

# Workforce skills gaps analysis under security challenges: business needs and regional resilience – a case study of Lviv region during wartime

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## Introduction

The war provoked significant changes in the labor market of Ukraine not only in the occupied and frontline regions, but also in the main and relatively safe regions<sup>1</sup>. Lviv region is a relatively safe and economically active region, which has both advantages

<sup>1</sup> A. Suhorukova, *Regional business in Ukraine: experience, opportunities and obstacles*, Kyivstar Business Hub, <https://hub.kyivstar.ua/articles/regionalnij-biznes-v-ukrayini-dosvid-mozhливosti-ta-pereshkodi> [accessed: 12.06.2025].

and its own problems in this regard. The economy is characterized by developed industries, trade, it and agriculture. However, as a result of military operations, the structure of the economy is changing. This creates new challenges for businesses, government agencies, and society as a whole.

Since the first days of the war, the Lviv region has become one of the main accommodation centers for internally displaced persons. This significantly increased the burden on social infrastructure, housing stock and the labor market. On the one hand, the influx of new labor created potential opportunities for economic development, and on the other hand, it revealed an acute shortage of certain skills and specialties. Many enterprises have faced difficulties in finding qualified employees, especially in the manufacturing and technological fields.

A negative factor in the development of the labor market was the emigration of the working-age population abroad and the mobilization of citizens liable for military service in the Armed Forces of Ukraine. This has led to structural changes in the labor market, an increase in the burden on state social programs, and the need to adapt educational and professional courses to new economic realities.

The latest scientific research shows that the gap between the available skills of the labor force and the requirements of the regional economy is growing. This problem is typical not only for the regions of Ukraine, but also for many European countries, but in the case of Lviv region, it becomes more acute under the pressure of additional security risks and threats. Labor shortages and the mismatch of their skills with market needs have become serious barriers to the region's economic growth.

Now the labor market of Lviv region shows certain positive trends. Enterprises are actively implementing new approaches to attracting employees, in particular through flexible forms of employment, remote work and developing partnerships with educational institutions. This indicates the possibility of adapting to new conditions and creating a more sustainable employment system that can effectively respond to the challenges of today. At the same time, new problems arise. Businesses are facing global changes and unprecedented challenges. Some of them significantly influenced management strategies, personnel policies, and approaches to the organization of production. The shortage of qualified personnel, rising costs, disruption of logistics chains and uncertainty of the economic future once again signal the problems that enterprises will have to deal with.

New geopolitical movements dictate new configurations of business protection systems against loss risks – expanding opportunities for remote work, automating business processes, and developing retraining programs for employees. Since a significant part of the labor force has been mobilized or moved abroad, companies that have not been able to quickly find a replacement are taking extraordinary steps (reducing the overall level of staff skills). Recently, there has been an aggravation of the problem of access to financing for small and medium-sized businesses, enterprises have faced a decrease in profits, are losing the opportunity to invest in staff training

and the development of new technologies. In such circumstances, survival depends on the ability of companies to adapt quickly, use new business models and look for opportunities to cooperate with international partners.

When considering the adaptation of the labor market to war conditions, it is important to take into account both short-term challenges associated with the need for rapid response to crisis situations, and long-term development strategies. This includes the state regional employment policy, initiatives for training and retraining of personnel, the introduction of organizational and technological innovations, and new employment models.

The study aims to identify critical skills gaps in the workforce to determine promising directions for enhancing regional economic resilience through targeted training programs and other short-term and medium-term measures supporting labor market participants. To achieve this goal, the following research tasks are defined:

- to determine structural changes and features of the transformation of the Lviv region labor market under martial law;
- to analyze the problems of adaptation of Internally Displaced Persons in the regional labor market;
- to develop a methodological approach to measuring gaps in labor skills, conduct its testing in the labor market of Lviv region;
- to substantiate strategic priorities for improving the sustainability of the regional labor market in Lviv region, including ways to overcome the identified gaps in labor skills in war conditions and prospects for post-war reconstruction.

## Literature review

Many works are devoted to the study of regional labor markets in Ukraine. The vast majority of them are based on the analysis of phenomena and processes, the time horizons of which were practically not related to the conditions of war. At the same time, structural imbalances in the labor market, specific approaches and methods of their analysis, and ways to visualize information existed with the relative stability of the economy<sup>2</sup>.

