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DETERMINANTS OF DEMAND FOR YOUNG PROFESSIONALS WITH TERTIARY EDUCATION AMIDST MIGRATION RESULTING FROM THE WAR IN UKRAINE

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Abstract

The **purpose** is to identify the key employability determinants for young Ukrainian migrants with tertiary education in light of the changing labour market conditions caused by the war.
Design/methodology/approach. This paper conducts a structural and dynamic analysis of market changes in Ukraine and the countries hosting Ukrainian refugees, namely Poland and Germany, due to the war. The key determinants influencing the demand for professionals with tertiary education are identified through an analysis of job vacancies on employment websites in Ukraine, Poland, and Germany.

Findings. Amidst a shrinking labour force in Ukraine due to migration and a shortage of vacancies, there is a noticeable increase in employability in the labour markets in Poland and Germany. The growth is particularly evident among females and in the service sphere, especially within the IT sphere. An analysis of employment websites in Ukraine, Poland, and Germany has identified the key determinants of demand for young professionals. The primary employability characteristics of Ukrainian migrants include professional skills, particularly digital skills relevant to specific jobs, as well as soft skills. These requirements differ by profession and country. In Poland, there are lower requirements for formal recognition of higher education diplomas in certain professions. However, employers, as in Germany, significantly emphasise on professional experience.

Originality. Under the conditions of war and significant structural transformations in the labour markets in Ukraine and the countries hosting Ukrainian migrants, this study investigates the current employability changes among job seekers. Our research contributes to the understanding of labour markets by identifying key determinants of professional success for migrants with tertiary education, which can also act as an obstacle to integration into the host countries' labour markets if the required competencies are lacking.

Keywords: employment, employability, labour market, migration, tertiary education, youth.

JEL codes: F22, J23, J24, J63.

Introduction

The war in Ukraine has led to significant migration, which has not only altered the living conditions and prospects of the population but also essentially changed the macroeconomic dynamics of both Ukraine and host countries. According to the European Council, 4.2 million refugees from Ukraine have registered for temporary protection in the European Union; the biggest number of refugees has hosted Germany (1 235 960 people) and Poland (955 110) (European Council, 2024). Even before russia's full-scale invasion, Ukraine had experienced negative demographic changes due to the occupation of part of

its territory, declining natural reproduction rates, and high levels of labour and educational migration. The war has exacerbated these tendencies regarding migration, territorial occupation, and involvement in hostilities. As of July 2022, according to the Ministry of Defence, over 1 million people were involved in the security and defence sector, with 700,000 mobilised into the Armed Forces (Forbes Ukraine, 2024). In the context of war, precise data on the resident population and the size of the armed forces are not disclosed; however, it is evident that a significant number of individuals have been removed from peaceful life and economic activity. Additionally, gender and age-related changes are significantly impacting the labour market. In particular, the migration patterns of Ukrainians during the war show that only females and males of non-conscription age are allowed to cross the country's borders without restrictions. Consequently, these restrictions, along with the predominantly male participation in hostilities, are affecting economic activity in both Ukraine and the countries hosting Ukrainian refugees.

Youth with tertiary education, as a category of migrants who can significantly impact economic development in both donor and recipient countries, are a focal point in studies on migration and the employment opportunities for young migrants (Aliyev et al., et al., 2023; Farashah et al., 2023; Higgins et al., 2023; Liu-Farrer & Shire, 2021; Mozolová and Tupá, 2024; Stülb & Dzhvarsheishvili, 2023; Vasyltsiv et al., 2024; Voznyak et al., 2024;). Young people need similar employability opportunities as the local population to successfully compete for jobs (Potuzakova & Bilkova, 2022). The migration of Ukrainians, in addition to its important humanitarian aspect, positively influences the European labour market, as emphasized by many researchers (Angenendt et al., 2023; Brücker et al., 2023; Chugaievska & Wisła, 2023; Gromadzki & Lewandowski, 2022; Kersan-Škabić & Blažević Burić, 2023; Kohlenberger et al., 2023; Kochaniak et al., 2024; Kubiciel-Lodzińska & Solga, 2023; Melnychenko et al., 2022; Pavlovskyi et al., 2024; Zyzik et al., 2023). However, in the context of structural changes in labour markets, including those influenced by forced mass migrations, there has been an increased necessity to study the determinants of demand for young professionals with tertiary education. This includes the recognition of learning outcomes obtained in a different country and the identification of the most significant employability determinants based on employers' assessments. Based on primary data monitoring from both sides of the border, such assessments are crucial for understanding the differences and specific demands in Ukraine and host countries. In addition, these insights are vital for developing a future educational policy that would facilitate the genuine integration of Ukraine into the European Union, recognizing that successful competition and employment opportunities also shape broader life prospects.

