European Training Foundation

Big Data for labour market intelligence

LABOUR MARKET LANDSCAPING
UKRAINE

Authors: Volodymyr Sarioglo, Olexandr Cymbal

Reviewed by: Alessandro Vaccarino, Eduarda Castel-Branco

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Introduction

This report is part of the new phase (2020) of the ETF Big Data for labour market intelligence project. The report provides an overview of key characteristics of the web labour market in Ukraine and contextualises the forthcoming analysis of online job vacancies (OJVs) collected from January 2020. This is the first comprehensive report on OJVs in Ukraine. It has been prepared with the aim of exploring the feasibility of a system for analysis of demand (occupations, skills) based on data from OJVs.

Objectives and approach of the Big Data for labour market intelligence project

Governments and socioeconomic partners in ETF partner countries are unanimous on the need to develop and better use information on labour market and skills dynamics to improve the performance of education and training and the availability of qualifications and skills for society. Today, this implies engaging in innovation to change labour market intelligence (LMI).

In this context, most partner countries have been reinforcing their systems, capacities and methods to identify, analyse and anticipate demand and skills needs in a context of changing economic structures, new types of work, and rapid digital transformation of occupations and tasks.

While conventional LMI, based on regular statistics, specific-purpose surveys and qualitative methods, has gained ground in ETF partner countries, there is much room to further innovate on data sources, improve analytical capacities and modernise the formats and instruments available to visualise and disseminate insights for users (policy makers, socioeconomic partners, and education and training players).

Big Data analytics offers new opportunities to improve LMI and deliver real-time and fine-grained skills analysis and insights for users. Big Data is all around us. Big Data is characterised by volume, variety, velocity and – eventually – value. Machine learning and artificial intelligence (AI) algorithms, combined with vast computing power, anytime and anywhere, allow data science to exploit certain Big Data sources that have great potential to supplement and enrich conventional LMI; this is the case with OJVs managed by a large variety of online portals and boards.

ETF partner countries have seen a growing use of digital tools and online portals – public and private – for posting and managing job vacancies. In this context, in 2018 the ETF started an initiative aimed at exploring the potential for the application of Big Data analytics for LMI in ETF partner countries, focused on data from job vacancies announced online.

- **Phase 1** (June 2018–2019) was dedicated to creating a specific methodological guidance and disseminating it among data analysts, national statistical offices and labour market institutions.

  A key output of this phase was a short handbook published in June 2019: 'Big Data for labour market intelligence – an introductory guide' (Mezzanzanica and Mercorio, 2019). Two training workshops were conducted in 2019 to present and discuss the methodology. The thematic materials of the in-depth training workshop of November 2019 are available online[1].

[1] https://www.etf.europa.eu/en/news-and-events/events/big-data-labour-market-information-focus-data-online-job-vacancies-training

The introductory guide is aimed at statisticians, researchers, policy analysts and decision makers in the ETF partner countries who are confronted with the challenges of anticipation and dissemination of insights on the dynamics of demand for jobs, skills and qualifications. This short handbook addresses key conceptual, methodological and organisational aspects of using Big Data for LMI. It clarifies how Big Data can be used to go beyond the frontiers of conventional approaches to LMI systems and add value to established statistics.

- **Phase 2** was dedicated to starting the practical application of the knowledge discovery in databases (KDD) approach defined in the above-mentioned short handbook. The first step of the approach was tested in two countries (Tunisia and Morocco), with a feasibility study focused on the identification, analysis and ranking of web job vacancy sources. This analysis covered 16 OJV websites in Tunisia and 15 in Morocco. Based on the results of this feasibility analysis, the ETF decided to continue the analysis of OJVs in Tunisia (2019–2020) and to add Ukraine (2020) to the project.

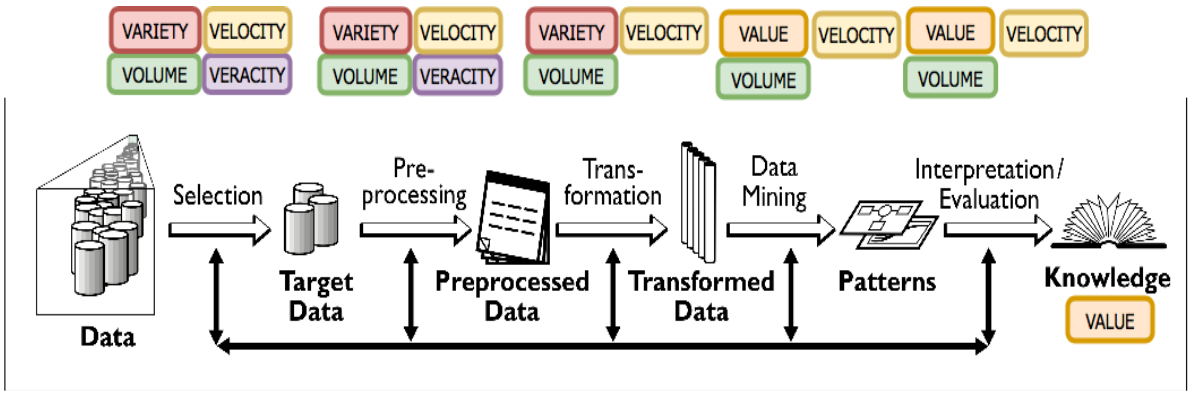
  The report of the feasibility study, focused on step 1 of the KDD approach in Tunisia and Morocco, has not been published, but can be shared with interested organisations. This report focused on the selection and ranking of data sources (OJV websites). Each internet source was evaluated and ranked in terms of the reliability of the information. This analysis took into account the vacancy publication date, the website's update frequency, the presence of structured data, and any downloading restrictions. The outcome of step 1 is the ranking of reliable web sources.

- **Phase 3**, in 2020, is the application of the approach in two countries (Tunisia and Ukraine).

To structure the process of analysing OJVs, the ETF project follows the approach, conceptual framework and steps proposed in the above-mentioned guide (Mezzanzanica and Mercorio, 2019). Cedefop applied the same process for the Skills-OVATE: Skills Online Vacancy Analysis Tool for Europe[2].

The application of the methodology in a selected number of ETF partner countries follows the process depicted in Figure 1.

Figure 1: Steps in the knowledge discovery in databases (KDD) approach



[2] https://www.cedefop.europa.eu/en/data-visualisations/skills-online-vacancies

Objective and expected results of the 2020 phase

The objective of the 2020 phase is:

To design and build a system for analysis of OJVs based on the conceptual and technical approach and instruments indicated below. Two countries are included in this phase: Tunisia and Ukraine.

The OJV analysis system should contribute to improving the LMI, generate knowledge, and enrich the ETF's work with partner countries, the European Commission and other relevant organisations. In particular, it will:

- identify and assess demand (skills, qualifications, occupations, sectors, regions);
- identify skills rates, pervasiveness of digital/hard/soft skills by occupation;
- identify emerging skills and changing skills mix;
- identify and compare indicators of mismatch;
- contribute to anticipation of future skills and jobs.

In addition, the OJV analysis system will contribute to: assessing the characteristics and drivers of the landscape of OJV websites and their use by employers and job seekers; sharpening the policy and wider questions to which OJV analysis can respond and contribute to clarifying; exploring ways to combine OJV analysis with other sources and methods for LMI, including conventional statistical data; and exploring innovation and the effective use of existing data sources and analytics powered by new data science developments and machine learning.

The planned result(s) of the project are as follows.

A. <u>OJV data analysis system with data classification and analysis, and visualisation tool</u>

1. OJV analysis system designed and operational with data analysed and classified, and results presented using visual analytics tools

The proposed design and architecture should be sustainable and scalable; should include a data pipeline that collects data periodically; and should exploit machine learning and ontology matching algorithms to classify vacancies and skills.

2. Results of data analysis and selected indicators processed and presented using visual analytics tools (for example, dashboards)

The ETF will host the website, within which the visual analytics tools can be embedded.