<sup>2</sup> See e.g.: A. Popa *et al.*, *Research and analysis of vacancies and needs for skilled personnel in the EU, the Republic of Moldova and Ukraine*, International Labour Organization Decent Work Technical Support Group and ILO Bureau for Central and Eastern Europe, Budapest 2013, [https://www.ilo.org/wcmsp5/groups/public/---europe/---ro-geneva/---sro-budapest/documents/publication/wcms\\_244735.pdf](https://www.ilo.org/wcmsp5/groups/public/---europe/---ro-geneva/---sro-budapest/documents/publication/wcms_244735.pdf) [accessed: 12.06.2025]; V. Sarioglu, O. Cymbal, *Big Data for labour market intelligence. Labour market landscaping Ukraine*, European Training Foundation, 2020, [https://www.etf.europa.eu/sites/default/files/2020-11/ukraine\\_web\\_labour\\_market\\_landscaping\\_final\\_web.pdf](https://www.etf.europa.eu/sites/default/files/2020-11/ukraine_web_labour_market_landscaping_final_web.pdf) [accessed: 12.06.2025]; I. Klyuchkovska, Yu. Marusyk, O. P'yatkovska, *Звіт про результати дослідження міграційних настроїв студентів Львова* [Report on the results of the study of migration attitudes of Lviv students], International Institute

During the war, not only the problems of the labor market, the organization of social and labor relations and employment, but also the theory, methodology and practice are in a turbulent state. In Ukraine, each individual labor market has its own corridor of opportunities. Traditional factors of supply and demand deformation, and with them increased migration mobility of the population, structural changes in the regional economy, loss of human capital, including due to the global COVID-19 pandemic<sup>3</sup>, were supplemented with fundamentally new risks of the wartime period. Especially noticeable changes occurred against the background of the movement of a large number of the population with its additional burden on the local labor market<sup>4</sup>, as well as the mobilization of persons liable for military service in the ranks of the Armed Forces of Ukraine. In order to ensure the regional stability of labor markets in the future, it is necessary to improve the conceptual, terminological, and methodological apparatus of research.

## Data and methodology research

The research methodology is based on a triangulated approach, namely, a comprehensive desk study; a sociological survey of employers in the Lviv region; high-quality focus group interviews with employers and internally displaced persons.

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of Education, Culture and Diaspora Relations of Lviv Polytechnic National University, Lviv 2014, <http://miok.lviv.ua/wp-content/uploads/2015/03/zvitpi.pdf> [accessed: 12.06.2025].

<sup>3</sup> *Традиції ремісництва та дефіцит кваліфікації робітничих кадрів на регіональному ринку праці Львівщини* [Traditions of handicrafts and the shortage of skilled workers in the regional labor market of Lviv region], ed. U.Ya. Sadova *et al.*, Institute of Regional Studies of the National Academy of Sciences of Ukraine, Lviv 2008; *Ukrainian labour migration and the future of labour market: social-economic, geographic and institutional dimensions*, ed. U.Ya. Sadova, Dolishniy Institute of Regional Research of the National Academy of Sciences of Ukraine, Lviv 2020, <http://ird.gov.ua/irdp/p20200037.pdf> [accessed: 12.06.2025]; U. Sadova, T. Stepura, I. Baranyak, *Ukraine in the territorial migration systems: current structural-qualimetric aspects of the formation and development*, "European Journal of Transformation Studies" 2020, vol. 8, no. 1, pp. 60–78, <https://czasopisma.bg.ug.edu.pl/index.php/journal-transformation/article/view/4997> [accessed: 12.06.2025]; *Економічна активність населення Львівської області: формальна та неформальна зайнятість* [Economic activity of the population of the Lviv region: formal and informal employment], ed. U.Ya. Sadova, Dolishniy Institute of Regional Research of the National Academy of Sciences of Ukraine, Lviv 2017, <https://ird.gov.ua/ird01/p106207.php#11> [accessed: 12.06.2025]; I. Demydov *et al.*, *Google Cloud services as monitoring tools and prevention of inclusion in the rear labor market*, [in:] *Intelligent Systems Workshop at CoLInS 2024: proceedings of the 8<sup>th</sup> International Conference on Computational Linguistics and Intelligent Systems*, vol. III: *Intelligent Systems Workshop*, Lviv, Ukraine, April 12–13, 2024, eds. V. Vysotska, Y. Burov, <https://ceur-ws.org/Vol-3688/paper13.pdf> [accessed: 12.06.2025].

<sup>4</sup> L. Yatsenko, *Restoring the labor market in Ukraine during the war: regional aspects*, Center for Economic and Social Studies of NISS, [https://niss.gov.ua/sites/default/files/2024-03/az\\_regrinki-praci\\_04032024.pdf](https://niss.gov.ua/sites/default/files/2024-03/az_regrinki-praci_04032024.pdf) [accessed: 12.06.2025].