Today, a massive migration of young Ukrainians abroad is occurring in the context of unprecedented support from EU governments, which have created significantly better conditions for integrating Ukrainians into new environments than those available before the full-scale war. These favourable conditions for young Ukrainian migrants may catalyse close alignment between labour and educational markets. In light of this, our study aims to identify the primary employability determinants for young Ukrainian migrants

amid labour market changes due to the influence of war. Comparisons are made between Ukraine and two other countries – Poland and Germany – which have hosted the largest number of Ukrainian refugees. The empirical foundation of the study is based on official statistical data from Eurostat (Eurostat, 2024a, 2024b) and data from employment websites in Ukraine, Poland, and Germany. By monitoring job vacancies that require a university degree, we collected and processed a substantial amount of primary data from job advertisements detailing the competencies sought in applicants. The findings contribute to the research on factors influencing the professional success of migrants with tertiary education and potential integration obstacles due to competency deficit.

1. Literature review

The full-scale invasion in Ukraine has triggered a new wave of forced migration to UE countries, with prolonged hostilities prompting both Ukrainian refugees and host countries to seek ways how to integrate into new societies. One of the primary challenges remains the employability of economically active migrants, as this type of migration has created both opportunities and challenges.

Among the opportunities for host countries, the researchers identify the potential to address the growing issue of personnel shortage. In Germany, which has received a large number of Ukrainian refugees, the shortage of skilled workers has sharply increased, especially in the social and education sectors, health and care, construction and skilled crafts, information technology, and jobs in science, technology, engineering, and mathematics. Additionally, EU member states are experiencing aging and shrinking populations. Such tendencies have long compelled governments to view the recruitment possibilities of workers from third countries as a strategically important initiative (Angenendt et al., 2023).

Such skilled workers deficit coverage is supported by researchers who support the importance of including international high-skilled migrants in national labour markets (Schäfer & Henn, 2023). Such acts have proved positive consequences for the economies of recipient countries in kind of economic growth and country's resilience (Mishchuk et al., 2024; Oliinyk et al., 2022; Pyatnychuk et al., 2024), general boost of economic relations, solving of problems with workers deficit (Brücker et al., 2023; Gromadzki & Lewandowski, 2022; Kohlenberger et al., 2023), though often followed with challenges in social coverage and social integration of migrants (Chugaievska & Wisła, 2023; Kubiciel-Lodzińska & Solga, 2023; Sabary & Ključnikov, 2023; Zyzik et al., 2023). The analysed studies reveal positive consequences to be more important, which stimulates further looking for solutions for integrating migrants into a new environment, predominantly via employment. In the meantime, many skilled workers have quite high personal stimuli of looking for another country of residence, which is particularly characteristic of student migration (Aliyev et al., 2023; Artyukhov et al., 2023; Mishchuk et al., 2019). Additionally, when the migration decisions coincide with the interests of the host country, there is a widespread practice of not

only passive social migrant support but also active involvement of migrants with tertiary education and the increase of their employability. Such measures include support for their family members with employment and education opportunities, simplified conditions of residence, and employment for labour migrants (Alekseyenko et al., 2021; Petrova et al., 2023; Zhuk et al., 2023).

With the beginning of the full-scale war in 2022, there have been introduced different solutions for rapid integration of Ukrainian migrants into the EU labour market in the form of different governmental support programs such as aid in finding jobs, EU Talent Pool pilot, language instruction, professional development/internship, development of digital proficiency, free training, special aid for women, childcare. Certain states apply more advanced procedures, including simplifying approval procedures or removing specific occupational requirements, especially in healthcare (Struk, 2023).

Given the direction of migration flows predominantly to Germany and Poland, it's important to understand the objective differences in employment prospects for Ukrainian migrants in these countries. Kamyshnykova (2024) claims in her study that migration to Poland considerably simplifies the way to get a job due to geographical and cultural proximity, and language similarity. However, the lack of German language skills is the most common reason for the lower participation of Ukrainians in the German labour market. Nevertheless, favourable labour market conditions combined with integration policies facilitate access to the labour market for Ukrainian refugees in the long term. Thus, such economic links with a host country are getting stronger and more reliable.

Considering the aforementioned theoretical substantiations, one of our research tasks (***RT***) is the following:

RT1: to define how the war impacted the employment and vacancies in the labour market in Ukraine and the most attractive EU countries for Ukrainian migrants (Poland and Germany).

With the understanding of lacking official statistical data on the employment of Ukrainian migrants abroad, this task can be completed by analysing the general tendency for employment and the availability of vacancies before and after the beginning of the full-scale war.

The second research task is:

RT2: to identify the factors determining the employability of Ukrainian migrants.

To solve this, we will identify the primary characteristics of employability, typical of all job seekers today, and predominantly of migrants in new environments.

Thus, employability as a person-centred construct represents individual characteristics that promote the prospect of employment, such as human capital, social capital, and career identity (Caballero et al., 2020; Farashah et al., 2023). Its objective understanding can be supplemented by perceived employability, reflecting external structural factors that affect the chance of employment (Farashah et al., 2023; Lulewicz-Sas et al., 2022).

Employability is investigated more profoundly along with the concretization of hard and soft skills. Many researchers make universities most responsible for forming a competitive

graduate, whose competencies will address the needs of the labour market. Such ideas are voiced by Goulart et al. (2022), Petrova et al. (2023), and Tight (2023). However, there are some warnings that university education should not become a "wasted investment" (Lauder & Mayhew, 2020), when the education quality will not ensure the necessary skills. These researchers do not negate the role of soft skills but stress the higher importance of professional skills and competencies ensuring the productivity of a future worker and, respectively, the competitiveness of a job seeker.

