skilled workers.

Low wage competitiveness: The level of remuneration in some sectors remains insufficient compared to other regions and EU countries.

Language barriers: Limit employment opportunities, especially for IDPs and in international companies.

The need for reskilling and validation of qualifications: Many IDPs and locals need new skills to adapt to the labor market.

Risks of discrimination: Based on age, gender, or status of IDPs.

Key trends:

Growing demand for digital skills: The digital transformation of the economy requires essential and specialized digital competencies from workers.

The spread of remote work: War and technological advances are contributing to the development of flexible forms of employment.

Aging workforce and demographic crisis: Pose long-term challenges to securing the labor market.

Automation potential: In the future, it can lead to changes in the employment structure, reducing routine work and creating new needs.

Reorientation of industries: The growth of logistics, IT and certain sectors of industry against the backdrop of the decline of others.

Impact of migration processes: Both the departure of Ukrainians and the influx of IDPs continue to shape the labor market.

- **Suggested measures to improve workforce integration and employment stability**

Based on the key findings, propose measures and recommendations to address identified challenges in the labor market. The goal is to enhance workforce integration, ensure better alignment between training programs and employers needs in the target regions. Explain how these measures could contribute to a more resilient labor market and better workforce integration.

Measures and recommendations to solve the problems of the labor market of the Transcarpathian region:

Based on the key findings of the analysis, we propose the following measures and recommendations to strengthen the integration of the workforce, ensure better coherence between training programs and employers' needs, and promote a more sustainable labor market:

1. Overcoming the shortage of qualified personnel:

Development and modernization of vocational education (TVET):

- **Involvement of businesses in the development of training programs:** Active participation of employers in identifying skills needs and shaping TVET curricula to ensure their relevance.
- **Investments in modern equipment and technologies:** Updating the material and technical base of TVET institutions for the training of specialists who are proficient in modern production processes.
- **Stimulating young people to study in TVET:** Conducting information campaigns on the prestige of working professions and career opportunities. Introduction of scholarship programs and other incentives.
- **Development of dual education:** Combination of theoretical training in TVET institutions with practical training at enterprises.

Support for retraining and advanced training:

- **Creation of regional retraining centers:** Organization of courses and trainings for employees who need new skills due to technological changes or transition to other industries.
- **Involvement of employers in training programs:** Incentives for enterprises to organize training and advanced training of their employees, possibly with partial compensation of costs.
- **Cooperation with employment centers:** Development of joint retraining programs for the unemployed, taking into account the needs of local employers.

2. Coordination of training programs with the needs of employers:

Regular monitoring and forecasting of labor market needs: Conducting research and surveys of employers to determine current and future skills and occupation needs at the local and regional levels.

Establishment of regional councils for vocational education: Involvement of representatives of business, educational institutions, authorities and civil society organizations to coordinate efforts in the field of training.

Updating educational standards: Regularly reviewing and updating educational standards in higher education and TVET institutions, taking into account the needs of employers and technological trends.

Promoting cooperation between universities and businesses: Encouraging student internships in enterprises, involving business representatives in teaching and developing training courses.

3. Strengthening the integration of the workforce (including IDPs):

Language support programs: Organization of free Ukrainian language courses for IDPs.

Promotion of qualification validation: Simplification of procedures for the recognition and validation of professional qualifications acquired by IDPs.

Information support and consulting: Providing IDPs with information about available vacancies, training and retraining opportunities, as well as legal support in employment issues.

Onboarding programs in the workplace: Encouraging employers to implement onboarding programs for new employees, including IDPs, in order to quickly integrate them into the team.

Anti-discrimination measures: Conducting information campaigns and strengthening control over compliance with legislation on the prohibition of discrimination in the labor market.

4. Promoting the development of digital skills:

Incorporating digital competencies into curricula: Mandatory learning of basic digital skills in all educational institutions.

Organization of digital literacy courses: Providing access to courses for the adult population, including the unemployed and workers who need to update their skills.

Support for the development of IT education: Encouraging young people to study IT specialties and supporting relevant educational programs.

5. Support for flexible forms of employment:

Promoting the development of remote work: Development of recommendations and methodological materials for employers on the organization of remote work.

Regulation of flexible working hours: Providing a legislative framework for the implementation of flexible working hours, taking into account the needs of employees and employers.

How these measures will contribute to a more sustainable labor market and better integration of the workforce:

Improving skills matching: Aligning training programs with employers' needs will ensure the production of qualified professionals who are in demand in the labor market, reducing the imbalance between supply and demand.

Increasing the competitiveness of the workforce: The development of digital skills and support for reskilling will allow employees to remain competitive in the face of technological change.

Strengthening the economic integration of IDPs: Measures aimed at overcoming language barriers, qualification confirmation and adaptation will contribute to faster and more effective integration of IDPs into the labor market, using their potential for the development of the region's economy.

Reducing the talent shortage: Investing in TVET and encouraging young people to enter the blue-collar professions will help reduce the shortage of skilled workers in key industries.

Increased productivity: A skilled workforce with modern skills will contribute to increasing productivity in enterprises.

Creating a more flexible and adaptive labor market: Supporting remote work and flexible schedules will make the labor market more resilient to external shocks and meet the needs of different categories of workers.

The implementation of these measures requires coordinated efforts of authorities, educational institutions, employers, public organizations and employees themselves. However, their successful implementation will lay the foundation for a more sustainable, inclusive and competitive labor market in the Transcarpathian region.

9. REFERENCES

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