The analytical work, which was aimed at obtaining a comprehensive picture of the current situation in the regional labor market, included:

- analysis of statistical data (to identify changes in the structure of employment, the unemployment rate of the population, the dynamics of the level of wages in the Lviv region, as well as to assess the impact of internally displaced persons (IDPs) on the regional labor market based on official data of the state statistics service of Ukraine, the Ministry of Economy of Ukraine and local administrations);
- sociological research (online survey among employers in Lviv region (N=310 enterprises stratified by size and type of economic activity); survey of IDPs looking for work (N=700);
- analysis of data obtained through conducting semi-structured interviews with representatives of business, local authorities and public organizations (N=50);
- analysis of in-depth interviews with experts (to see the problem of labor skills shortage and possible ways to overcome it by conducting a series of interviews with experts in the field of economics, social policy, employment and education);
- content analysis (regulatory legal acts regulating employment of the population in war conditions, as well as publications of domestic and foreign scientists on the experience of overcoming the shortage of personnel in crisis conditions);
- comparative analysis of generalization (experience of other regions of Ukraine and European countries in overcoming the personnel crisis and identifying key mechanisms for adapting the labor market to military conditions);
- modeling development scenarios of Lviv region labor market (and depending on the duration of the military conflict and the economic situation, evaluating the effectiveness of various state and regional policy strategies in the context of ensuring the sustainability of the labor market).

The study is based on empirical data, including statistical indicators, opinion polls, and peer reviews.

The use of statistical and sociological methods, quantitative and qualitative data allowed us to obtain a comprehensive picture of the situation on the labor market of the Lviv region, taking into account both statistical metrics and qualitative characteristics of the problem. The use of several methods of data collection and analysis ensured the reliability of the results obtained.

## **Transformation of the Lviv region labor market under martial law: structural changes and features**

In 2023, within the framework of the project of the International Labour Organization “Inclusive labor market for job creation in Ukraine” in Lviv region, a team of scientists with our participation conducted a special study “Analysis of gaps in skills and business needs in the labor force” (with financial support from the Government

of Denmark)<sup>5</sup>. The applied results of the study provided an empirical basis and analytics for the formation of strategies for the development of human capital, the development of short- and medium-term programs to overcome imbalances in the labor market of the Lviv region, the effective use of resources for the safety and quality of life of residents of the region. The results of the study pointed out the importance of creating new methods that would take into account the peculiarities of regional labor markets in Ukraine in the conditions of war and the prospects for post-war reconstruction. The focus was on analyzing the lack of skills in the workforce in the face of security challenges and threats.

Already at the first stage of analytical work, it was revealed that under martial law, the Lviv region has become a humanitarian hub, a powerful logistics center, a region for preserving human capital and economic potential of Ukraine. This has significantly affected the labor market in the region, where demand for labor is growing, and at a faster pace for unskilled labor. In the course of our work, it turned out that the problems of labor shortage are relevant for most sectors of the regional economy. More than two-thirds of the surveyed employers (69%) noted a special “personnel shortage”. A fifth have big complaints about the quality of the labor force. In the context of individual professions, this indicator reached more than 50% of respondents (figure 1), among employers of the information and telecommunications sphere – 2/5. Almost all employers lack employees in the context of individual professions – we are talking about representatives of the hotel and restaurant business (3/4 of respondents), industry (2/3 of respondents), transport industry (1/2 of respondents), construction (43%), information and telecommunications activities (29%).

Among the problems that employers most often mentioned in the process of finding new employees were: lack of the necessary level of education (1/4 of respondents), technical skills (1/5 of respondents) and experience (1/4 of respondents). Interestingly, job seekers also made demands on employers: a fifth of candidates put forward higher requirements regarding the salary level. As a result, some business representatives (11%) did not find the right employee.

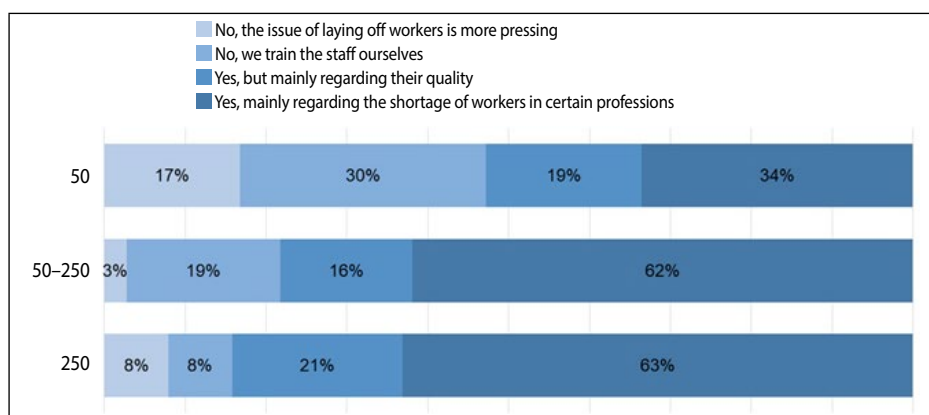
In 2024, the situation with personnel shortage in the labor market of Lviv region only worsened. Introduction to analytical reports, publications of scientists on this topic<sup>6</sup> showed that the shortage of specialists in key sectors of the economy has not

<sup>5</sup> Analysis of skill gaps and business needs in the workforce. Report on the results of the Lviv region labor market research (under the agreement on the Lviv Regional Employment Partnership “OPLICH” commissioned by the International Labour Organization), August 2023, <https://oplich.lviv.ua/blog/doslidzhennya-rinku-praci-lvivskoyi-oblasti-analiz-rozriviv-u-navichkah-i-potreb-biznesu-u-robochij-sili> [accessed: 12.06.2025].

