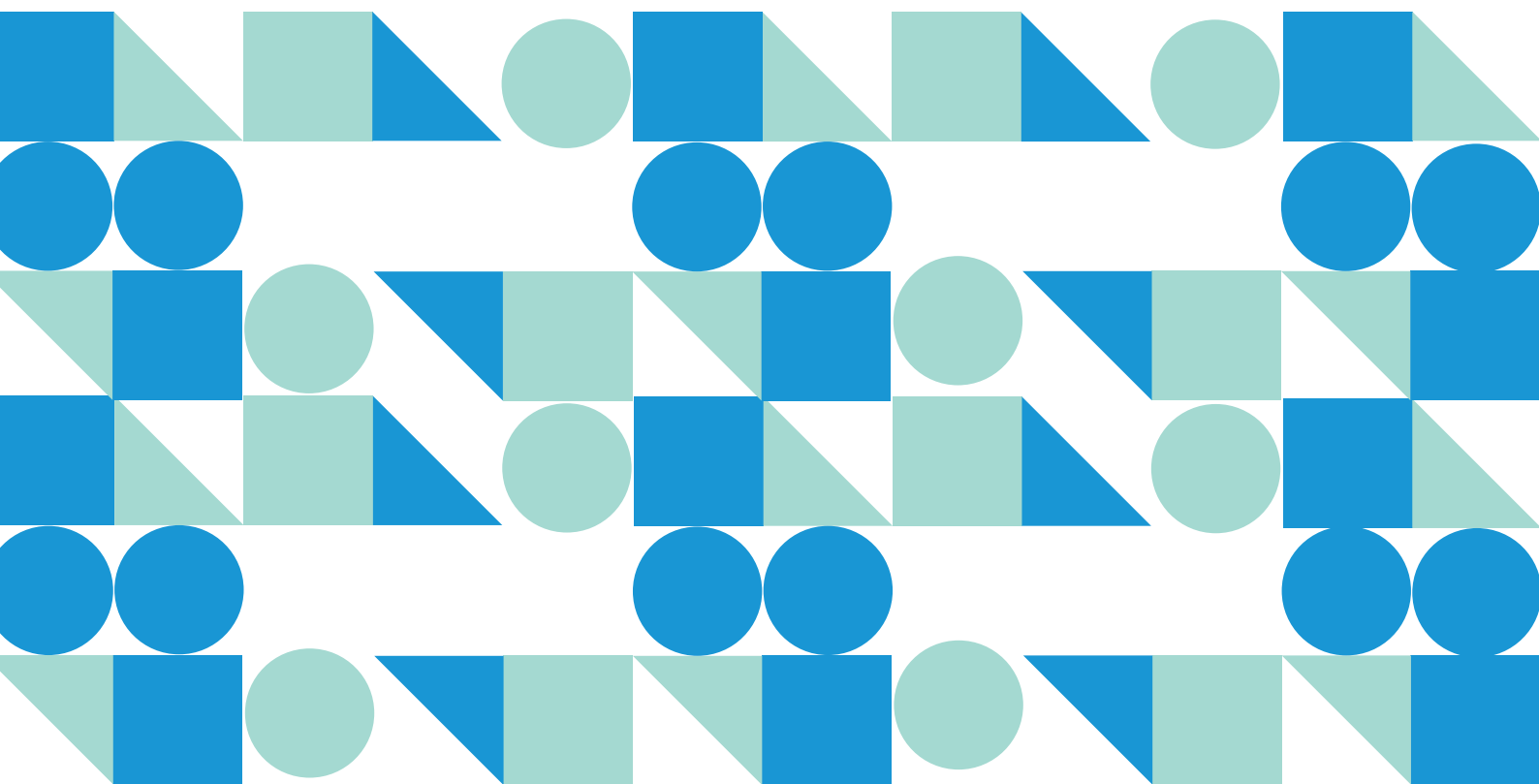




Research paper

The online job vacancy market in the EU

Driving forces and emerging trends





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Europe 123, 570 01 Thessaloniki (Pylea), GREECE
PO Box 22427, 551 02 Thessaloniki, GREECE
Tel. +30 2310490111, Fax +30 2310490020
Email: info@cedefop.europa.eu
www.cedefop.europa.eu

Mara Brugia, *Acting Executive Director*
Tatjana Babrauskiene, *Chair of the Management Board*

Foreword

In today's dynamic world, understanding job requirements and being able to react to emerging skill needs is key to addressing and preventing skills mismatch. It is crucial for citizens, employers, training providers, career guidance counsellors and policy-makers. Evidence helps not only in designing or reforming education and training programmes, but also in supporting individuals as they make the education, training and career choices to develop and match their skills to labour market needs and rapidly changing workplaces.