B. <u>Reports</u>

3. Report analysing the outcomes of implementation of the OJV analysis system in the countries

This should be a comprehensive report on the benefits and challenges of the approach to gain new and value-added insights on: coverage of demand by OJVs; characteristics of the landscape of OJV websites; use of OJVs by employers and job seekers; and types of features prioritised by employers (skills, qualifications, experience, others).

4. Final project implementation report

This should cover the main conceptual and technical questions along the steps of the approach, the recommendations and an overview of significant challenges and problem areas.

This report, compiled in April 2020, presents the results of the first stage of the project implementation, namely the landscaping of the OJV market in Ukraine, including assessment and ranking of OJV sources (web portals). The findings are based on desk research of available data sources in Ukraine (e.g. public data, research from the Ptoukha Institute for Demography and Social Sciences and other institutions) and expert opinions.

Chapter 1 presents a review of labour market dynamics in Ukraine. The focus is on the population and labour supply characteristics. Chapter 2 describes the use of the internet among the Ukrainian population for employment purpose. Attention is given to the potential of Big Data in labour migration analysis. Chapter 3 concentrates on the characteristics of the online job portal market and lists the most important job portals. The characteristics of the web vacancy portal of the State Employment Centre of Ukraine (SEC) and of private online job portals are described. The legal and regulatory framework of the functioning of job portals is analysed. The main problems of extracting data and information from the job portals are described.

1. REVIEW OF LABOUR MARKET DYNAMICS IN UKRAINE

This section is devoted to the Ukrainian labour market dynamics. Here, we summarise population characteristics and the main statistical indicators relating to the labour market (labour force participation, labour supply structure, employment structure, etc.).

The main socioeconomic indicators are presented in Table 1. We have used the most recent data, as provided by the State Statistics Service of Ukraine.

Table 1: Ukrainian socioeconomic indicators

Total population (thousands)	42 153.2
Annual population growth (%)	−0.61
Population 15–24 years (thousands)	4 035.121
Population 0–14 years (thousands)	6 481.0
Rural population (% of total population)	30.6
Total fertility rate (births per woman)	1.301
Infant mortality rate (per 1 000 live births)	7.0
Life expectancy at birth (years)	71.76
GDP per capita – PPP ($)	10 392
Annual GDP growth (%)	3.2
Total debt service (% of GNI)	11.5**
GDP (billions) – PPP ($)	436.8

**World Bank data; GDP, gross domestic product; PPP, purchasing power parity; GNI, gross national income.

Population characteristics

In 2018 the total population of Ukraine was almost 42 million (according to the State Statistics Service of Ukraine) and the population had a negative growth rate.

Table 2: Population

	2017	2018	2019
Total population (thousands)	42 584.5	42 386.4	42 153.2
Average annual increase (%)*	−0.51	−0.61	−0.55**

*per 1,000 inhabitants; **estimated

Table 3: Total population structure by age group (%)

Age	2017	2018	2019
0–14	15.4	15.5	15.4
15–59	62.1	61.6	61.2
60 or over	22.5	22.9	23.4

Labour supply characteristics

The figure for labour market participation in Ukraine is 18 155 700 in 2019, comprising 9 501 600 men (52.33% of the total) and 8 654 100 women (47.67%). The labour force participation rates for men and women are 69.9% and 57.5%, respectively, while the rates for urban and rural areas are almost equal (around 60%). In terms of educational attainment, the highest labour force participation rate is for those with a Master's degree (2018). Basic labour supply characteristics are presented in Tables 4–7.

Table 4: Labour force participation by age group (%)

Age (years)	2017	2018	2019
15–24	34.4	33.7	36.2
25–29	78.6	79.6	80.0
30–34	82.7	83.3	82.0
35–39	84.7	84.7	85.8
40–49	84.7	86.0	86.0
50–59	68.4	70.7	73.8
60–70	13.9	13.2	13.7
71 or over	:	:	2.4
15–70	62.0	62.6	63.4
15 or over	:	:	56.3

Table 5: Labour force participation by sex (aged 15–70) (%)

Sex	2017	2018	2019
Male	69.0	69.0	69.9
Female	55.7	56.8	57.5

Table 6: Labour force participation for urban and rural areas (aged 15–70) (%)

Area	2017	2018	2019
Urban	62.8	63.5	64.3
Rural	60.4	60.6	61.5

Table 7: Labour force structure by educational level (aged 15–70) (%)

Level of education	2017	2018	2019
Graduate (master's degree)	76.4	77.5	:
Undergraduate (bachelor's degree)	53.0	58.0	:
Undergraduate (junior bachelor)	67.3	67.1	:
Vocational education	69.3	69.3	:
Secondary general education – second stage	47.4	48.0	:
Secondary general education – first stage	20.3	19.6	:
Elementary education and non-degree	7.1	4.6	:

Unemployment has been decreasing over recent years among the population aged 15–24 years (18.9% in 2017 versus 17.9% in 2018) and among those aged 15–70 years (9.5% in 2017 versus 8.2% in 2019). However, the female unemployment rate has increased in the aged group 15–24.

Table 8: Unemployment rate (aged 15–24) by sex (%)

Sex	2017	2018	2019
Women	17.0	19.3	:
Men	20.3	16.9	:
Total	18.9	17.9	:

Table 9: Unemployment rate (aged 15–70) by sex (%)

Sex	2017	2018	2019
Women	7.7	7.4	:
Men	11.1	10.0	:
Total	9.5	8.8	8.2

Table 10: Unemployment rate (aged 15–70) by educational level (%)

Level of education	2017	2018	2019
Graduate (master's degree)	7.8	7.8	:
Undergraduate (bachelor's degree)	13.7	15.0	:
Undergraduate (junior bachelor)	9.0	7.0	:
Vocational education	11.1	9.9	:
Secondary general education – second stage	10.2	10.0	:
Secondary general education – first stage	11.4	13.3	:
Elementary education and non-degree	:	:	:

Ukraine, like many other Eastern European countries, faces the challenge of developing policy tools that can help solving the problem of young people who are not in employment, education or training (NEET). In 2017, the proportion of NEETs in Ukraine was 22.1% of the population aged 15–29 (0.9 percentage points lower than the figure for 2016). The majority of NEETs in Ukraine are young people without higher education (63.1% with incomplete higher education, vocational education or full secondary education). NEETs are more often women aged 25–29, their share being 39.3% of the population of the corresponding age group, and young women living in rural areas (where almost every third woman does not work or study). In terms of the socioeconomic status of the youth labour market, 66% of NEETs are economically inactive, while the remaining 34% are unemployed. Among the unemployed youth population, NEETs are overwhelmingly short-term unemployed (young people looking for work for up to 12 months); among economically inactive young people, most are inactive owing to care or family responsibilities. About 70% of NEETs are non-poor by the relative poverty criterion (75% of total median). Among young people from graduate or undergraduate backgrounds, a higher proportion of women than men are NEETs (45.0% vs. 32.5%, respectively). The distribution of young unemployed NEETs by population density depends directly on the level of education: the higher the level of education, the higher the proportion of young unemployed NEETs in urban settlements and, accordingly, the lower the proportion in rural areas. The State Employment Service of Ukraine has records for 22.5% of unemployed NEET women and only 8.7% of unemployed NEET men.

Economically inactive NEETs are also predominantly women: they make up an average of over 76% of all economically inactive young people aged 15–29. At the same time, the largest number of inactive women are in the age group 25–29. NEETs predominate among people without higher education in the category of economically inactive youth. The share of those who do not have even basic general secondary education is 5.6% among women and three times more (16.6%) among men. The share of economically inactive NEETs disaggregated by geographical area ranges from 12.3% to 34.8%, while the lowest level of economic inactivity among young people is 60.9% in the regions.

Key sectors of employment

More than half of Ukrainians work in the services sector (63.1% as of 2018). According to the Statistical Classification of Economic Activities in the European Community (NACE), in 2018 the

highest proportions are employed in wholesale and retail trade, agriculture and industry (Tables 11 and 12).