Cheng et al. (2022), Finley (2021), and Karaca-Atik et al. (2023) draw attention to the development of soft skills with an emphasis on the need for developing teamwork, communication through writing and speaking, critical thinking, problem-solving, initiative, and self-direction, cross-cultural skills. In the meantime, from the standpoint of stakeholders, Cheng et al. (2022) think that the government prioritises the development and accreditation of knowledge and vocational skills, and employers stress soft skills and attitudes.

Most researchers find both professional (hard) and soft skills crucial for employability, e.g. professional knowledge and readiness to develop personally (Brooks et al., 2020; Caballero et al., 2020), field knowledge, experience in the field, leadership and authority, willingness to take on extra work (Lisá et al., 2019), knowledge, digital skills, social and emotional skills (Farashah et al., 2023; Goulart et al., 2022); English language, education, education level, culture and religion, job readiness (Bajboj, 2023). Liu-Farrer & Shire (2021) stress that labour migrants, except for professional competencies, should know the logic of national labour markets, and have institutionally and culturally specific skills. Zyzik et al. (2023) empasise the need for knowledge of differences in legal systems. The studies of the post-pandemic time draw attention to digital skills that are important for both the search for and selection of successful applicants for jobs, and for performing professional tasks (Bilan et al., 2023; Kovacs & Vamosi Zarandne, 2022; Wübbelt & Tirrel, 2022). The digital skills become more and more important due to the steep development of intelligent machines and appropriate labour market changes (Ključnikov et al., 2023).

To increase the employability of Ukrainian migrants, the issue of entering the labour market in host countries successfully has become crucial via the development of language skills and recognition of skills and qualifications (Brücker et al., 2023; Honorati et al., 2024; Gromadzki & Lewandowski, 2022; Higgins et al., 2023; Kubiciel-Lodzińska & Solga, 2023; Kohlenberger et al., 2023; Luděk et al., 2023). If these employability components are not insured, the typical consequences are unemployment and forced employment of migrants in poorly paid non-qualified, or low-qualified jobs or precarious positions.

Considering the findings obtained by other researchers, we will test the following hypotheses within ***RT2*** in the empirical part – the key employability components (found in over 50% of the vacancies) for young specialists in the labour markets in Ukraine, Poland, and Germany are as follows:

H1: professional competencies evidenced by the higher education diploma;

H2: professional competencies evidenced by the job experience;

H3: profession-related digital competencies;

H4: industry-related legal competence;
H5: language competence;
H6: soft skills.

2. Methodology

To perform ***RT1,*** we used statistical information from European Statistical Office, Eurostat, on employment and vacancies in EU countries, including Poland and Germany, starting from the fourth quarter of the year 2021 (Q4 2021) (before the full-scale russian invasion and mass migration from Ukraine, respectively) to the last available quarter during the war – the first quarter of the year 2024 (Q1 2024).

The labour market characteristics that have changed most visibly under the influence of migration from Ukraine and have respective statistical proof are:

- employment (15 years or over), including:
  - female employment;
  - employment in the service sector;
- the number of vacancies.

Female employment is chosen because of the gender restrictions of emigration from Ukraine in an economically active age and a significantly higher flow of female migrants, respectively. Employment in Services includes the employment of IT specialists migrating actively on the first days of the war when the restrictions to leave the country were still not applied, and IT companies ensured mass evacuation of their employees. Due to such conditions, according to the statistical report estimates conducted with the participation of the Ministry of Digital Transformation of Ukraine and USAID, as of March 2022, up to 57,000 IT specialists accounting for about 20% of their quantity at the end of 2021, left the country because of the full-scale invasion (IT Research Resilience, 2022). That is why the representatives of this profession could significantly change the supply in the EU labour market.

To make comparisons for Ukraine, the database of the State Statistical Service of Ukraine is used, where there is only the data for the fourth quarter of 2021 available, but further information on the employed is not published due to martial law and the limited possibilities to collect it.

The dynamics of the EU countries' vacancies are analysed for the analogue period, relying on the data from the European Statistical Office, Eurostat. Compared to the EU data, the statistical data in Ukraine was not collected. That is why we analysed the advertisements published on the private advertisement portal Work.ua about workers/job search.

In the data processing for ***RT1***, the traditional methods for statistical analysis are employed: tabular, graphical, and relative measures.

Within ***RT2***, to test the hypotheses on the employability constituents for young Ukrainian migrants with tertiary education, the authors narrowed the analysis to four professions. The choice was influenced by the fact that these professions are in high demand in the

labour market in Ukraine and are popular among university applicants, and thus illustrate the educational (and professional, as well) inclinations of young specialists. To increase the search possibilities on the employment websites in three countries (Ukraine, Poland, and Germany), there were used generalisations with keywords reflecting the essence of the profession:

– "Personnel/Human Resources Management, Labour Resources";
– "Construction, Architecture, and Design";
– "Programming";
– "Marketing, Advertising, and PR."

Thus, we have addressed the most sought-after professions from the perspective of Ukrainian students who can be or are migrants already. Additionally, we considered the potential for economic development by accounting for the saturation or shortage of specialists in critical fields necessary for economic recovery (such as Construction) and the IT sector as an industry with a significant impact on creating high-added value.