Developing sound evidence on skills to support decision-making is one of the key strands in the 2016 European Commission *New skills agenda for Europe* ⁽¹⁾. The agenda recognises the challenges of developing reliable information for education and labour market actors at different levels in a context of rapid change; it also highlights the potential of using the internet and big data analysis to improve data on skill needs and trends.

By examining online job portals as a source for developing labour market intelligence in real time, this report supports the ambitions of the new skills agenda. Over recent decades, these portals have become important recruitment and job search tools, easing skills matching. More recent is analytical work based on the rich source of real-time labour market information available in the online job vacancies (OJVs) these portals provide for almost all occupations. Sound analysis of such information can provide insight into job-specific and other skills required in particular occupations in different countries or regions. It also supports assessing systematically the other characteristics of the jobs on offer and helps identify emerging skill needs much more than is possible using conventional sources.

Cedefop has explored online job vacancies as a new source of real-time information across the EU. Drawing meaningful conclusions from these data and turning them into policy-relevant labour market intelligence requires sound understanding of online job markets and their importance in employers' recruitment strategies. Cedefop has systematically mapped the online job portal landscape in all EU Member States. This has helped in understanding the main features of online job markets and signalling important trends impacting them.

⁽¹⁾ See <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52016DC0381&from=EN>

Detailed information on the most relevant OJV portals in each country offers the necessary context for meaningful interpretation of data retrieved from them.

This report is published as part of Cedefop's *Real-time labour market information* project. Detailed information on data collection, methodology and analytical approach is available in a dedicated Cedefop publication ⁽²⁾. Country results based on the analysis of collected online job vacancies will be released in 2019 and 2020.

The synthesis of findings across all EU countries presented in this report analyses the drivers influencing the use of such portals in recruitment and job search, the structure of online job markets, the role of public and private players and the factors shaping the format and content of online job vacancies. We are confident that this first comprehensive overview of online job markets in the EU will support our work in the coming years and will stimulate further research work.

Mara Brugia
Acting Executive Director

Alena Zukersteinova
Acting Head of department for
skills and labour market

⁽²⁾ Cedefop (2019). [Online job vacancies and skills analysis: a Cedefop pan-European approach](#).

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Taking the work of the research consortium as a starting point, experts from Cedefop's department for skills and labour market Jasper van Loo and Vladimir Kvetan prepared this report for publication, under the supervision of the acting Head of department Alena Zukersteinova. Special thanks go to Cedefop expert Jiri Branka for reviewing the publication.

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Executive summary

Although online job vacancies (OJVs) are used for analysis in various research projects, most work focuses on individual or a small number of countries. It does not necessarily include all available information sources and typically does not use overarching (skills) classifications (such as ESCO) to analyse results. This makes it difficult to compare results cross-nationally and to develop policy-relevant labour market intelligence. A more systematic approach and a common framework are needed to develop the full potential of analysing OJVs in Europe.

With its project *Real-time labour market information on skill requirements: setting up the EU system for online vacancy analysis*, Cedefop is creating the infrastructure to gather information from the most important online job vacancy portals (OJV portals) in real time across the EU ⁽³⁾. When meaningfully analysed and turned into intelligence, this information can complement skills intelligence developed using traditional methods. Real-time labour market intelligence can inform the development or reform of education and training programmes and ease the decisions that have to be taken to ensure that people's skills meet the needs of rapidly changing workplaces.