Table 11: Employment structure by sector of activity (%)

Sector of activity	2017	2018	2019
Industry	19.1	18.9	:
Agriculture	17.7	18.0	:
Services	63.2	63.1	:

Table 12: Employment structure according to the NACE (%)

Sector of activity	2017	2018	2019
Agriculture, forestry and fishing	17.7	18.0	:
Industry	15.1	14.8	:
Construction	4.0	4.1	:
Wholesale and retail trade; repair of motor vehicles and motorcycles	21.8	22.3	:
Transportation and storage	6.1	6.1	:
Accommodation and food service activities	1.7	1.7	:
Information and communication	1.7	1.7	:
Financial and insurance activities	1.3	1.3	:
Real estate activities	1.6	1.6	:
Professional, scientific and technical activities	2.6	2.7	:
Administrative and support service activities	1.8	1.9	:
Public administration and defence, compulsory social security	6.1	5.7	:
Education	8.8	8.7	:
Human health and social work activities	6.3	6.1	:
Arts, entertainment and recreation	1.2	1.2	:
Other types of economic activity	2.1	2.2	:

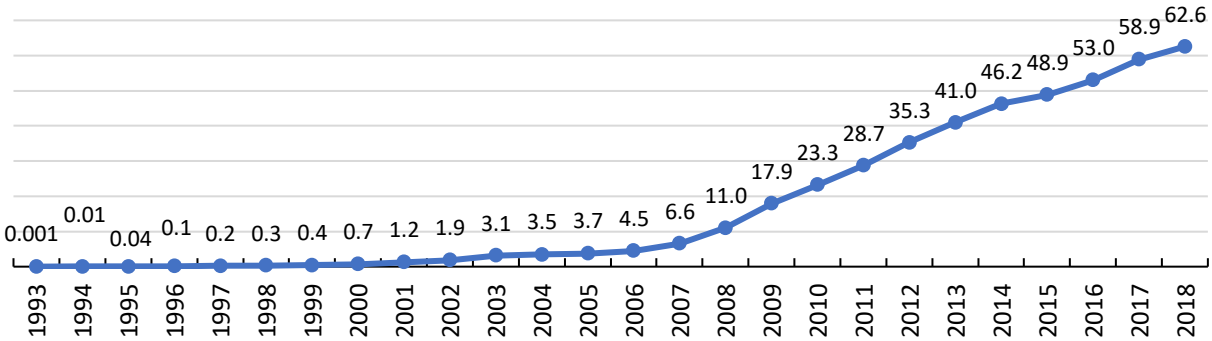
2. GENERAL AND EMPLOYMENT-RELATED USE OF THE WEB IN UKRAINE

This section describes internet use for employment purposes among the Ukrainian population. For this purpose, Google tools such as Google Analytics were used. However, it may be useful to first consider the general use of the web in Ukraine and the population's access to the internet.

General use of the web in Ukraine

The World Bank data presented in Figure 2 shows trends in internet usage (percentage of the Ukrainian population) over the period 1993–2018. The data shows an increasing trend, with sharp increases after 2007. By 2018 more than half the Ukrainian population (62.6%) had access to the internet. According to World Bank methodology, this indicator is measured by the number of individuals who have used the internet (from any location) in the past three months. The internet can be used via a computer, mobile phone, personal digital assistant, games machine, digital TV, etc.

Figure 2: Individuals using the internet (% of Ukrainian population), 1993–2018



Source: World Bank

Table 13 shows the population and internet user statistics for Ukraine as of 2019. The internet penetration ratio according to Internet World Stats is much higher than the ratio reported in World Bank data. This is because of different data sources, which are used by Word Bank and Internet World Stats. Word Bank receives data from national state organizations (in Ukraine this data is provided by State Department of Communications & Information Technology). The Internet World Stats calculate the internet usage numbers on base of various qualified sources, mainly from data published by Nielsen Online, ITU, Facebook, GfK, and trustworthy local sources.

Table 13: Population and internet user statistics for Ukraine

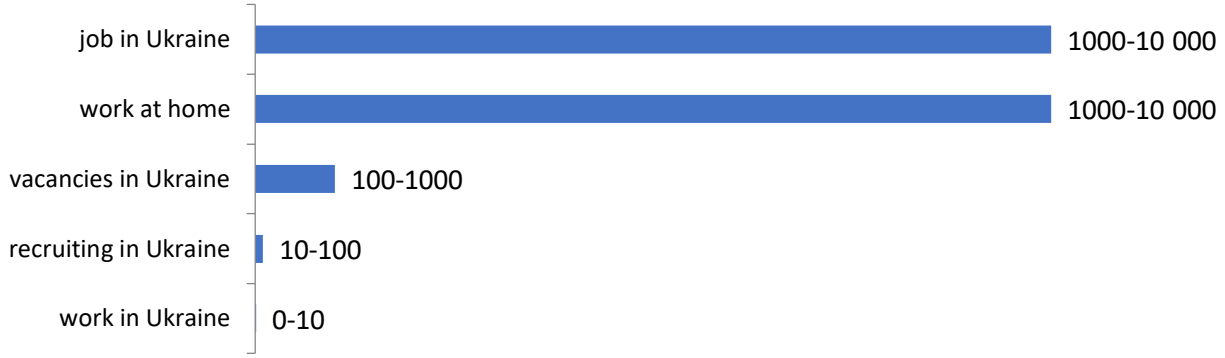
	Internet users 30 June 2019	Penetration (% population)	Facebook users 31 December 2018
Ukraine	40 912 381	93.4%	9 500 000
Europe	727 559 682	87.7%	340 891 620
Rest of world	3 808 689 126	55.3%	1 858 536 950
TOTAL WORLD	4 536 248 808	58.8%	2 199 428 570

Source: Internet World Stats

Employment-related use of the web in Ukraine

Employment-related use of the web in Ukraine was monitored using the Google Ads tool. For this purpose, the frequency with which users wrote queries in the search engine to look for a job was calculated. Figure 3 shows this information for different variations of job-related queries. The period 2016–2020 was chosen and the average for each query per month was calculated; the chart shows the maximum and minimum of averages in the period 2016–2020. It should be noted that these queries were monitored in Ukrainian and Russian. The most popular queries were 'job in Ukraine' and 'work at home'.

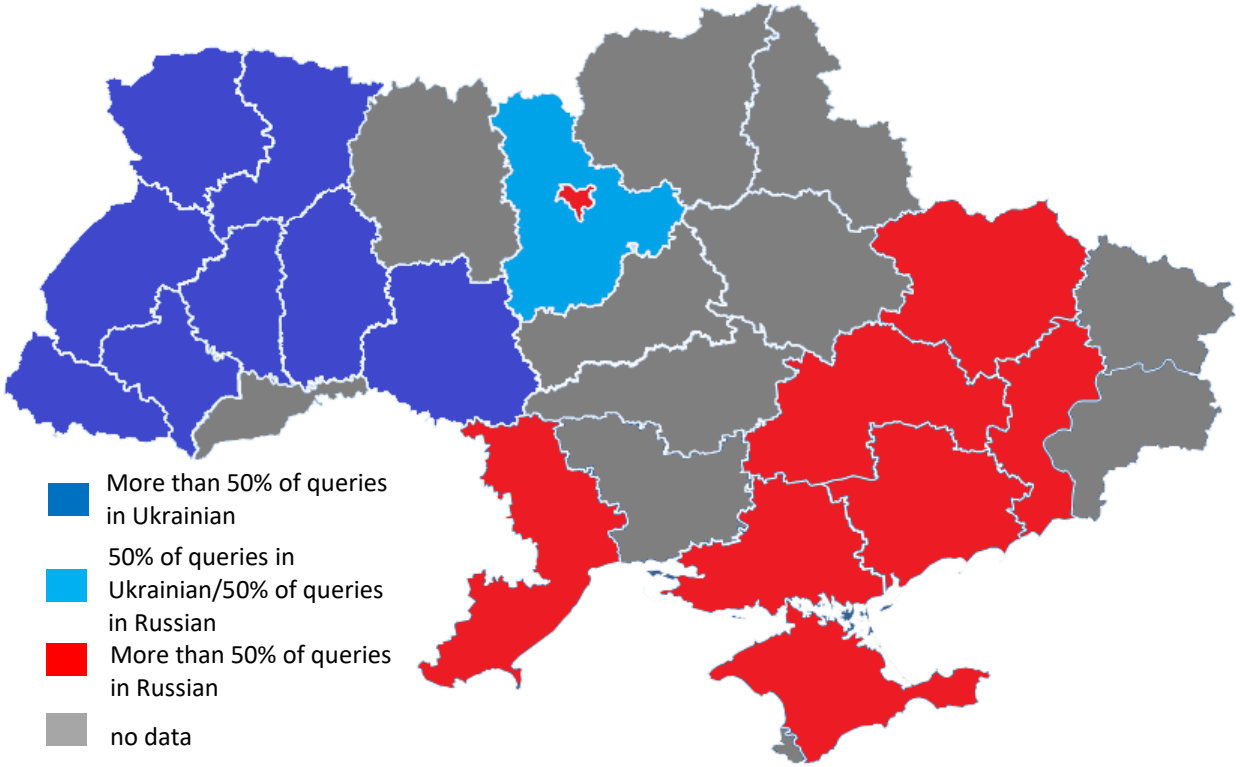
Figure 3: Average number of Google searches for a given keyword per month, 2016–2020