The information source for analysing the employer requirements for young candidates (without job experience) in Germany was the private employment portal https://www.stepstone.de/de, which covered all professions, industries, types of enterprises, and regions in Germany. It also holds a leading position in the 2024 rankings of job boards in Germany, as to many market analysts.

Therefore, among the job advertisements published on this portal, those with the filters "no/without experience" and "published within the last seven days" were selected and analysed, focusing on the following professional directions:

- "Human Resources" (29 out of 199 results obtained on 03.05.2024; the remaining postings were excluded as they were submitted by recruitment agencies and contained duplicate vacancies – a note applicable to all job advertisements on internet job boards analysed in this study),
- "Marketing" (22 out of 752 obtained on 03.05.2024)
- «Architect» (22 out of 797 obtained on 05.05.2024)
- «Software Developer» (24 out of 3891 obtained on 06.05.2024).

Requirements for young candidates from Polish employers were analysed based on the portal data https://www.pracuj.pl/, considered the most popular in Poland, as it offers a wide range of vacancies and convenient search filters.

For advertisements published on this server, filters "young specialist" and "published within the last seven days" were applied, and the advertisements with job vacancies for such industries were selected and analysed:

- "Human Resources / Personnel" (24 out of 234 obtained on 29.04.2024),
- "Marketing" (24 out of 231 obtained on 29.04.2024)
- "Construction, Architecture, and Design, Civil Construction" (22 out of 199 obtained on 30.04.2024)
- "Programming" (24 out of 167 obtained on 30.04.2024).

To analyse the requirements for higher education institution graduates, we selected the

portal Work.ua as it is intended for a broader range of candidates from different industries and allows filtering the advertisements by employers according to various parameters.

The advertisements published on this portal were filtered as "inexperienced candidates" "for the last seven days" in such professions:

- «Human Resources Management» (32 out of 222 obtained on 06.05.2024),
- «Marketing, Advertising, and PR» (25 out of 83 obtained on 07.05.2024)
- «Construction Engineer» (34 out of 37 obtained on 08.05.2024, but the filter «for the last seven days» was not applied as the number of advertisements resulted from the search was too small)
- «Programmer» (26 out of 35 obtained on 08.05.2024).

The general number of processed advertisements divided into countries and directions is shown in Table 1.

Table 1: Division of job advertisements processed to identify the employability constituents

Profession Group	Germany		Poland		Ukraine	
	Adverts, total	Selected for analysis	Adverts, total	Selected for analysis	Adverts, total	Selected for analysis
Personnel/ Human Resources Management, Labour Resources	199	29	234	24	222	32
Construction, Architecture, and Design	797	22	199	22	37	34
Programming	3891	24	167	24	35	26
Marketing, Advertising, and PR	752	22	231	24	83	25
Total	5639	97	831	94	377	117

Source: collected by authors as a result of processing advertisements on employment websites

Thus, from 29.04.2024 to 08.05.2024, we processed 6847 job advertisements from three countries and in four professional directions. Three hundred and eight original unrepeated job advertisements were selected for further analysis with the calculation of a quality share illustrating the conformity with hypotheses *H1* to *H6* in the total number of job advertisements.

3. Results

When performing ***RT1***, we received the following results. The EU labour market from 2021 to 2024 changed due to the employment increase, which can be linked to intensive migration tendencies, particularly from Ukraine. In the first quarter of 2024, the number of employed increased in the EU countries (Fig. 1) by five million persons or by 2.4%, compared to the last quarter of 2021. This increase was due to the extension of the service industry by 3.5% (particularly ICT by 10,0%), and the growth in a female share by 0.2% in the total number of the employed. Thus, considering the gender peculiarities of leaving Ukraine during the war and the employment sphere of Ukrainian migrants, where IT is a significant direction, such general tendencies reveal a considerable impact of Ukrainian migrants on the EU labour market.

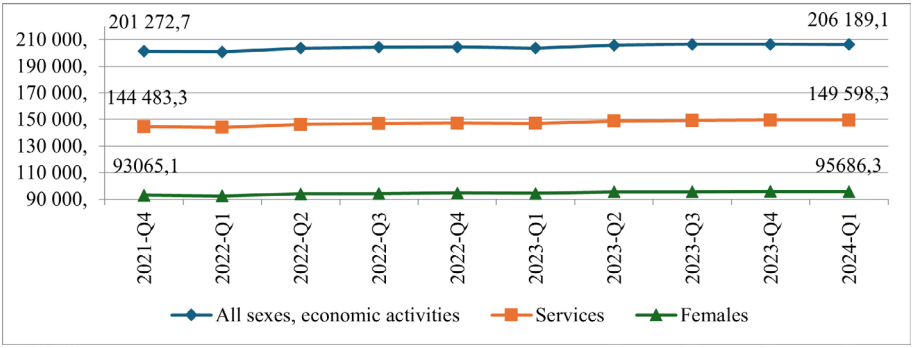

Fig.1. Employment in the EU, 15 years or over, thousand persons

Source: compiled by authors based on the Eurostat data (2024a).