Understanding online job markets and their importance in employers' recruitment strategies is a precondition to interpreting results based on the analysis of OJVs on online job portals. For this reason, Cedefop has systematically mapped the OJV portal landscape in all EU Member States. This report examines this landscape and analyses the trends that shape it. It reports on the drivers influencing the use of online job portals in recruitment and job search and the factors influencing the format and content of OJVs. The results provide the contextual information needed for interpreting findings developed in later stages of the project ⁽⁴⁾.

⁽³⁾ The work builds on the 2015-16 Cedefop's feasibility study that developed a pilot system for collecting and analysing online job vacancies in five countries (Czechia, Germany, Ireland, Italy and the UK).

⁽⁴⁾ More detailed information on the online labour market in EU Member States is available in 28 national background reports on Cedefop's website <http://www.cedefop.europa.eu/en/publications-and-resources/country-reports/online-job-vacancy-market>. Information on data collection, methodology and the analytical approach used in the project to turn information from online job portals into skills intelligence is available in Cedefop's booklet *Online job vacancies and skills analysis: a Cedefop pan-European approach*.

Drivers of use of OJV portals for recruitment and job search

Most EU Member States are currently experiencing an economic recovery after a deep recession (as in south European countries) or continuing economic growth largely uninterrupted for several years (as in Germany). Economic revival leads to a growing demand for jobs. In many countries this triggers labour shortages, causing employers to advertise their job openings more widely. This means OJV portals become important even for jobs that were traditionally promoted via other channels, strengthening their role as recruitment tools. Positive economic developments go hand-in-hand with structural trends which transform employers' skills needs – leading to skills shortages in many economic areas – and increase the importance of digital technologies.

Labour shortages are often aggravated by replacement demand arising from demographic changes and outward migration, especially in central and eastern Europe countries. Employers facing labour shortages shift the focus from demanding requirements, such as qualifications, skills and personality traits, to making their OJVs appealing to jobseekers by providing more information on the company, working conditions and advantages of working for the company. As a result, OJVs are becoming more detailed and diverse, with considerably more information than in past.

The online job market landscape

The main actors in online job markets are public employment services (PES) – managing public portals offering free services for employers and jobseekers – and private OJV portals which tend to provide access to jobseekers free-of-charge while charging employers for their services ⁽⁵⁾. Private portals commonly use 'pay per ad' or 'pay per click' pricing models, but also offer associated fee-based services like employer branding or scanning their CV databases for suitable candidates ⁽⁶⁾.

⁽⁵⁾ Private OJV portals include primary job portals with a national or international focus, international aggregator job portals, online job portals connected to national newspapers, social media, classified ads portals and websites of large temporary work agencies.

⁽⁶⁾ It is important to note that while the business models follow common patterns, prices for posting a vacancy differ considerably between locally run portals (e.g. EUR 90 in Hungary and between EUR 300 and EUR 700 in the Netherlands) and large

Table 1. **The role of PES in the online job market compared to the level of market concentration**

	PES as a strong player (compared to private online job portals)	PES as an important player (under certain conditions/for certain target groups)	Private OJV portals dominant players
Highly concentrated online job market (few players dominate)	CY, DK, FI, FR, HR, SE	CZ, EE, LV, MT, SK	ES, SI
Partly concentrated online job market (several influential players)	BE	LT	BG, HU, PL, PT
Fragmented online job market (many different players)	NL	AT, DE, RO	EL, IE, IT, UK

NB: The countries in the table have been allocated based on analysis of the country reports (available online on Cedefop's website <http://www.cedefop.europa.eu/en/publications-and-resources/country-reports/online-job-vacancy-market>).

While the Luxembourg PES accounts for about 7% of all recruitment and appears to be weak, it is not possible to say to what extent the online job portal market is dominated by the two private job portals in the country. Consequently, the country cannot be unequivocally allocated to one of the cells in the table.

Source: Cedefop.