<sup>6</sup> State Statistics Service of Ukraine, Main Statistical Office in Lviv Region, <https://www.lv.ukrstat.gov.ua> [accessed: 12.06.2025]; Lviv Regional Employment Center, <https://www.lviv.dcz.gov.ua> [accessed: 13.11.2024]; *UNHCR, the UN Refugee Agency and the Lviv Regional State*

only increased, but also acquired sectoral and territorial specifics. The peculiar “risk zone” includes entire industries and production (mechanical engineering, electrical industry and metalworking); construction (and not only because of the outflow of personnel to European countries, but also the growth of new labor needs for the restoration and reconstruction of infrastructure facilities); agriculture (a special shortage of seasonal workers, which leads to crop losses and production cuts); IT sector (Lviv is an important IT hub, but a significant number of software and engineering specialists have moved abroad or lost stable orders – all this forces them to look for alternative employment opportunities); medicine and education (the departure of highly qualified doctors and teachers abroad increases the population’s dissatisfaction with the quality of services). Moreover, in times of war, businesses that face the problem of attracting employees with the necessary competencies are not always ready to invest in long-term training and retraining programs for personnel.

Figure 1. Urgency of the problem of labor shortage in the sociological assessment of the opinion of employers in Lviv region (2023)



Source: own research.

*Administration solidify ongoing collaboration in support of people impacted by the war to recover and rebuild their homes and lives*, UNHCR, 28.03.2023, <https://www.unhcr.org/ua/55517-mou-with-lviv-ua.html> [accessed: 12.06.2025]; *Ринок праці IT-сектору в умовах війни: реальність та перспективи* [The IT sector labor market in wartime: realities and prospects], National Institute for Strategic Studies, 28.06.2023, <https://niss.gov.ua/news/komentari-ekspertiv/ry-nok-pratsi-it-sektoru-v-umovakh-viyny-realiyi-ta-perpektyvy> [accessed: 12.06.2025]; *Безробіття в Україні в період повномасштабної війни* [Unemployment in Ukraine during a full-scale war], National Institute for Strategic Studies, 14.02.2023, <https://niss.gov.ua/news/komentari-ekspertiv/bezrobittya-v-ukrayini-v-period-povnomasshtabnoyi-viyny> [accessed: 12.06.2025].

## Internally displaced persons as a potential for ensuring the sustainability of the regional labor market

Employment of internally displaced persons (IDPs) has become a separate problem of security and sustainability of the modern labor market in Lviv region. Recall that during the period of independence, Ukraine experienced two main waves of forced migration (in 2014–2015 and 2022–2024). However, if in the first wave the maximum number of registered IDPs was 1.5 million people or 3.4% of the population, then in 2024 it reached 4.6 million people<sup>7</sup>. The analysis of the scale and structure of forced population movements in 2022 also revealed that, on the one hand, there is a potential (internal capacity) of territorial communities for temporary shelter of displaced persons, on the other – there is a problem of “flabby” integration of IDPs into the new environment (it is logical that not everyone is ready to accept the realities of a full-scale war for an indefinite period, the inability to return to their own settlements, etc.). Lviv region, since the beginning of a full-scale war, has become a recipient of 245 thousand officially registered IDPs. The share of the working-age population was only 53%. The registration of this category of people in the state Employment Service was indicative, where 7% of IDPs were officially registered as unemployed<sup>8</sup>. Yes, indeed, people are often focused on solving problems on their own. Many find prospects through the implementation of basic policies for the economic integration of IDPs: in Lviv region these are career guidance services, organization of professional training, provision of vouchers for training new professions, attracting IDPs to socially useful works, services for informing IDPs about employment opportunities or obtaining a microgrant “E-robota” for the creation and development of your own business, remote registration of unemployed people through the app “DIYA”, work on the payment of compensation to employers for employment (figure 2).