Germany and Poland experienced general changes similar to those characterizing the EU labour markets, though with some differences in the growth in the total number of the employed (Fig. 2 and Fig. 3).

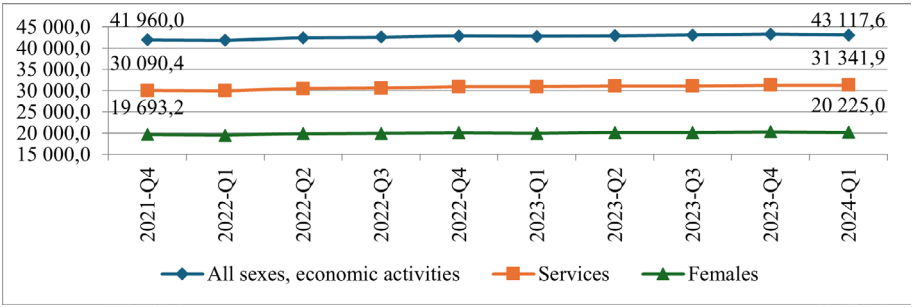

Fig.2. Employment in Germany, 15 years or over, thousand persons

Source: compiled by authors based on the Eurostat data (2024a).

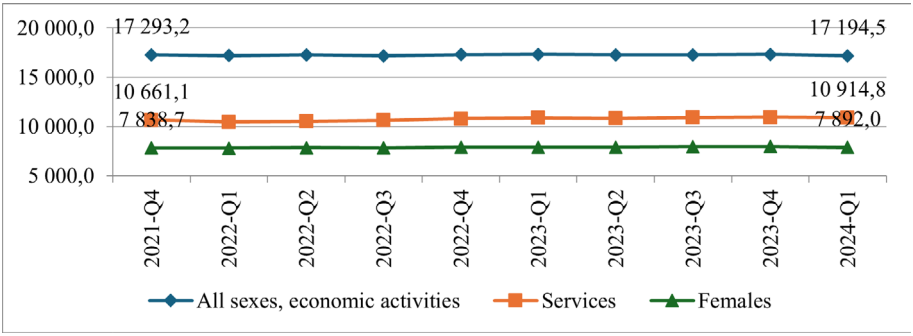

Fig.3. Employment in Poland, 15 years or over, thousand persons

Source: compiled by authors based on the Eurostat data (2024a).

The increase in the employed in Germany during the analysed period amounted to 2.8%, which exceeds the EU average of 2.4%. In this country, employment in the service sector also grew faster than the national average – by 4.2% (with the ICT sector by 14.16%). However, female employment increased at a slightly slower pace compared to the average growth in the country – only by 2.7% instead of 2.8%. Although this difference is negligible, it may indicate a predominance of males in the migrant flow to this country.

The official number of the employed in Poland decreased at the beginning of 2024 compared to the end of 2021 by 100,000 persons or 0.6%. However, the employment rate in the service industry increased, though not as much as in Germany – only by 2.4%. An exception makes up the IT sector, where the employees' number grew by 21.99%. The number of the employed females increased as well, by 0.7%.

Therefore, Germany and Poland reveal typical tendencies of the EU labour market: the increase in employment in the service industry, which, relying on the Figures, can be linked to the immigration of IT specialists as this increase in the service industry coincides with a significant increase in the IT companies' employees evacuated from Ukraine (IT Research Resilience, 2022). Another notable tendency, which developed since 2022 and coincided with the migration of Ukrainian females, is an increase in the female share of the total number of the employed in Germany, Poland, and generally in the EU.

To accurately clarify the sectoral employment differences in the EU, Poland, and Germany, the authors analysed the total growth in female and service sector employment (Table 2). It incorporates the general number of those employed in the service sector according to NACE activities (activities G-S) and separately – employment in sector J – Information and Communication.

Table 2
Rate of growth in the number of employed for 15 years and more in the EU in Q1 2024 compared to Q4 2021, %

Economic activity	European Union – 27 countries (from 2020)	Germany	Poland
Total economy	2,44	2,76	-0,57
Including females	2,82	2,70	0,68
J	***10,00***	***14,16***	***21,99***
G-S	3,54	4,16	2,38

Source: compiled by authors based on the Eurostat data (2024a).

As the Table reveals, the growth in the service sector in the EU, including Germany and Poland, is caused by a rapid employment increase in the IT sector. Additionally, the increase rate in Germany and Poland exceeds the mean European values and coincides with the number of IT migrants from Ukraine.

In the meantime, the number of employed in Ukraine during the analysed period decreased. According to the State Statistical Service of Ukraine, in Q4 2021, the employed population aged 15-70 accounted for 15296.6 thousand persons, with 14701/7 thousand persons of the able-bodied (State Statistical Service of Ukraine, 2022, p.72). Due to martial law, the current statistical information is not disclosed. However, according to the forecasts of the Cabinet of Ministers of Ukraine for 2024 – 2026, the number of those employed in economic activity aged 15-70 will amount to 12.3 million persons in 2024, i.e. by 3 million persons less than in the pre-war period (Cabinet of Ministers of Ukraine, 2023).