The dynamics of the OJV portal landscape in a particular country result from the strength of the PES compared to private portals alongside the overall consolidation of the market (Table 1). Most countries can be allocated to clusters based on their geographic location, population size and economies. For example, north European countries have stronger PES systems (Denmark, Finland and Sweden) in relatively concentrated markets. Online job markets in larger western European countries, with larger and more diverse labour markets (Germany, Italy, Netherlands and the UK), are more fragmented; in some cases the role of the PES in the online job market is less pronounced. In smaller countries the online job market tends to be more concentrated, involving a few dominant players (Estonia, Cyprus, Latvia, Malta, Slovenia and Slovakia), while the role of the PES in the online job market varies.

international brands like Stepstone (e.g. EUR 490 in Austria compared to EUR 1 000 in Germany).

Factors impacting the use of OJVs

Several factors influence the use of OJVs as a recruitment channel:

- (a) economic sector: employers active in the ICT sector tend to use OJV portals more to publish their vacancies compared to employers in construction and hospitality;
- (b) occupation: OJVs are published more frequently for skill shortage occupations. In many countries, the most widely advertised OJVs on private job portals are for ICT specialists;
- (c) type of job and skill level required for the position: OJVs for white-collar ⁽⁷⁾ jobs are more common than for blue-collar jobs;
- (d) size and outreach of the company: generally, large international companies are more likely to publish their vacancies as OJVs than smaller ones;
- (e) geographic location: there are differences in OJV use between regions in countries like Belgium, Germany and Italy and between sparsely populated rural regions and urban centres;
- (f) context in which OJVs operate: this includes the legal framework in place regulating the content of vacancies and the operation of OJV portals, the extent to which it is enforced in practice, and different manifestations of labour shortages and business model/focus of online job portals.

OJVs possess considerable signalling power. The ways employers shape them, in terms of format, wording and dissemination channel, influence how attractive a position is in the eyes of particular target groups. Detailed information on which tasks the job entails and which skills and competences are sought after can motivate applicants. Although there are differences between EU Member States, in most countries, soft skills and personality traits are becoming increasingly important and this is reflected in OJVs across sectors and occupations. The soft skills and competences commonly demanded in most countries include ability to adapt to change, flexibility, assertiveness, responsibility, teamwork, confidence, reliability, initiative, creativity, analytical thinking, persuasiveness, decisiveness and ability to communicate.

In selective labour markets such as Germany or France, formal qualifications, fields of study, the profession and work experience continue to be the main factors driving recruitment decisions. In contrast, references to

⁽⁷⁾ 'Office, clerical, administrative, sales, professional, and technical employees, as distinguished from production and maintenance employees who are usually referred to as blue-collar workers' (OECD glossary of statistical terms, <https://stats.oecd.org/glossary/index.htm>).

particular qualifications are rare in countries with a less selective and more informal labour market, where the main distinction is often between graduate and non-graduate jobs.

Among required hard skills requested in OJVs, experience with particular software packages is most common, including for non-IT jobs. English language skills are widely demanded, while other foreign language skill requirements also play an important role, reflecting growing employment in retail and service sectors. In some occupations employees need to have, by law, a specific certification, licence or warrant to perform the job, as is the case in medical professions and legal and financial sectors. Specific driving/operating licences (truck, fork lift operator) are among the hard skills required most often for blue collar occupations.

OJVs advertising low-skilled positions and for blue-collar work tend to contain less information on formal qualifications, skills and competences. OJVs tend to be shorter and reduced to basic tasks, request experience in similar functions instead of lengthy descriptions of hard or soft skills, and commonly include being responsible as a desirable personality trait. In contrast, OJVs advertising positions requiring higher qualification levels or specific skills sets tend to contain significantly more information on required skills and competences.

Although factors influencing the use of OJVs and their shape may interact in complex ways, it is possible to identify three stereotypical forms:

- (a) those presenting requirements directed at the candidates and assuming a demanding tone (the lists can be more or less extensive and can include both formal qualifications/hard skills and soft skills/personality traits);
- (b) those containing a neutral description of tasks and the associated formal qualifications and soft skills/personality traits;
- (c) those used as a tool for employer branding focusing on attracting suitable candidates through various offers, considering the profile of desired candidates as a whole.