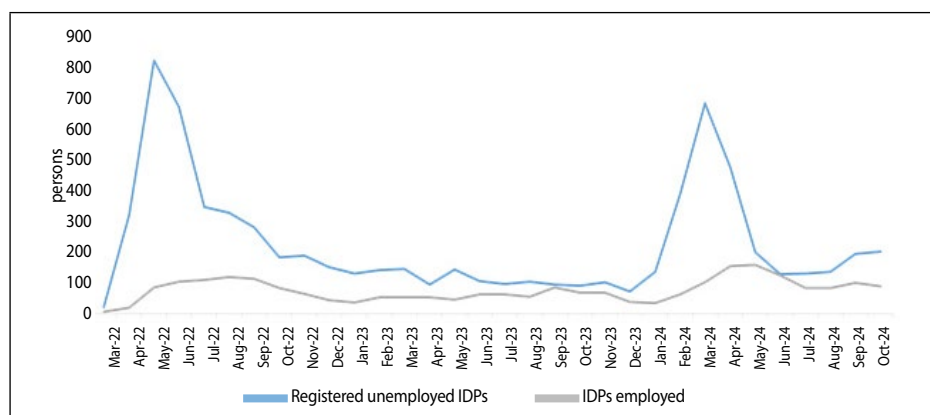
At the same time, from the point of view of the demand of business structures for labor services from representatives of IDPs, there are explanations. Thus, objectively, a significant part of IDPs do not have the opportunity to quickly find a job in their specialty, since their previous experience does not meet the sectoral needs of the regional labor market. Many displaced persons need retraining or additional training, which is a serious barrier to employment. An additional challenge is the adaptation of IDPs to new working conditions. Many displaced persons do not have the

<sup>7</sup> *Internally displaced persons*, Information and Computing Center of the Ministry of Social Policy of Ukraine, 2.12.2024, <https://www.ioc.gov.ua/analytics/dashboard-vpo> [accessed: 13.11.2024].

<sup>8</sup> *Труднощі переселенців Львівщини: як їх долають у регіоні, де кількість ВПО – одна з найбільших* [Difficulties of displaced persons in Lviv region: how they are overcome in a region where the number of IDPs is one of the largest], Твоє місто, [Your City], 14.06.2023, [https://tvoemisto.tv/news/trudnoshchi\\_pereselentsiv\\_lvivshchyny\\_yak\\_ih\\_dolayut\\_u\\_reghioni\\_z\\_naybilshoyu\\_kilkistyu\\_vpo\\_150245.html](https://tvoemisto.tv/news/trudnoshchi_pereselentsiv_lvivshchyny_yak_ih_dolayut_u_reghioni_z_naybilshoyu_kilkistyu_vpo_150245.html) [accessed: 12.06.2025].

appropriate skills or need additional training to meet the needs of innovation in the local labor market. In other words, there is an imbalance between supply and demand: businesses are not always ready to accept employees without experience or offer competitive working conditions. This leads to a situation where even the existing IDPs workforce is not used effectively due to non-compliance of professional competencies with market requirements.

Figure 2. Dynamics of registration and employment of IDPs by the Lviv Regional Employment Centre (03.2022–10.2024)



Source: Lviv Regional Employment Centre.

Another destructive factor of the shortage of labor in the Lviv region labor market is an increase in the cost of living in the region, which according to the latest data ranges from 345\$ to 920\$ per month and above<sup>9</sup>. Not all employers can now offer wages high enough to compete with working conditions abroad. As a result, qualified employees often look for opportunities to emigrate or move to other regions of Ukraine.

## Gaps in labor force skills: a methodological approach to measuring and testing results in the Lviv region labor market

Among the reasons for the imbalance in the labor market of Lviv region, special attention should be paid to the topic of the shortage of skills – their types, priorities, assessments. In our study, a special methodological approach was used to study this

<sup>9</sup> *How much does a month of living in Lviv cost: prices for housing, food, transportation*, Visit Ukraine Today, 9.11.2024, [https://visitukraine.today/uk/blog/5070/how-much-does-a-month-of-living-in-lviv-cost-prices-for-housing-food-transportation?srsltid=AfmBOopHsh-pzvb\\_SjmWMAAnuGHR0Uku85aPOpm1SLihyuG7ub\\_HurfttV#orenda-zitla-ta-vartist-pro-zivannya-u-lvovi](https://visitukraine.today/uk/blog/5070/how-much-does-a-month-of-living-in-lviv-cost-prices-for-housing-food-transportation?srsltid=AfmBOopHsh-pzvb_SjmWMAAnuGHR0Uku85aPOpm1SLihyuG7ub_HurfttV#orenda-zitla-ta-vartist-pro-zivannya-u-lvovi) [accessed: 12.06.2025].

problem – building a matrix of skill gaps. The size of the gap was determined based on the deviation between the priorities of skills and the level of their proficiency among employees according to employers estimates<sup>10</sup>. The survey results revealed an interesting picture: 97% of employers surveyed noted the particular importance of solid skills (professional-functional and vocational-technical), with the largest gaps occurring in terms of digital skills. Soft skills of employees (result orientation and effective communication) are also important, but according to employers of Lviv region, gaps in the level of their employee proficiency are not critical. The proposed approach became the basis for further construction of the design profile of retraining and advanced training programs for the unemployed and other categories of labor market participants in Lviv region (digital literacy, working with clients and business communications). The search for ways to eliminate gaps in labor skills allowed us to put forward and justify the idea of creating a “road map” common to various stakeholders of the Lviv region labor market (figure 3).