Amid rising employment, there is a notable tendency to a decreasing unmet labour demand, reflected in the decline of vacancies in Germany and Poland (Fig. 4). The number of vacancies slightly increased in 2022 and Q1 2023. However, the demand for workers stabilised in Q1 2024. In general, as of Q1 2024, the number of vacancies in Germany decreased by 119,000 units or 7.08%, whereas in Poland – by 25,000 units or 18.51% compared to Q4 2021.

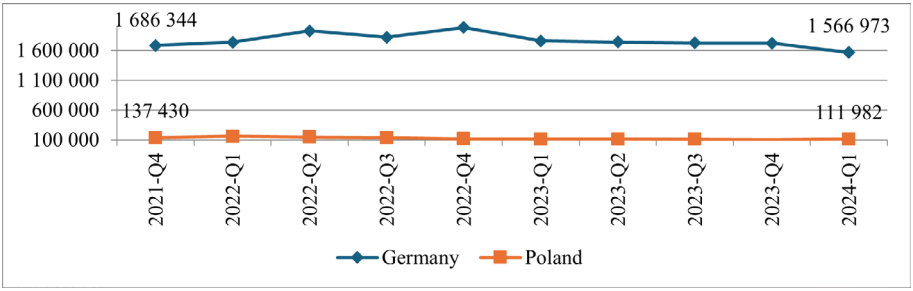

Fig. 4. Germany and Poland: Number of job vacancies, all NACE activities
Source: compiled by authors based on the Eurostat data (2024b).

During the analysed period, the share of vacancies in the total number of jobs decreased in Germany and Poland. The differences in unmet labour demand across the overall economy and the IT sector (classified as activity J) per 100 jobs are presented in Table 3.

Table 3
Number of vacancies according to economic activities in Q1 2024 compared to Q4 2021

Economic activity	Germany		Poland	
	Q4 2021	Q1 2024	Q4 2021	Q1 2024
Overall economy	3,9	3,5	1,1	0,9
J	**4,8**	**4,8**	**3,6**	**1,5**

Source: compiled by authors based on the data from Eurostat (2024b).

Despite the overall decrease in vacancies, the demand for IT professionals remains high in Germany and has slightly declined in Poland.

Meanwhile, the number of vacancies in Ukraine decreased during the period analysed. This can be corroborated by the analysis of job postings on Ukraine's largest employment website, Work.ua, as comparable statistical data in Ukraine is unavailable.

According to Work.ua, although the job market gradually recovered after a sharp decline in Q2 2022, its volume in Q4 2024 did not reach that of Q4 2022 and amounted to only 88% of the levels observed in Q4 2022 (see Fig. 5).

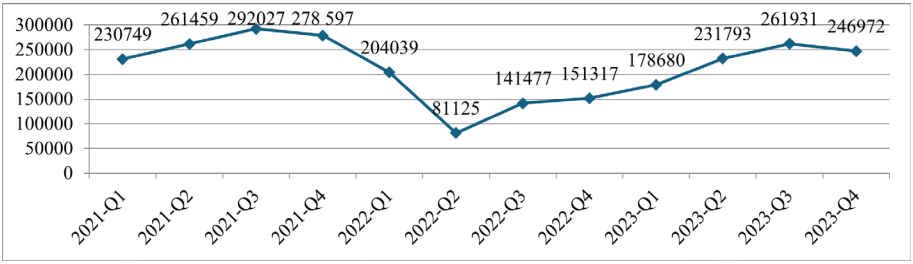

Fig.5. The dynamics of the total number of vacancies posted on Work.ua in Ukraine during 2021-2023, units

Source: compiled by authors

The most sought-after workers are for job categories such as the service sector, skilled trades, manufacturing, sales, purchasing, retail, logistics, warehousing, and foreign economic activity. The dynamics of job advertisements in these categories in Ukraine correspond to the overall trend in the total number of job advertisements.

As illustrated by the data, despite the decline in employment in Ukraine and the number of vacancies not returning to pre-full-scale war levels, Ukrainian migrants have become a significant labour resource to address unmet demand in the EU, particularly in the two

countries that have received the largest number of migrants.

To prevent the issues of migrant precariousness and employment mismatched with their skills and qualifications, migrant workers must possess the same employability characteristics as residents. Thus, to test hypotheses *H1-H6* using the methodological approach described above, we analysed job advertisements in three countries and presented the obtained results in Table 4.

Table 4

The availability of separate employability constituents by profession groups and requirements to candidates in Germany (G), Poland (P), and Ukraine (U) in April 2024, %

Competencies that are either mandatory or desirable for employment, or that provide an advantage in the employment process	Profession Groups											
	Personnel Management, Human Resources			Construction, Architecture, and Design			Programming			Marketing, Advertising, and PR		
	G	P	U	G	P	U	G	P	U	G	P	U
Professional, evidenced by a diploma of higher education or a certificate of study from a higher education institution in the relevant field	100	42	***47***	**91**	**86**	**85**	**96**	37	***80***	**55**	**50**	***64***
Professional, evidenced by experience	**69**	**83**	**53**	**50**	**55**	***94***	46	**50**	15	45	**79**	24
Digital (including those related to specialised software)	**69** (24)	**79 (50)**	28 (13)	**50** (45)	**91 (77)**	***68 (65)***	**100 (100)**	**100 (100)**	**85 (85)**	**82 (64)**	**83** (42)	48 (36)
Legal	24	33	10	23	0	41	0	0	0	0	0	0
Language (foreign language)	41	**63**	25	14	23	10	**58**	**58**	**50**	**68**	**83**	16
Soft skills*	**97**	**92**	**63**	**95**	**86**	**59**	**63**	**63**	46	**82**	**83**	**52**

Notes:

1. **Bold** indicates the proportion of vacancies with specific requirements of 50% or more; italic denotes the proportion of vacancies with certain requirements in Ukraine that is higher than in at least one other country.