Future trends shaping the OJV market

Persisting labour market trends will aggravate labour shortages in many countries and drive employers towards using as many channels as possible. Considering the resources needed for posting the vacancy and filtering out suitable candidates, OJVs will likely become the preferred means of recruitment in the near future and – as a result – their number is expected to grow. At the same time, new media offer opportunities to interact electronically with jobseekers. Standardisation and classification systems will be needed to manage

the resulting large amounts of information. Standardisation can be expected to have an impact on the information fields in OJVs.

Due to the proliferation of employer branding as a tool to attract candidates, information on the work environment and employment conditions is likely to become more prominent in OJVs. It is also likely that trends towards focusing on skills and work attitudes rather than formal qualifications and other requirements will continue. Other developments will also likely continue impacting the OJV landscape and the use and shape of OJVs in the coming years: further consolidation of the market; emergence of more elaborate matching services of employers/OJVs and potential candidates; and increased importance of social media and recruitment apps on mobile devices.

In the more distant future, OJV portals are expected to evolve towards communication platforms where employers present their companies in an all-encompassing manner. Traditional OJVs are likely to be used less frequently, with many employers engaging directly with jobseekers and flexibly tailoring job offers to them. Another trend, already visible in some countries, is the tendency to combine written information with other types of communication – such as videos – to inform jobseekers about the job vacancy and clarify expectations. This is likely to lead to less textual information in OJVs on the work environment and perks and benefits, as these aspects lend themselves more easily to being presented in videos.

Challenges in collecting and analysing OJVs

The OJV portal landscape in EU Member States is heterogeneous. When selecting OJV portals for gathering data it is important to ensure sufficient coverage, especially in countries with a fragmented online job market or where OJV portal use is low. In countries with a fragmented market, more OJV portals need to be included to provide substantial coverage; in countries where OJV portals are used less, results need to be carefully scrutinised to ensure that they represent reality.

Online job markets are also highly dynamic. If constellations change due to actors being empowered or sidelined, shifts in coverage and content of OJVs can occur. It is essential to ensure that developments in online job portal landscapes are systematically monitored and considered in data collection.

Keeping a close eye on labour market developments and trends in recruitment behaviour can help improve understanding of how OJVs are likely to evolve in the near future and to what extent they will affect recruitment and job

search patterns in different sectors and occupations and for various qualification levels.

While collecting and analysing OJVs offers a promising opportunity to develop labour market and skills intelligence supporting and shaping the changing world of work, the analysis in this report shows that the following challenges need to be considered:

- (a) there is a considerable bias in the coverage of occupations, sectors, firm sizes and regions on OJV portals. This needs to be addressed through careful selection of websites to cover a wide range of employers;
- (b) OJVs often contain information which is not classified (e.g. job titles on private OJV portals) or categorised (e.g. in fields containing standardised information such as working hours and contract type). This means that complex data extraction and manipulation techniques are needed to make the information suitable for analysis;
- (c) information in OJVs on formal qualifications, skills and personality traits varies considerably depending on the country, sector, occupation and skills level of the advertised position. Business models of OJV portals also play an important role. Combining different sources can help close the information gaps in certain dimensions;
- (d) references to skills can potentially be found in many different parts of OJVs. Skill requirements may be implied in descriptions of the workplace or employer mission. This implies that innovative text analysis is required to extract all information relevant to skills from OJVs;
- (e) the use and meaning of terms to communicate skill requirements in OJVs is highly dependent on context and reflects language and culture. Innovative ways of text analysis are needed to capture different meanings and connotations.

CHAPTER 1.

Introduction

Using online job vacancies (OJVs) to develop insights into emerging labour market and skill trends is a promising way to monitor developments in real time, and can complement more traditional types of skills intelligence. OJVs mirror trends within the occupations they advertise and experts have pointed toward the benefits of using them to develop labour market and skills intelligence (e.g. Rafaeli, 2000; Rieucan, 2008).

OJVs are job advertisements that appear online on a portal or a company website. They usually have two parts:

- (a) structured information specifying the vacant position and providing information such as the type of contract offered, working hours, job location;
- (b) unstructured text fields, where employers can present their requirements of potential candidates (such as their credentials, skills and work experience), include information on the company and the workplace, or describe the benefits associated with the position.