Gaps in workforce skills can be assessed differently from the perspective of business and workforce interests. To take into account the views of all participants in the region’s labor market, we organized a survey in the form of focus groups (with employers and IDPs). The survey results only confirmed the hypothesis that there is a conflict of interest between labor market participants and problems in balancing them.

Such problems include the unwillingness of IDPs to “betray” the profession they received before the war, the migration aspirations of IDPs, reinforced by the proximity of the western border, and the difficulty of quickly changing their living environment depending on circumstances.

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<sup>10</sup> The traditional division of skills involves two large groups: “hard” skills and “soft” or flexible (universal, non-specialized) skills. In the author’s approach, the method of identifying gaps in the skills of the labor force provided for their classification into 5 main groups: 1) professional-functional, 2) professional-technical, 3) digital, 4) communicative, 5) personal-motivational), with appropriate varieties that detail the content of each group. During the survey, employers prioritized each type of skill and assessed the level of proficiency of employees. The difference in the priority of a given skill for the employer and the assessment of the employees’ level of proficiency in it indicated the size of the gap.

Figure 3. Matrix of gaps in labor skills in the labor market of the Lviv region by the criterion of discrepancy between the priorities among employers and the level of skill proficiency among employees

| («-» – lack of, «+» – excess)                                                                      |                |              |              |              |
|----------------------------------------------------------------------------------------------------|----------------|--------------|--------------|--------------|
| Gaps in professional-functional skills                                                             | Average rating | Businesses   |              |              |
|                                                                                                    |                | small        | medium       | large        |
| Work with documentation                                                                            | <b>-0.60</b>   | <b>-0.34</b> | <b>-0.79</b> | <b>-0.71</b> |
| Sales                                                                                              | -0.40          | -0.24        | <b>-0.50</b> | <b>-0.53</b> |
| Foreign language                                                                                   | -0.06          | -0.25        | +0.03        | +0.13        |
| Work with client                                                                                   | <b>-0.52</b>   | <b>-0.55</b> | <b>-0.48</b> | <b>-0.55</b> |
| Gaps in professional-technical skills                                                              | Average rating | Businesses   |              |              |
|                                                                                                    |                | small        | medium       | large        |
| Working with technical documentation (drawings, diagrams)                                          | -0.17          | <b>-0.28</b> | -0.05        | -0.27        |
| Working with tools                                                                                 | -0.15          | +0.09        | -0.27        | <b>-0.47</b> |
| Working with equipment                                                                             | <b>-0.32</b>   | -0.15        | <b>-0.43</b> | <b>-0.42</b> |
| Working with materials                                                                             | +0.33          | +0.37        | +0.27        | +0.34        |
| Gaps in digital skills                                                                             | Average rating | Businesses   |              |              |
|                                                                                                    |                | small        | medium       | large        |
| Proficiency in computers and office software                                                       | <b>-0.84</b>   | <b>-0.37</b> | <b>-1.17</b> | <b>-1.03</b> |
| Working with CRM (Customer Relationship Management) and ERP (Enterprise Resource Planning) systems | <b>-0.52</b>   | <b>-0.41</b> | <b>-0.61</b> | <b>-0.50</b> |
| Working with databases                                                                             | -0.30          | -0.22        | -0.39        | -0.21        |
| Web technologies and programming                                                                   | +0.07          | -0.01        | +0.18        | -0.08        |
| Gaps in communicative skills                                                                       | Average rating | Businesses   |              |              |
|                                                                                                    |                | small        | medium       | large        |
| Clear oral and written communication                                                               | <b>-0.39</b>   | <b>-0.26</b> | <b>-0.47</b> | <b>-0.50</b> |
| The ability to ask questions                                                                       | -0.07          | -0.03        | -0.19        | +0.18        |
| The ability to listen and argue effectively                                                        | -0.12          | +0.07        | <b>-0.31</b> | -0.05        |
| Forming non-conflict communication                                                                 | +0.22          | +0.16        | +0.28        | +0.24        |
| Gaps in communicative skills                                                                       | Average rating | Businesses   |              |              |
|                                                                                                    |                | small        | medium       | large        |
| Clear oral and written communication                                                               | <b>-0.39</b>   | <b>-0.26</b> | <b>-0.47</b> | <b>-0.50</b> |
| The ability to ask questions                                                                       | -0.07          | -0.03        | -0.19        | +0.18        |
| The ability to listen and argue effectively                                                        | -0.12          | +0.07        | <b>-0.31</b> | -0.05        |
| Forming non-conflict communication                                                                 | +0.22          | +0.16        | +0.28        | +0.24        |

Source: own elaboration.