Google Trends was used to assess the popularity of queries relating to job hunting, in Ukrainian and Russian, in the period 2016–2020. In Figure 4 the blue line reflects job hunting queries in Ukrainian and the grey line reflects the corresponding queries in Russian. As can be seen from the chart, at certain periods of time these two trends coincide, but there are also points at which they diverge. Google Trends allows us track the popularity of queries in different regions and compare them with each other (Figure 5). Here, the regional specificity is clear: in the east of Ukraine, where the Russian-speaking population predominates, there is a higher frequency of queries in Russian. Meanwhile, in the west of the country, where there are more Ukrainian speakers in the population, there is a higher frequency of queries in Ukrainian.

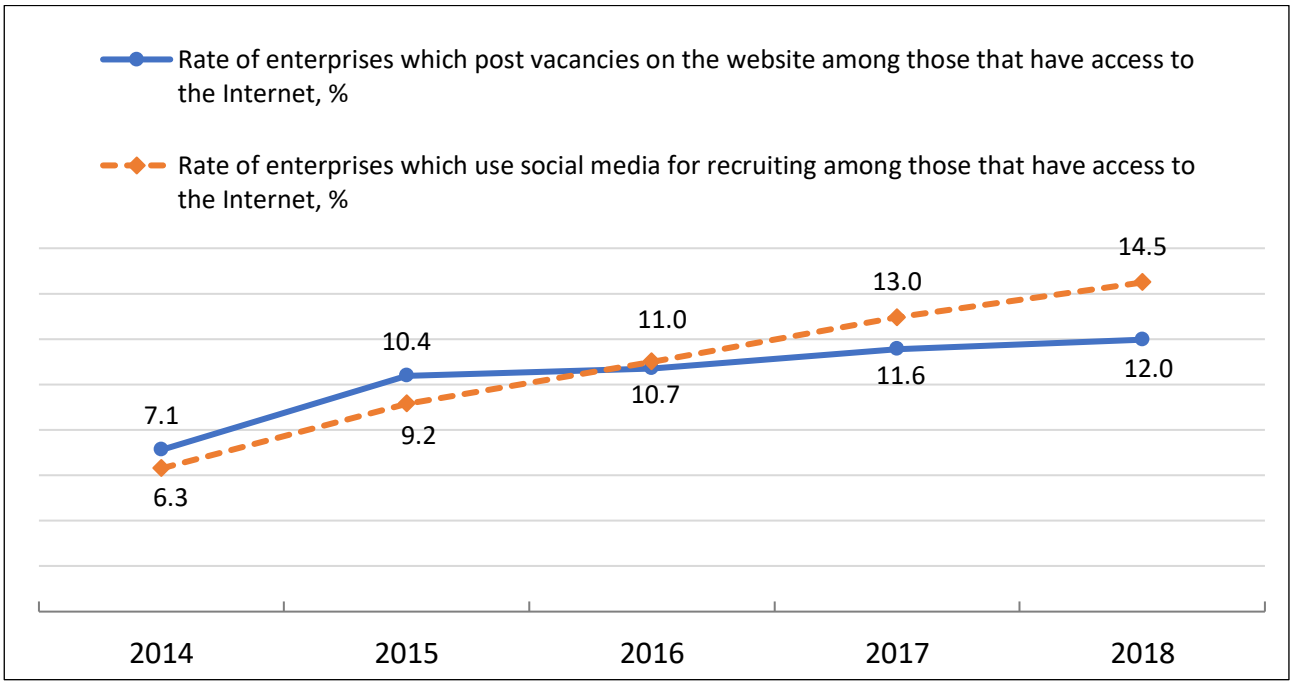
Figure 4: Google Trends results for the job hunting topic in Ukraine, April 2016 to April 2020

Figure 5: Google Trends results for Ukrainian regions, April 2016 to April 2020



It should be noted that according to state statistics, the share of enterprises in Ukraine that use the internet to search for workers is growing (Figure 6). Nevertheless, this share remains relatively low.

Figure 6: Use of the internet by enterprises for recruiting



Potential of Big Data for labour migration research

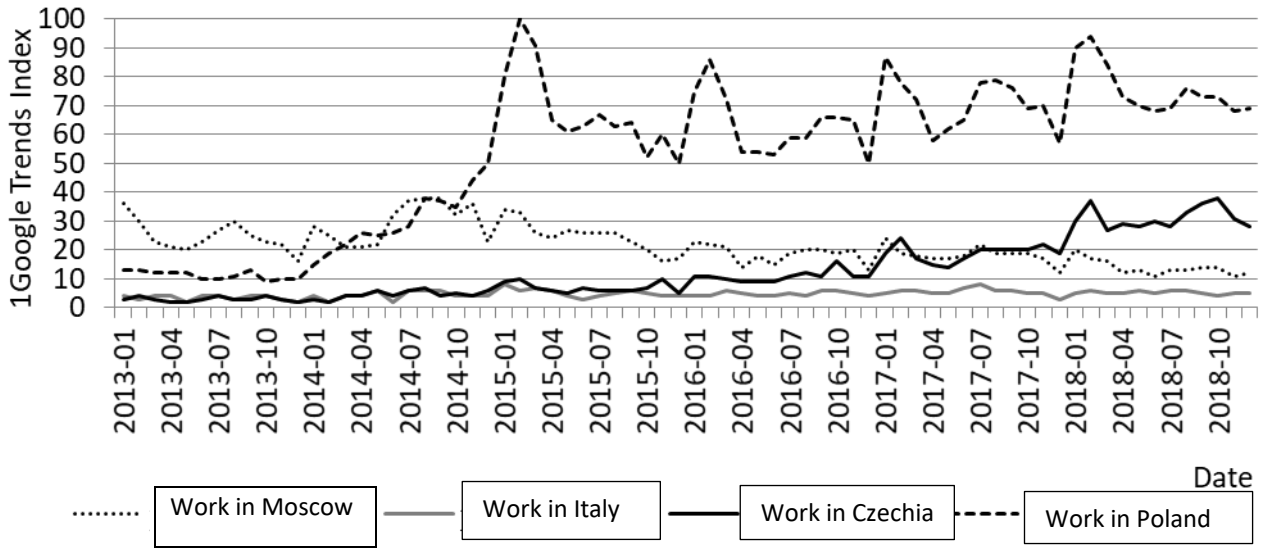
In recent years the number of Ukrainians working abroad has increased constantly, making labour migration a topical issue. Nevertheless, the available statistics on labour migrants derived from statistical, social and administrative data cannot satisfy the needs of researchers, experts and public officials for timely and unbiased data. As a result, various estimates of labour migration scales and future trends are presented in different publications. In this situation, researchers try to use alternative information sources, including Big Data. Big Data not only solves the problem of timeliness in receiving information, but also allows accurate data to be obtained in areas where previous evidence was incomplete (for example, routes of illegal migrants).