2. *The most common soft skills by professional groups are as follows: 1) "Personnel management, human resources": time management and multitasking; communication skills and high personal culture; 2) "Construction, Architecture, and Design": analytical thinking, result-oriented work, creativity, self-organisation; 3) "Programming": responsibility, independence, multidimensional and analytical thinking, willingness to develop; 4) "Marketing, Advertising, and PR": organisational skills, creativity, communication skills, client and demand orientation; 5) all professions: teamwork.

Source: calculated by authors

The analyses of job advertisements from employers in Germany, Poland, and Ukraine revealed that the most thought-after qualities for a young candidate (a recent graduate or current university student) applying for a position in the category of "Personnel Management, Human Resources" are work experience and soft skills (examples could be provided). Furthermore, in Germany, a university degree is required from candidates in 100% of cases. In Poland and Germany, proficiency in office software is required in 79% and 69% of cases, respectively, while in Poland, there is also a demand for skills in specialised software. Fluency in a foreign language is considered an advantage for candidates in Poland, whereas legal competencies are not deemed important in any of the analysed countries.

For young candidates applying for positions in the "Construction, Architecture, and Design" category, a higher education diploma or official documentation of enrolment in a university is essential in all countries (91% in Germany, 86% in Poland, and 85% in Ukraine), as are soft skills. Candidates will also benefit from work experience (as indicated in 50%, 55%, and 94% of advertisements) and digital competencies (50%, 91%, and 68% of advertisements), especially the ability to work with specialised software (77% in Poland and 65% of advertisements in Ukraine)

Knowledge of specific programming languages is required in 100% of Polish and German job advertisements and 85% of Ukrainian job advertisements related to programming. In Germany and Ukraine, candidates must have a university degree or be enrolled as students in a relevant field. Unlike in Ukraine, soft skills (63%) and fluency in a foreign language (58%) are advantageous for programmers in Western Europe. In all countries, work experience in programming is not highly valued (50% of advertisements in Poland), and legal competencies are not considered important.

For marketers, advertisers, and PR professionals, the most critical requirement in all analysed countries is professional competence, as evidenced by a diploma or student status (55% in Germany, 50% in Poland, and 64% in Ukraine), as well as soft skills (82%, 83%, and 52%, respectively). Unlike in Ukraine, digital competencies and fluency in a foreign language are important for employment in Germany and Poland. For marketers in Poland, 79% of job advertisements require proof of relevant work experience.

Thus, people from different professional groups frequently need soft skills, digital literacy, professional knowledge evidenced by university diplomas/degrees or student status certificates in a relevant field, and evidenced work experience for employment in their respective industries across various European countries. Fluency in a foreign language (in addition to the official language of the country of employment) is required for candidates

applying to certain professional groups (such as programming or marketing). Legal competencies are generally insignificant for most professions indirectly related to law.

Consequently, the requirements for university diplomas/degrees or student status certificates imposed by employers in Ukraine are stricter than in Poland but less stringent than in Germany. On the one hand, this pushes young people of student age to seek opportunities in Poland, and, on the other hand, it encourages them to obtain higher education in Ukraine, intending to emigrate to Germany if they have the necessary language proficiency.

4. Discussion

The results indicate that, amid the war in Ukraine, the migration of the Ukrainian population has helped address some labour market imbalances within the EU, particularly in Germany and Poland, which have received the largest number of migrants. These findings align with those of other scholars (Brücker et al., 2023; Chugaievska & Wisła, 2023; Gromadzki & Lewandowski, 2022; Kohlenberger et al., 2023; Kubiciel-Lodzińska & Solga, 2023; Zyzik et al., 2023). However, our study identifies a significant sectoral characteristic: Ukrainian migrants have become a substantial resource for filling vacancies in the service sector, especially in IT, where growth rates have been significantly higher than the economy's average and have coincided with the emigration of IT specialists. This intellectual migration, primarily affecting the youth (the average age of an IT specialist in Ukraine is 31 years old (IT Research Resilience, 2022)) poses a dangerous trend for Ukraine in terms of losing intellectual capital, as highlighted in other studies as well (Chugaievska & Wisła, 2023; Mishchuk et al., 2024; Oliinyk et al., 2022). Combined with the active migration of women, who are successfully integrating into the host countries' labour markets, these trends exacerbate the risks to the demographic regeneration of Ukraine.