The term 'online job vacancy portal (OJV portal)' applies to specialised websites allowing employers to post OJVs either for free or – more often – against payment. OJV portals are heterogeneous and take on a wide range of forms (Table 2).

Table 2. **Types of OJV portal**

Type	Description/examples
Public OJV portals	Portals managed by public employment services (PES)
Private OJV portals	Portals operated by national companies or international consortia (e.g. Axel Springer Media)
Aggregators	Portals collecting advertisements from other OJV portals and reposting them (e.g. Indeed, Jobrapido)
Recruiting agencies	E.g. Adecco, Randstad and Manpower
Newspapers OJV portals	E.g. Guardian Jobs
Classified ad portals	Online portals for small advertisements in categories such as 'for sale' and 'services' that also advertise jobs

Source: Cedefop.

OJV portals either have universal coverage of sectors/occupations or concentrate on publishing job adverts in specific market niches (such as regions, sectors or skills levels). They can be used for recruiting labour nationally or at global/European scale.

Even as early as the beginning of the 2000s, human resource (HR) experts were appraising the growing influence of OJV portals for HR strategies and predicting the growing importance of this recruitment and job search tool (Burton-Jones, 2001). Using online job portals for recruitment and job search has the following resource-saving advantages (see e.g. Freeman, 2002):

- (a) reduced transaction costs for both parties: the increased visibility of OJVs helps employers and jobseekers overcome the regional or local focus inherent to more traditional recruitment paths, such as newspaper ads. Tools that enable customers to choose between the pricing models most suitable for their purposes, promote the use of OJVs in recruiting and job search even further;
- (b) quicker clearing of the job market: faster flow of information is considered to lead to reduced frictional unemployment that benefits both employers and jobseekers;
- (c) better matching between candidates and vacancies: by using OJV portals and associated matching tools, it is easier to reach the right target group and assess not only the hard skills, but also the soft skills of potential candidates.

Analysing online job portals to develop labour market information (LMI) and intelligence is not new. In parallel to their role in developing recruitment and job search strategies and easing skills matching, OJV portals are increasingly used for this purpose ⁽⁸⁾. Companies engaged in this type of work usually collect OJVs to extract information on job titles, associated skills and other variables (such as location and salary). However, they typically focus on a small number of countries and do not necessarily include all available information sources. Results can be difficult to compare cross-nationally as overarching (skills) classifications (such as ESCO ⁽⁹⁾) are typically not used. Many results are not publicly accessible.

⁽⁸⁾ Burning glass technologies (BGT) a US-based analytics software company develops real-time labour market information based on the analysis of OJVs collected from online job portals and company websites in English-speaking countries around the world. Textkernel, a Dutch company collecting and analysing OJVs uses artificial intelligence, machine learning and semantic technology in several EU countries to develop labour market intelligence.

⁽⁹⁾ European skills/competences, qualifications and occupations classification: <https://ec.europa.eu/esco/portal/home>

With much of the research on OJVs taking a country-specific view or comparing a limited number of selected countries (e.g. Rieucan, 2008 for Spain; Kureková et al., 2012 for Slovakia; Marchal et al., 2007 for the United Kingdom and France; Fabo et al., 2017 for central and eastern Europe), Europe-wide comparisons are rare (e.g. Kureková et al., 2014). This work can shed some light on labour market developments, but a more systematic approach and a common framework is needed to develop the full potential of analysing OJVs in Europe. Therefore, Cedefop is collecting information on skills and jobs from the most important OJV portals in all EU Member States in 2018-20, using a harmonised methodology. The approach provides added value by:

- (a) generating insights about employers' skill requirements regardless of the size of the online job portal markets;
- (b) covering a wide range of European languages;
- (c) producing EU-wide comparable data;
- (d) providing in-depth analysis of data collected from different sources;
- (e) harnessing the full analytic potential residing in the ESCO classification of skills and competences and validating it empirically.

Cedefop's 2015-16 feasibility study, which set up a pilot system to analyse OJVs in five EU Member States, signalled the need to collect additional information on the rationales guiding employer and jobseeker use of OJV portals in recruitment and job search. Preparing for the roll-out of the system across the EU, Cedefop collected in-depth information on the functioning of online job markets in all Member States. The findings of this 'landscaping' activity will inform data collection and analysis carried out between 2018 and 2020 and ease interpretation of findings. To our knowledge, it is the first time the online job market has been systematically mapped and analysed across the EU ⁽¹⁰⁾.