A pilot study was conducted to assess the potential of Big Data usage. It was based on information from open sources, namely Google Trends and job search websites. The results show that data retrieved from Google Trends reflects the changes in the direction of labour migration, from the Russian Federation to Poland after 2014 (when the annexation of Crimea took place and the armed conflict in Eastern Ukraine started). At the same time, the structure of vacancies (coded according to the Ukrainian Classifier of Occupations) from the job search websites does not correspond to the professional structure of labour migrants from Ukraine. It was concluded that in Ukraine, Big Data (from open sources) can currently only be used for a superficial description of trends in migration processes, but cannot help researchers to identify the scale of migration. Thus, in Ukraine, Big Data cannot replace traditional statistics in migration research. The main barriers for implementation of decisions driven by Big Data are (1) the relatively low level of internet usage in Ukraine (compared to that in developed countries); (2) the absence of legislative regulation of researchers' access to

data retained by private companies; and (3) the shortage of specialists with the necessary qualifications.

It is helpful to consider some examples of website usage. On the basis of the study 'External Labour Migration of the Population of Ukraine', the countries with the largest number of labour migrants were identified: Italy, Poland, the Russian Federation and the Czech Republic. Then, for each country, a list of queries was created that contained the words 'job' or 'vacancy' (for example, 'job in Italy', 'job Italy', 'vacancy Rome', etc.). The search query also used the name of the country. For the Russian Federation, the requests also included the city of St Petersburg, and for Italy, the city of Milan. The query selection stage used queries in Ukrainian, Russian, English and the national language of the country (for example, Italian for Italy). Then, from the entire list of queries for one country, the query with the highest average frequency during the study period was selected. To find a job in Italy, such a request was 'work in Italy', for Poland it was 'work in Poland', for Russia, 'work in Moscow', and for the Czech Republic, 'work in the Czech Republic' (all requests were in Russian). The results of query matching are shown in Figure 7.

Figure 7: Trends in search queries for work outside Ukraine, 1 January 2013 – 31 December 2018



According to Google Trends data (Figure 7), there have been changes in the main directions of job search abroad. Before 2014 (when the military conflict in Ukraine began and the occupation of the Crimean Peninsula took place), jobs were sought mainly in the Russian Federation. After 2014 there was a decrease in job searches for the Russian Federation and a significant increase in job searches for Poland. In addition, according to Google Trends, it can be seen that the 'peak' popularity of jobs in Poland was in February 2015, which can be linked to events in the east of Ukraine in January 2015 (the intensification of battles for Donetsk airport) and the devaluation of the national currency, which could significantly affect the migration motivation of the population in Ukraine through the dollarisation of the economy.

Websites that advertise vacancies abroad can be a useful source of up-to-date data on job placement outside Ukraine. As an example, the results obtained from analysis of vacancy announcements on two sites – HeadHunter (hh.ua) and Flagma.pl – can be examined. HeadHunter is among the top five job search websites in Ukraine (September 2018, according to Factum Group by audience reach level 1+). This site offers adverts for jobs in Ukraine and abroad. Only job offers

in the Russian Federation were selected from this site. The Flagma.pl website has the highest traffic from Ukraine (as of November 2018 – 30.5%) among Polish job search sites, as vacancies are presented on the website mainly in Russian and Ukrainian. From this site, job openings in Poland were selected.

The adverts were downloaded from each website using the dexi.io platform. Using a wide range of features of this tool, the web pages of job search sites were scanned and web data extracted and pre-processed in a spreadsheet. The scanning speed was about 30 vacancies per minute (given that the average number of vacancies per page is 20), which means that in a full day of work a database of vacancies with more than 40 000 positions, structured by cities and professions, was created.

By job title in the advert, all vacancies were encoded using the Classifier of Occupations at the level of the first character of code. A significant drawback of such coding is that all vacancies for managers for example, were categorised as 'Legislators, senior civil servants, executives, managers'. In the next phase the structure of vacancies from job search sites corresponding to the structure of occupations of migrant workers from Ukraine in Poland and the Russian Federation was analysed. The results obtained indicated that the structure of job vacancies did not fit the structure of occupations of migrant workers (with the exception of the 'simplest occupations' group in Poland). In addition, job vacancies from the sites showed a shift in jobs in Poland towards the simplest occupations, and in the Russian Federation towards professions of 1–4 (according to the results of the study this shift was not so significant: for occupations of occupational groups 1–4, 13.3% of migrants were employed in the Russian Federation and 2.4% in Poland). This shift can be caused by different types of sites: on Flagma.pl, employers can place adverts for free, while on hh.ua, a fee is required to place an advert, which immediately filters out a large number of employers who are looking for workers to work in factories or in agriculture.

The examples above merely serve as illustrations of the possible use of data from job sites in assessing labour migration and some experience of testing such approaches in Ukraine.

3. CONTEXT AND CHARACTERISTICS OF THE ONLINE JOB PORTAL MARKET

Internet vacancy portal of the State Employment Centre of Ukraine

The SEC is part of the State Employment Service, a centralised system of state institutions whose activity is directed and coordinated by the Ministry of Social Policy of Ukraine.

The SEC has two main functions: it is the only state mediator for employment; and at the same time, it is the executive body of the Compulsory State Social Insurance Fund of Ukraine, which performs state registration of unemployed persons as non-working (unemployed), pays them insurance benefits and provides a full range of services for finding suitable work, vocational guidance, training, etc.

Among other functions, the SEC is an active mediator in the labour market between employers and job seekers. It provides job search and recruitment services free of charge, not only to those who are officially registered as unemployed, but to anyone seeking formal (declared) work.

The SEC brings together 25 regional employment centres, 95 basic and 429 branches of regional employment centres across Ukraine. All offices of the SEC operate under a single service delivery scheme.

The SEC has developed a unified online database of jobs, job seekers and job training opportunities across the country. Access to the job vacancy database is provided through a dedicated online job portal that also includes job seekers' resumes. As of 16 April 2020, there were 41 300 vacancies and 490 400 resumes on the SEC's main site. However, such a difference in the number of vacancies and resumes does not indicate a problem with the labour supply. Rather, it relates to the fact that job vacancies are updated more often than resumes, and that a large number of resumes belong to individuals who have unemployed status through the SEC and are more interested in receiving unemployment benefits than obtaining a job. In addition, because access to online vacancies is free, a large proportion of vacancies are selected by those who have not registered at all on the SEC site. Given the above, it is possible to understand why the number of vacancies for the period may be more than the number of registered unemployed (for example, during 2019 the number of vacancies was 1 151 000 and the number of registered unemployed was 1 023 000 people).

The SEC is a popular resource for job searching mediation in the labour market as a whole, and not only for those who have registered as unemployed. Hence, according to the Labour Force Survey in 2018, the most common method of finding a job for unemployed individuals in Ukraine was to seek help from the SEC (36.9%) (Table 14), while searching through internet resources was in third place (15.0%), after searching for a job through personal connections (30.6%). (Moreover, a proportion of the searching through internet resources would be through the online portal of the SEC).

In many regions the situation is even clearer: in 5 regions of Ukraine, more than 50% of unemployed people seek employment through the SEC (Table 15), and in 13 regions this is the dominant method. Meanwhile, internet resources are the dominant method of unemployed individuals finding a job only in Kyiv Region (43.1%) and Kyiv (52.2%).