At the same time, the ongoing war and associated dangers will continue to push people out of Ukraine, at least among groups for whom emigration is unobstructed. Furthermore, a large number of Ukrainian migrants are already abroad, and their prospects for returning home are becoming increasingly uncertain with each passing year of the war. Therefore, the issue of employment and the analysis of factors affecting the employability of young Ukrainian migrants remain relevant. By selecting professional groups that have been most popular among Ukrainian students in recent years – who are therefore graduates or potential graduates (in the case of distance learning in Ukraine during emigration, which has become a widespread trend during the war) – we tested hypotheses regarding factors important for their employment from the employers' perspective. Our findings partially confirm hypotheses *H1* and *H2* regarding the importance of professional skills, formal (such as holding a diploma), and those evidenced through work experience. Despite some variations across professions, the strictest requirements for university education remain in Germany, highlighting the ongoing issue of the recognition of university diplomas/degrees abroad, aligning with the conclusions of studies by Angenendt et al. (2023), Honorati

et al. (2024); Gromadzki & Lewandowski (2022); Higgins et al. (2023), Kubiciel-Lodzińska & Solga (2023); Kohlenberger et al. (2023). Regarding *H2*, there is a notable emphasis on work experience in Poland; in certain professions, such competencies are valued more highly than formal education, which corresponds with the findings of Finley (2021).

We can consider *H3* fully confirmed: digital competencies are now becoming relevant for every specialist position, which fully supports the ideas of Farashah et al. (2023), Goulart et al. (2022), Struk (2023). The only exceptions are two professions in Ukraine, which can be more closely attributed to the imbalance in the labour market during the war and the lack of relevant vacancies.

H4, however, was not confirmed, which underscores the relevance of legal competence only for professions directly associated with legal knowledge, such as lawyers and accountants, as noted, e.g., in the study by Zyzik et al. (2023).

In testing *H5*, language competence was partially confirmed – primarily for the labour markets for marketers and IT specialists, who often collaborate with foreign companies and work in international teams, a common practice in IT, where a significant portion of the workforce is remote. The fact that language competencies (at least knowledge of the host country's language) are not always required in Germany and Poland can be linked to the presence of a large number of Ukrainian employees in many companies. As a result, in fields such as HR and construction, specialists in these positions do not always require a deep knowledge of the host country's language if a company already employs Ukrainian workers. However, our findings somewhat contradict the importance of language competence as a component of employability identified in some studies (Angenendt et al., 2023; Petrova et al., 2023). At the same time, we believe that language competence and efforts by countries to foster it, such as in Germany, are crucial for successful integration in the host country (not just in the labour market) and are an important competitive advantage for future career development in the workplace, as also emphasised by Aerne & Trampusch (2023), Angenendt et al. (2023), and Pecoraro & Tani (2023).

As expected, soft skills were found to be in demand, fully confirming *H6* – the figure of 46% for IT specialists in Ukraine is considered close to 50%, and the margin of error may reflect the decline in official vacancies for this profession in the Ukrainian IT market during the period analysed.

5. Conclusions, limitations, and directions for future research.

Based on the results of our study, we can conclude that the war in Ukraine has resulted in numerous negative consequences (humanitarian, security, economic, and demographic) for Ukraine. However, it has also created new employment opportunities for Ukrainians abroad. As seen from the EU employment and vacancy trends, Ukrainian migrants have successfully taken advantage of these opportunities, simultaneously addressing economic issues related to the imbalance of supply and demand in the EU labour market, particularly

in Germany and Poland. To increase their chances of successfully competing for higher-skilled jobs with the local population, young Ukrainian migrants, having decided to integrate into new societies for the long term or permanently, should focus on developing hard and soft skills that are in demand by employers. This is supported by the assistance currently being provided by the governments of host countries, which aligns with the personal intentions of migrants and the interests of the host countries in retaining them.

Our study faced significant informational limitations, due to the lack of necessary data on the Ukrainian labour market during the war and subjective constraints – such as the inability to cover all important economic sectors and all countries where Ukrainian refugees have settled. Other limitations are linked with similar obstacles in access to reliable statistics. Particularly, there is no rigorous data to explore the employability trends and shifts in different sectors caused directly by the immigration flow from Ukraine. Besides, there are no statistics on shifts in certain labour market segments influenced by supply of work by young people with higher education, even though the selected profession groups allow us to assume that tertiary education is required to get a job in the named sectors.

However, we proposed a research method useful for similar studies in this field. We see prospects primarily in further exploring the composition of digital skills, which have proven very important regardless of the type of activity or country of residence.

6. Scientific and practical implications

The scientific contribution of this work lies in examining the current components of employability for job seekers in the EU labour market amid the war and significant structural transformations in the labour markets of Ukraine and the countries hosting Ukrainian refugees. The proposed approach has been tested on four professional groups, resulting in the identification of the most relevant factors for professional success among migrants with tertiary education. Depending on the availability of these essential components, they cannot only be of a competitive advantage but also serve as obstacles to labour market integration in host countries when lacking the required competencies.

Therefore, the proposed methodological approach for analysing the required components of professional training can also be applied for practical purposes: by universities, to adjust their degree/study programs and enhance collaboration with businesses in developing practical skills; and by higher education governance bodies, to encourage universities to modernise educational programs and courses and to foster cooperation with non-formal education providers, as we observe that in certain fields, having a degree/diploma does not always align with the formal job requirements.

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