The following themes – which are central in current research – were considered in shaping the landscaping activity:

- (a) labour market developments driving the use of online job portals in recruitment and job search: the use of OJV portals depends on changes in labour market supply and demand, which affects the balance of power in the

⁽¹⁰⁾ Cross-national portals were also considered in the landscaping activity. These include the EURES portal, which aggregates the OJVs from the PES online job portals of the 28 EU Member States and cross national portals. However, due to their specificities these were not included in this cross country comparative study. Reports on EURES and cross national OJV portals:
<http://www.cedefop.europa.eu/en/publications-and-resources/country-reports/online-job-vacancy-market>.

- hiring relationship (Lorenzi-Cioldi et al., 2010). In demand-driven labour markets, where skills and/or labour are in short supply, employers compete for potential candidates more intensively and therefore are more likely to use OJV portals to expand their search radius. In this situation, jobseekers have more bargaining power and employers need to consider how they can attract suitable candidates. In supply-driven labour markets, where vacant positions are rare and the likelihood of finding a suitable candidate is high, employers may try to offer jobseekers sub-market working terms and conditions (Marchal et al., 2007). Moreover, it has been observed that the patterns of OJV portal use differ depending on the skills levels required for the position and/or the sector (Sasser Modestino et al., 2014);
- (b) structures and functions of labour market intermediation services in recruitment and job search: this line of research focuses on the constellations of different types of online labour market intermediaries and their roles in multiplying the interactions between jobseekers and employers (Marchal et al., 2007; Freeman, 2002). It highlights the need to consider the wide variety of different online job portal business models in more detail. For example, the OJV portals of PES have a clear focus on their target groups and need to adhere to the regulatory framework, clearly demarcating their goals and outreach in relation to private OJV portals. This line of research also addresses the division of power in hiring relationships and considers the strategies developed by companies and jobseekers aimed at maximising the efficiency of their search processes (Marchal et al., 2007);
 - (c) framing of recruiting processes: OJV portals can influence the behaviours of employers and jobseekers. Standardised formats for presenting job offers (such as search-engine toolkits, predefined lists and keywords and input fields) and associated payment models (charging the employers per job posting or on the basis of user clicks on their vacancy) shape the preferences of employers and jobseekers (Messum et al., 2016; Marchal et al., 2007);
 - (d) signalling power (Rieucan, 2008) of OJVs: here, the focus is on studying the construction and management of organisation image through presenting the company and workplace in a certain way. This involves using company logos and pictures, providing specific types of information and using specific wording to attract particular candidates (Rafaeli, 2000). As a result, the focus of this research field is on the use of stereotypes and the polarisation of employer requirements for high-status/high-skills positions compared to low-status/low-skills positions (Lorenzi-Cioldi et al., 2010);

- (e) trends in the use of OJVs: there is a flourishing research field addressing new types of recruitment tools such as social media. It shows how these inform the expectations of employers and jobseekers towards OJVs and influence the tools and business models used by OJV portals (Pais and Gandini, 2015). This concerns not only the use of professional social media websites (e.g. LinkedIn) or social media networks (e.g. Facebook), but also online labour markets on freelance platforms like Elance (Gandini et al., 2016).

To map the job portal landscape and gain more insight into the format and content of OJVs in EU Member States, these topics were used to develop the following questions guiding the landscaping activity:

- (a) which drivers influence the supply of and demand for labour, as well as the utilisation of skills in the workplace, thus facilitating or hindering the use of OJV portals in recruitment and job search?
- (b) how is the online job market structured in terms of players and their business models? How do different business models frame recruiting processes?
- (c) to what extent and how are OJV portals used in recruitment and job search? What factors does their use depend on?
- (d) which factors influence the format and content of OJVs?