Table 14: Causes of unemployment and method of finding a job, 2018 (%)

	Through the media	Via the internet	Personal connections	Applied to the State Employment Service	Other	Total
Dismissal at the initiative of the employer	3.4	13.1	24.5	51.4	7.6	100.0
Dismissal on employee's initiative, by agreement of the parties	13.2	17.3	31.3	29.7	8.5	100.0
Dismissal due to expiration of contract	4.0	16.0	34.7	32.0	13.3	100.0
Not employed after graduation	8.5	26.1	43.1	13.1	9.2	100.0
Persons whose work is seasonal in nature	6.7	2.0	33.6	49.7	8.1	100.0
Persons not employed for other reasons	7.1	12.6	23.7	47.0	9.6	100.0
Total	**8.5**	**15.0**	**30.6**	**36.9**	**8.9**	**100.0**

Table 15: Method by which unemployed individuals find a job, by region, 2018 (%)

	Through the media	Via the internet	Personal connections	Applied to the State Employment Service	Other	Total
Vinnytsya	11.1	11.1	13.9	43.1	20.8	100.0
Volyn	6.3	4.2	31.3	56.3	2.1	100.0
Dnipropetrovsk	3.3	17.2	35.2	36.1	8.2	100.0
Donetsk	16.0	13.4	36.1	21.8	12.6	100.0
Zhytomyr	0.0	6.8	3.4	88.1	1.7	100.0
Zakarpattya	5.3	21.1	61.4	8.8	3.5	100.0
Zaporizhzhya	2.5	12.3	40.7	35.8	8.6	100.0
Ivano-Frankivsk	2.1	14.9	34.0	48.9	0.0	100.0
Kyiv	2.0	43.1	29.4	21.6	3.9	100.0
Kirovohrad	16.0	16.0	22.0	40.0	6.0	100.0
Luhansk	15.4	11.5	17.3	42.3	13.5	100.0
Lviv	17.7	17.7	46.8	12.7	5.1	100.0
Mikolayiv	7.4	7.4	35.2	25.9	24.1	100.0
Odesa	14.5	0.0	27.5	47.8	10.1	100.0
Poltava	15.1	4.1	32.9	30.1	17.8	100.0
Rivne	2.0	2.0	26.0	58.0	12.0	100.0
Sumy	15.2	10.9	17.4	54.3	2.2	100.0
Ternopil	10.4	2.1	37.5	31.3	18.8	100.0
Kharkiv	1.4	26.8	16.9	49.3	5.6	100.0
Kherson	27.5	19.6	15.7	33.3	3.9	100.0
Khmelnytskiy	2.0	16.3	36.7	40.8	4.1	100.0
Cherkasy	5.5	9.1	54.5	29.1	1.8	100.0
Chernivtsi	2.9	8.8	35.3	47.1	5.9	100.0
Chernihiv	0.0	2.0	10.0	68.0	20.0	100.0
City of Kyiv	5.6	52.2	31.1	6.7	4.4	100.0
Total	**8.5**	**15.0**	**30.6**	**36.9**	**8.9**	**100.0**

Typically, younger people (the highest rate being among people aged 30–34 years (24.2%)) and those with tertiary education (19.9%) (see Annex A) are more often involved in internet resource services.

Legal/regulatory framework

There is no legal framework specific to OJVs, but OJVs must comply with the requirements of the Laws of Ukraine on Employment (Article 11 and Section VI) and on Advertising (Article 241), as follows.

• It is forbidden to discriminate on the basis of race, colour, political, religious and other beliefs, membership of trade unions or other associations of citizens, gender, age, ethnic and social origin, property status, place of residence, linguistic or other characteristics.

• Everyone has a right to receive information on labour supply and demand, including job vacancies, free of charge. This is why, for example, even private online resellers do not charge job seekers a fee, but receive money from advertising and businesses, and also through the provision of additional services.

• The SEC is empowered to coordinate the activities of business entities providing employment mediation services in Ukraine by: exchanging data on job places (vacancies) (subject to agreement of the parties and conclusion of the contract); joint activities (projects); and counselling to improve services for employers and job seekers, including those with additional job placement guarantees.

• The SEC will collect from business entities providing employment mediation services statistical information (generalised) on the number of persons they have employed, in the following format.

No.	Profession (position)	Number of employed citizens	Wage (UAH)					
			Less than 1 000.00	1 000.01 to 1 500.00	1 500.01 to 2 000.00	2 000.01 to 5 000.00	5 000.01 to 10 000.00	Over 10 000.00
A	1	2	3	4	5	6	7	8

The SEC portal also has internal and specific rules to which employers who use its services have to adhere:

- the need to offer a work contract;
- the mandatory indication of the salary in the OJV form on the SEC portal.

The advantages of the SEC job vacancies site are:

- conformity of the professions in the vacancies to the professions listed in the KP DK 003: 2010 (Ukrainian Classifier of Occupations);
- maximum verification of information about the employer, which limits the possibilities of fraud;
- widest possible regional coverage;
- level of salaries specified in all vacancies;
- monthly analysis of the dynamics of vacancies and summaries by profession in terms of supply/demand and wages.

Organisational structure of the SEC online job portal(s)

The SEC job portal allows candidates to apply for employment through the employment service, to consult and apply for job vacancies and to update information on their resumes. It allows employers to contact potential job candidates by examining their resumes, to publish vacancies and to apply for publicly funded programmes. It also enables employers to keep track of the applications submitted for their job vacancies. All users must be registered on the portal; the SEC services verify the accuracy of the information contained in applications, and job adverts proposed for publication must be completed in a form that contains mandatory fields. This form requires employers to comply with the legal and other requirements adopted by the SEC portal.

The OJV must contain some compulsory fields, such as remuneration (which must be equal to or above the national minimum wage), confirmation that the advert corresponds to an actual vacancy and demonstration that it complies with all rules of non-discrimination, including in relation to gender, age and religion.

Despite its statutory right to cooperate with private employment agencies and online resources, the SEC does not do so, since these do not fulfil all of the same mandatory requirements for publishing on the public portal.

Focus of the SEC online job portal

The SEC online job portal does not have a specific target group, and it does not target a specific type of employer or job seeker. All employers have equal access to the portal and may publish OJVs on the SEC portal if they comply with the legal framework and other rules. The vacancy must correspond to a work contract, and thus, adverts relating to non-wage work, such as service provision, are not allowed. Everyone who is legally able to enter the labour market can access the portal as a job seeker, but owing to the close connection of the portal to the national employment services, the target group for the SEC is the unemployed population.

Private online job portals

Legal/regulatory framework

The legal framework for OJVs on private portals is the same as that for the SEC. In addition, according to the Law of Ukraine on Employment (Article 36, Part 5), business entities providing employment mediation services are not permitted to:

- deliberately recruit, employ or hire employees for jobs involving unacceptable dangers and risks, or for jobs where employees may be victims of abuse or discrimination of any kind;
- prevent the employee from being hired directly by the employer, restrict the employee's professional mobility, or impose sanctions on an employee who has agreed to work with another employer.

The regulatory framework for the submission and use of information in the field of employment mediation is based on the use of the Classifier of Occupations (KP DK 003: 2010) and the Classifier of Types of Economic Activities (CTEA) (KVED-2010 DK 009: 2010 (NACE)).

In accordance with the provisions of the current legislation, national classifiers are aligned with the state standards of Ukraine. However, the regulatory requirements for their areas of use are quite controversial. The fact that a particular classifier is a national standard according to the Law of Ukraine on Standardisation does not imply its obligatory use. It is applied on a voluntary basis, unless the obligation is established by legal acts. For example, to fill in the employment records (analogous to employment contracts), the KP and the KVED must be used, as this is explicitly required by the instruction on the procedures for keeping the employment records of employees. Compliance with the standards mentioned requires the submission of regular statistical reports

by the enterprises to the State Statistics Service, as well as the submission of information on insured persons to the Fiscal Service of Ukraine to account for the amounts of the accrued single social contribution. Proper use of the KP is obligatory when assigning preferential pensions under Lists 1 and 2, approved by Resolution No. 461 of 24 June 2016 on approving the lists of industries, jobs, occupations, positions and indicators, employment in which entitles to retirement age for preferential pension conditions. However, there is no direct requirement for the use of the KP and the KVED in publicly submitted vacancies, and this allows them to be ignored, not only by online resellers but also by other public resources that provide job information and job search.

The user interfaces of the various internet portals are organised in different ways. The main problem is that employers and job applicants do not formulate their proposals in terms of state classifiers of professions and types of economic activity. There are three main reasons:

- low level of awareness of these classifiers and lack of incentives (as well as effective enforcement mechanisms) to adhere to them;
- the desire to formulate commercially attractive job titles and skills in order to maximise the number of applicants;
- inertia in terms of established patterns and traditions in job titles, skills, functions etc.