## Ways to bridge gaps in workforce skills: “OPLICH” Regional Partnership

Based on the results of a survey of employers, focus groups and in-depth interviews with IDP's and employers, the following priority areas for overcoming imbalances in the labor market of the Lviv region were identified: 1) the use of modern equipment

and technologies for high-quality training and development of solid skills of the labor force; 2) professional development of teachers of educational institutions; 3) improving cooperation between employers and educational institutions in the preparation of educational and professional programs and wider involvement of professional practitioners in work in the vocational education institutions and higher education institutions; 4) improving cooperation between employers and educational institutions in terms of industrial practice and employment of graduates; 5) improving retraining of persons registered in the civil service employment in the Lviv region as unemployed.

In solving the problem of imbalances in the labor market, overcoming gaps in skills, the social partnership of its participants, namely, employers, educational institutions, the state Employment Service and its territorial centers, and local self-government bodies, is important. Lviv region is a good example of cooperation from universities and training centers with the state and business to expand opportunities for retraining the labor force. At the same time, according to the survey results, only a third of respondent enterprises cooperate with educational institutions in solving personnel problems. Officially, 11% of respondents cooperate, and informally – every fifth. To increase the effectiveness of social partnership in the field of employment, it is important to have specialists, the ability to ensure the development of cooperation programs and effective communication between partner parties, the introduction of short-term courses for mastering new professions, which allows people to quickly integrate into the region's economy.

Based on the results of a comprehensive study of all the above-mentioned problems, we formulated packages of proposals with answers to questions about: 1) target groups of participants in programs of retraining, advanced training of the labor force in the Lviv region labor market; 2) content of programs of retraining and advanced training of the labor force; 3) activation of the processes of official employment of IDPs; 4) booking of employees under martial law and amendments to the law of Ukraine "On employment of the population", etc.

Generalization of the results of employer surveys, group interviews, and focus groups allowed us to justify the typical structure of professional development and retraining programs for employees, which includes the following mandatory content modules: 1) Psychological, 2) Professional, 3) Digital literacy, 4) Business communication.

The Lviv Regional Employment Partnership "OPLICH", created within the framework of the project "Inclusive labor market for creating jobs in Ukraine", became an important institution in the implementation of initiatives of the authorities, scientists, and the public in solving the problems of developing the regional labor market in Lviv region. The partnership includes representatives of public organizations, state authorities, associations of entrepreneurs, educational institutions and two

territorial communities. The partnership was created to help meet local employment needs, support and develop entrepreneurship, improve the professional competencies of the labor force, and promote employment of key groups of the population.

The results of the study of imbalances in the labor market of Lviv region, and recommendations for overcoming them have become an information, analytical, and scientific component for improving regional policies in the labor market of Lviv region, and specific solutions for their implementation. In 2024, the Lviv Regional Employment Partnership “OPLICH” implemented a number of initiatives through the organization of such events:

- Competition among relocated and local business entities (competition budget USD 240,000; 10 relocated businesses took part; 110 additional jobs were created).
- Business planning competition at the School of Women’s Startup Development (course “Start and improve your business”, grant support for winners – up to USD 3,000; 127 participants; 27 winners; 10 of them are IDPs).
- Training to support vulnerable groups in the regional labor market (242 participants), training (28 local residents and 51 IDPs);
- Assistance in promoting employment through training in working professions (79 participants; professions: CNC machine operator, administrator, seamstress-designer, commis chef).

## Strategic priorities for improving the sustainability of the regional labor market in war conditions

Promising areas of development of the regional labor market of Lviv region are a set of quite different initiatives and tools that local authorities and the government implement for the safety and development of regional labor markets: from retraining and training programs for IDPs, support for small and medium-sized businesses, to simplification of employment procedures, attracting international grants to support jobs.

In general, adapting businesses to new conditions requires a comprehensive approach that includes strategic planning, innovation, close interaction with the education sector, and support from the state and international organizations. Successfully overcoming these challenges will create a more sustainable and competitive economic system that can effectively respond to changes in the external environment. To solve the problems of integration of IDPs in the labor market of Lviv region, it is important to develop a strategy that will include improving the professional orientation system, supporting small and medium-sized businesses, expanding opportunities for self-employment and developing psychological adaptation programs. The implementation of such initiatives will not only effectively use the labor potential of displaced persons, but also contribute to the overall economic growth of the region.