All private internet intermediaries are characterised by a confusing and non-standard classification of job titles and their key elements (types of economic activity; job descriptions and qualifications and skills requirements; modes of work; type of employment contract; term of employment agreement, etc.). On most Ukrainian intermediary sites, the leading categorisation is a random blend of professional job titles, professions, types and sectors of economic activity. In order to identify the majority of vacancies of Ukrainian intermediary sites in accordance with the NACE and KP criteria, and especially with the European Skills/Competences, qualifications and Occupations (ESCO) classification, it is necessary to:

- perform contextual analysis of job descriptions in search of standard information to determine what the job is;
- develop libraries for translating job vacancies in the KP and ESCO classifier.

The greatest problem is not that a job title is not listed in the classifiers, but that the name is the same as in the classifiers, even though the description of its contents reveals that it refers to a completely different category of the same classifier, or a mixture of categories. For example, a common job title, ‘manager’, may in one case actually mean the manager and be assigned to the first group in the KP, and in another case be simply an attractive name for an ordinary seller and would functionally correspond to the work of the fourth group in the KP. This is a common technique when some part of the job title, or some of the individual elements of the job title, is written in English or even in Ukrainian or Russian, to make it attractive. For example, a project manager vacancy will be translated correctly in one case as ‘project manager’, and in another, a Ukrainianised English-speaking job title will be used, ‘project manager’, or a new variation, ‘proecting manager’, may be invented.

One of the most common problems with developing a job database is the duplication of records in various ways.

- The same vacancy is placed on all the most popular online resources (at least a third of vacancies are repeated).
- For the purpose of keeping the vacancies listed as ‘new’, employers publish the same vacancies on the site of one online reseller by adjusting certain insignificant parameters, such as changing the salary by 1%, or the conditions of its accrual (adding ‘on probation’ , ‘+ %’, ‘+ bonus’, etc.).

- The same vacancy is published simultaneously in Ukrainian and Russian, Ukrainian or Russified English.
- Employers publish a significant number of regional vacancies as separate vacancies, including in general terms. For example, a job may be offered as cashier-operative (wage UAH 10 000) on a common basis without fixing the location. In addition, vacancies for specific locations are published: cashier-operative at the metro station Livoberezhna (wage UAH 10 000), cashier-operative at the metro station Harkivska (wage UAH 10 000), etc.

The technology of precise territorial localisation of vacancies is quite confusing. It is common practice when a company is offering a vacancy located in one region, but offers jobs in other regions or abroad. For example, in a vacancy for a painter where the job is located in Kyiv, the description specifies that the job is in Slovakia.

There are no restrictions, recommendations or guidelines on the use of the Russian or Ukrainian language by private internet job resources. However, some patterns of language use can be noted, based on employers' locations:

- western regions – most vacancies are published in Ukrainian;
- northern and central regions – vacancies are published in Russian and Ukrainian more or less equally;
- southern and eastern regions – vacancies are published mainly in Russian.

Vacancies are often published in English. In most cases, such vacancies are published by companies who focus on working with foreign partners (most often in the information technology (IT) field), or directly by foreign companies.

On all popular websites, the length of time the job vacancy remains on the list is connected to the number of days paid by the employer, rather than to the period of its validity. As a result, some of the vacancies on the list will remain, despite the fact that they have already been filled. It is impossible to estimate the number of such vacancies without detailed analysis and testing.

With regard to qualifications, the following apply.

- OJVs for less skilled jobs are often found on portals where cars or other second-hand goods are also sold. Examples of these sites are OLX online, which is an online version of the traditional newspaper classified section.
- LinkedIn is the portal preferred by people with higher and more technical qualifications.
- Job adverts or job search strategies in IT-related professions have specific forms of communication regarding recruitment, dissemination of portfolios and use of audio-visual tools.

Analysis of selected websites

The list of online job vacancy portals identified during the landscaping exercise includes 28 different sources (not including the SEC website) (Table 16).

Table 16: List of online job vacancy portals identified during the landscaping exercise

	Name of the job portal	Website address
1	talent	https://talent.ua
2	Indeed	https://ua.indeed.com
3	work.ua	https://www.work.ua/en/
4	rabota.ua	https://rabota.ua/

5	jobrapido	https://ua.jobrapido.com/
6	Neuvoo	https://neuvoo.com.ua
7	careerjet	https://www.careerjet.ua/
8	HeadHunter	https://hh.ua/[3]
9	Jobs.ua	https://jobs.ua/vacancy
10	dcz gov	https://dcz.gov.ua/
11	Trud	https://trud.ua/
12	SuperJob	https://www.superjob.ua/
13	Jooble	https://ua.jooble.org/
14	Inforico	http://rabota.inforico.com.ua/
15	RIA.com	https://www.ria.com/c-rabota/rabota/
16	Ukrboard	http://www.ukrboard.com.ua/ru/board/r-6/p-1/
17	uainfo	http://www.uainfo.com/rabota
18	olx	https://www.olx.ua/rabota/
19	DOU	https://dou.ua/
20	Flagma	https://flagma.ua/
21	ProstoRabota	https://prostorabota.ua/
22	NOVAROBOTA	https://novarobota.ua/
23	Mitula	https://rabota.mitula.com.ua/
24	trud	https://trud.net/
25	Rabota-i-Trud	https://rabota-i-trud.ua/
26	MyWork	http://mywork.in.ua/
27	besplatka	https://besplatka.ua/rabota
28	kabanchik	https://kabanchik.ua/

Most of the online job portals (indeed, jobrapido, neuvoo, careerjet, SuperJob, jooble) are foreign (Italian, Russian) or international secondary aggregators of Ukrainian sites of specialised intermediaries (work.ua, jobs.ua, rabota.ua, dcz gov, jobik.net, hh.ua, rabota-i-trud.ua, etc.) and other sources of initial job placement. The advantages of this is that vacancies are collected in one place. The disadvantages are that there is no visual rubric (industry, professional categories, contract type, etc. do not appear in the filters, or in some cases the filters are not offered in the initial search but appear after immersion in a list); and that the descriptions of jobs are incomplete, with users being required to click through to the original site, which contains full information. It is not known to what extent secondary aggregators eliminate duplication of vacancies and on what basis coverage of different regions, industries and occupational groups is offered. Some of the vacancies are hidden. For example, a site listing a vacancy for a 'housekeeper' displays a message: 'The company has 381 similar vacancies'.

It is advisable to give examples of a numerical description of some characteristics of the selected OJV websites (see Annex B).

Variable: OJV volume

On most of the sites, the aggregate statistics are not reliable / up to date. For example, the total number of vacancies by region does not correspond to the total for Ukraine as a whole, and

[3] This URL redirects to: https://grc.ua/

statistics at the level of individual filters do not correspond to the number of relevant list items when viewing vacancies.

Variable: Sectoral scope

None of the websites use the rubrics of types and sectors of the economy according to the CTEA. The sections available on the sites include those with varying degrees of completeness that correspond to sectors or types of the economy according to the CTEA. When analysing the websites, a characteristic that indicates what proportion (0 to 1) of the 18 largest sectors (at sector level A, B, C…) mention or resemble those sections of the internet resources that can be identified in the CTEA categories was used (see Annex B). For example, the internet resource talent.ua has an indicator of 0.5 because it distinguishes 9 of the 18 sectors of the economy according to the CTEA. Other vacancies to be assigned to the sector of the economy should be analysed on the basis of their descriptions and relevant classification libraries.

Variable: Publication date of OJV

All the websites contain information about the date of the vacancy and allow vacancies to be sorted automatically. Some sites have filters that allow users to select vacancies according to a specific time interval. This is convenient because the more filter categories a site uses, the higher its score on this metric. Points rule: 1 – gets the site with the highest number of categories in the filter (6 categories), others receive a point by the rule that number of site categories from this variable must be divided by 6.

The relevance of the vacancy in time is not identified. Some sites are still listing vacancies from 2016.

Variable: Occupation

The situation regarding the quality of the information on occupation is the same as that for the information on economic sectors. None of the websites use occupational classifications according to the Classifier of Occupations. Among the sections available on the sites are those that, with varying degrees of completeness, correspond to the highest CO categories. When analysing the websites, a characteristic that indicates what proportion (from 0 to 1) of the nine largest sectors mention or are similar to those sections of the internet resources that can be identified in the Classifier of Occupations categories. For example, the talent.ua website has a rate of 0.3 because only three of the nine categories of the classifier can be found in its headings. Other vacancies to be assigned to the occupation should be analysed on the basis of their descriptions and relevant classification libraries.

Variable: Type of contract

In Ukraine, the types of contracts offered are determined by legal criteria: written or oral; indefinite or definite in duration; labour or civil law. However, private internet resources ignore them with simple duration or mode of operation. Therefore, for websites where the legal criteria for the selection of the heading were not applied, we gave a score of 0. For sites where the legal criteria were used indirectly or partially we gave 0.5 (combination full-time, part-time, distance work), and gave a score of 1 if the combination full-time employment, partial employment, distance work, volunteering, internships, part-time, permanent (not termed).

Variable: Working time

This variable defines whether the working time in the vacancy description text is structured or textual or not available. If there are no filters for this variable and the descriptions do not clearly indicate the mode and working time, we gave a score of 0. If there are separate elements for

identifying this change in the filter headings, we gave 0.5. If the mode and the operating time are contained only in the descriptions, we gave a score of 1.

Variable: City, district, region

We used the same scale as in the source file, although some adjustments have been made to the value of certain websites. For example, 0 was assigned to the region variable; however, since most sites allow us to single out all regions of Ukraine, we corrected this to 1, except for websites that mainly serve several regions rather than all.

Variable: Qualification level

The variable defines whether the qualification level in the vacancy description text is structured or textual or not available. We have refined the source file metrics for sites where education level can be determined for job requirements. This, in simple terms, gives an idea of the skill level of the occupation. If education level is specified in the description, we gave 1. If it was not obligatory, even in the job description, we scored it 0.

Variable: Wage

We evaluated this variable in a different way than in the source file. We noted the approximate proportion of vacancies that indicated wages.

New variable: Site popularity rating in Ukraine according to Google Trends

We believe that the popularity of searches for the relevant site in the Ukrainian segment of Google (given that in 2019, 90% of internet users in Ukraine used Google for searches) may be an important characteristic of an online resource listing vacancies in the country. To calculate this, we exceed the Google Trends rating in normalised units from 0 to 1 according to the rule: divide the rating value in Google Trends by 100. (Google Trends calculates the relative query scores by assigning a value of 100 to the largest case).

Conclusion

After calculating the points for each website, we produced the following list of eight sites, sorted by their attractiveness:

1. https://dcz.gov.ua/
2. https://rabota.ua/
3. https://www.work.ua/
4. https://www.superjob.ua/
5. https://jobs.ua/vacancy
6. https://hh.ua/
7. https://trud.ua/
8. https://www.careerjet.ua/

List of Abbreviations

AI	Artificial intelligence
CTEA	Classifier Types of Economic Activities
ESCO	European Skills/Competences, qualifications and Occupations
ETF	European Training Foundation

GDP	Gross domestic product
GNI	Gross national income
IT	Information technology
KDD	Knowledge discovery in databases
LMI	Labour market intelligence
NACE	Statistical Classification of Economic Activities in the European Community
NEET	Not in employment, education or training
OJV	Online job vacancy
PPP	Purchasing power parity
SEC	State Employment Centre
UAH	Ukrainian hryvnia (currency)

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Annexes

Annex A

Table A1: Level of education and job search methods (%)

	Through the media	Via the internet	Personal connections	Applied to the State Employment Service	Other	Total
Higher education	6.8	19.9	24.7	39.9	8.7	100.0
Vocational and technical education	12.5	10.3	38.1	29.3	9.7	100.0
Secondary and elementary education	6.9	11.7	33	40.2	8.2	100.0
Total	8.5	15.2	30.6	36.8	8.9	100.0

Table A2: Age groups and job search methods (%)

	Through the media	Via the internet	Personal connections	Applied to the State Employment Service	Other	Total
15–24 years	9.9	19.7	39.5	21.5	9.4	100.0
25–29 years	9.2	17.9	29.8	33.9	9.2	100.0
30–34 years	6.6	24.2	29.1	32	8.2	100.0
35–39 years	9.7	18.6	31.2	32.1	8.4	100.0
40–49 years	6.4	8.3	30	44.4	10.8	100.0
50–59 years	10.6	7.1	25.4	50.5	6.4	100.0
60–70 years	0.0	0.0	100.0	0.0	0.0	100.0
Total	8.6	15.1	30.6	36.9	8.8	100.0

Annex B

Table B1: Landscaping - Ukrainian OJV websites' characteristics

Country	Name of the job-portal	Type of operator (normalized)	Rough position in the Google ranking (normalized)	OJV volume	Sectoral scope	Publication date of OJV	Update frequency	Occupation (normalized)	Type of contract (normalized)	Working time (normalized)	Sector (normalized)	City (normalized)	District (normalized)	Region (normalized)	Qualification level (normalized)	Wage (normalized)	Normalized size	Type of job portal	Media	Final Ranking
UA	talent	1	1	1680	0,5	0,17	1	0,3	0	2	0	1	0	0,05	1	1,0	0,01	1,0	0,59	10
UA	indeed	1	1	28426	0,0	0,50	1	0,2	0	0,5	0	1	0	0,2	1	0,1	0,28	1,0	0,46	15
UA	work.ua	1	1	40000	0,4	0,83	0	0,8	0,5	1	0	1	0	1	1	0,8	0,39	1,0	0,66	3
UA	rabota.ua	1	0,8	32468	0,5	0,67	1	0,7	0,5	1	0	1	1	1	1	0,7	0,32	0,0	0,67	2
UA	jobrapido	1	1	4000	0,2	0,17	1	0,8	0	0	0	0,5	0	1	0	0,7	0,03	0,5	0,41	18
UA	neuvoo	1	1	3375	0,3	0,67	1	0,1	0	0,5	0	0,5	0	1	0	0,5	0,03	0,5	0,42	17
UA	careerjet	1	1	100000	0,7	0,17	1	0,5	1	0,5	0	1	0	1	0	0,8	1,00	0,5	0,60	8
UA	headhubter	1	0,5	9561	0,5	0,83	1	0,6	1	1	0	1	0	1	0	0,7	0,09	1,0	0,62	6
UA	jobs	1	0,5	4602	0,8	1,00	1	0,6	1	1	0	1	0	1	0	0,6	0,04	1,0	0,63	5
UA	dcz gov	1	0,5	47586	1,0	0,17	1	1,0	1	2	0	1	0,5	1	1	0,8	0,47	1,0	0,82	1
UA	trud	1	0,5	14320	0,3	0,67	1	0,2	1	2	0	1	0	1	0	0,6	0,14	1,0	0,62	7
UA	superjob	1	0,5	780	0,8	0,67	1	0,5	0	2	0	1	0	1	1	0,6	0,00	1,0	0,65	4
UA	jooble	1	0,5	100341	0,0	0,33	1	0,1	1	1	0	1	0,5	1	0	0,5	1,00	0,5	0,55	12
UA	inforico	1	0,5	6502	0,5	0,17	1	0,2	0	2	0	1	0	1	1	0,6	0,06	1,0	0,59	11
UA	ria.com	1	0,5	3261	0,4	0,50	0	0,2	0	2	0	1	0	1	0	0,9	0,02	1,0	0,50	14
UA	ukrboard	1	0,5	13728	0,4	0,17	1	0,3	0	2	0	1	0	1	0	0,5	0,13	1,0	0,53	13
UA	uainfo	0	0,5	22950	0,3	0,17	1	0,3	0	1	0	1	0,5	1	0	0,6	0,22	1,0	0,45	16
UA	olx	1	0,5	19980	0,5	0,50	1	0,3	0	2	0	1	0	1	0	0,9	0,19	1,0	0,59	9