In terms of assistance to IDPs, it is important to step up not only support for the launch of new businesses by displaced persons, but also infrastructure development. Lviv region has stepped up the construction of housing for displaced persons, the creation of new industrial parks and technology parks to attract investors. Access to the labor market, its infrastructure and opportunities for economic integration of IDPs should now be improved. This will set new challenges for local communities, where social adaptation programs are implemented (in particular, psychological support, language courses, measures to develop local social activity), and the participation of displaced persons in local self-government, which contributes to their rapid integration. An interesting idea is the introduction of electronic services for IDPs at the regional level, which would simplify access to administrative services, promote transparency in the distribution of humanitarian aid and improve coordination between state institutions.

A successful regional sustainability policy in the Lviv region is based on the interaction of various sectors of society, strategic planning and rapid response to challenges. Further development of these areas will create a more sustainable economy and society that can adapt to the difficult conditions of wartime. The war has become a powerful catalyst for structural changes in the labor market. In many cases, people are forced to change their field of activity, adapt to new working conditions, undergo additional training, or even create their own businesses. Accordingly, the debate about which approaches are most effective in promoting such adaptation is becoming extremely relevant.

Another important aspect worth paying attention to is the role of government and international initiatives in regulating the labor market and promoting employment stability. Despite considerable efforts to establish employment programmes for IDPs, their effectiveness remains a matter of debate. Many researchers and practitioners express concern about the lack of coordination between different levels of government, the lack of clear mechanisms for monitoring the effectiveness of programs, and problems with funding initiatives. In addition, an important issue is the prospect of developing new sectors of the economy that can become growth points for the region. Due to digitalization and global trends that intensified during the war, information technology, creative industries, remote work, and social entrepreneurship are of increased interest. Lviv region has a significant potential for the development of these areas, but systematic measures are needed to support innovation, training and create incentives for business. Social challenges in the labor market are relevant in war conditions, in particular the problem of psychological exhaustion of employees, the impact of instability on motivation to work, and the integration of various social groups. In this context, effective models of corporate social responsibility, social entrepreneurship, and community initiatives play an important role in supporting both employees and businesses.

Thus, the discussion about the shortage of labor skills in the Lviv region during the war is multifaceted and requires an interdisciplinary approach. Further research may focus on a detailed analysis of the effectiveness of specific support programs, the long-term consequences of structural changes in the labor market, and the development of new models of economic adaptation that will meet the challenges of our time.

## Conclusions

The results of the study confirm that the lack of labor skills in the Lviv region is a complex problem that has numerous economic and social consequences. The war exacerbated these problems, causing significant changes in the labor market and creating additional difficulties for businesses. The main factors influencing the labor shortage are the outflow of personnel abroad, mobilization, and the discrepancy between the qualifications of IDPs and business needs.

To overcome these challenges, it is necessary to implement comprehensive measures, including retraining and training programs, stimulating the employment of IDPs, as well as state initiatives to support businesses. Local authorities should cooperate more actively with international partners to attract financial assistance and expert support.

It is important to implement long-term strategies for the development of the labor market that will take into account not only the current needs of the economy, but also possible challenges of the future. These strategies include creating conditions for the return of qualified personnel, developing the digital economy, stimulating entrepreneurship and increasing labor mobility within the region.

Thus, regional sustainability and economic stability of the Lviv region will depend on effective labor market management, business adaptation to new conditions and expanding opportunities for human capital development.

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## *Workforce skills gaps analysis under security challenges: business needs and regional resilience – a case study of Lviv region during wartime*

### *Abstract*

This study investigates workforce skills gaps amid security challenges caused by Russian military aggression against Ukraine, aiming to identify critical competency deficiencies for enhancing regional economic resilience. The research employed a triangulated methodology combining desk research, quantitative employer surveys, and qualitative focus groups with employers and internally displaced persons.

Findings reveal significant transformations in the Lviv region's labor market due to mobilization, forced migration, and business relocation. Most employers identify the largest gaps in professional-functional and professional-technical skills. Increased competition, accelerated digitization, and heightened security risks have generated growing demand for client orientation, document management, and business security competencies. Digital skills gaps (computer and office software proficiency, CRM and ERP systems skills) closely follow professional-functional deficiencies. These gaps directly impact regional economic security and resilience.

Based on these findings, we propose targeted recommendations for: identifying priority groups for retraining; determining professional groups requiring qualification improvement; developing security-focused retraining programs; accelerating employment processes for displaced persons; and legislative amendments to strengthen labor market resilience under wartime conditions.

**Keywords:** labor market security, skills gaps, workforce resilience, economic security, wartime employment, internally displaced persons, regional development, Lviv region, Ukraine