Before addressing these questions, Chapter (2) describes in more detail how the landscaping activity was set up and how the information was collected. Chapters 3 and 4 present the main results, while Chapter 5 reports on expected future trends. The concluding chapter summarises the main findings. More detailed results can be found in dedicated reports prepared for all EU Member States available on Cedefop's website ⁽¹¹⁾.

⁽¹¹⁾ <http://www.cedefop.europa.eu/en/publications-and-resources/country-reports/online-job-vacancy-market>

CHAPTER 2.

Mapping the OJV portal landscape

2.1. Approach to data collection and analysis

International country experts (ICEs) ⁽¹²⁾ were engaged in exploring the available data and information on the use of OJV portals in recruitment and job search in the EU Member States: the landscaping activity. Their task was to describe the OJV portal landscape and search for evidence of the relevance of OJVs for the labour markets in their countries. Since the ICEs needed to use different approaches covering various data sources in the landscaping activity, Cedefop developed – in close collaboration with the research team – a methodology to ensure common focus and comparability of results.

As the ICEs were collecting data/information from dispersed sources, it was crucial to categorise these sources and assess their differences in quality. Combining quantitative and qualitative data/information of different nature can result in non-comparable or even contradictory results, so the ICEs spent considerable time analysing the conditions under which the data/information was created, assessing their quality, and combining them into a coherent narrative.

2.2. Search strategies

To identify possible information sources, the ICEs searched Google and Google Scholar using key terms in their national language(s) and in English. Subsequently, they searched directly for sources at organisations likely to have further information that can be used to describe the OJV portal landscape, such as:

- (a) websites of the national statistical offices for national job vacancy surveys or other surveys and databases. This source was most successful in cases where the job vacancy survey contained detailed information (e.g. in Germany and the Netherlands) or the national statistical office had focused on digitalisation in recent years (e.g. Slovenia);
- (b) PES data on OJVs, either available on the PES website (e.g. for Estonia) or per request from the PES (e.g. Hungary and Malta);

⁽¹²⁾ Annex 2: list of the ICEs and their organisational affiliations.

- (c) academic databases containing either research articles (e.g. cairn.info in France) or bachelor, master and PhD theses. These can be centralised, as is the case in Germany, or specific to single universities like in Portugal. For most countries, there were no PhD theses directly relevant to the landscaping activity and it was left up to the ICEs to decide whether they would use the insights from bachelor and master theses in their research. In countries where abundant information was available (e.g. Finland), the ICEs merely viewed the references, while in countries with scarce information the findings from bachelor and master theses were incorporated in the country report (e.g. in Estonia and Slovenia);
- (d) publications of the central bank and national ministries were used to trace references to the OJV landscape (as with. the central bank of Malta and the economic policy directorate in the Ministry of Finance in Malta);
- (e) websites of national research institutes engaged in labour market research (such as the national training fund, National Institute of Education and Research Institute for Labour and Social Affairs in the Czechia);
- (f) websites of employers' and HR associations;
- (g) websites of OJV portals (e.g. CV-Online in Estonia, Latvia and Lithuania) and recruitment agencies (e.g. in Romania), which often publish their own surveys on recruitment and job search channels;
- (h) websites of data analytics companies such as Textkernel, which provide analyses on the OJVs in Belgium, Germany, France, Netherlands, and the UK.

Newspaper articles covering developments in the OJV portal landscape or recruitment/job search patterns were also a valuable information source (e.g. in Czechia and Poland). The ICEs discarded information that was older than eight years or originated from career advice websites.

2.3. **Classifying data and information sources**

The heterogeneity of data made systematic assessment of its soundness necessary using scientific quality criteria. For this, the available sources were divided in three categories, each having particular advantages and disadvantages.

Public data/academic research provided by public organisations (PES, statistical offices, state agencies, universities, research institutes) is easily accessible and satisfies scientific quality criteria. It has a high level of continuity, which enables undertaking longitudinal analyses. These advantages were

particularly obvious in the case of Germany and the Netherlands, where the national vacancy surveys contain questions on the use of OJV portals by employers in the recruiting process. However, the time-consuming processes of collecting, processing, analysing and publishing public data result in a considerable time-lag in disseminating results ⁽¹³⁾. This is challenging, as even significant changes in the OJV portal landscape become visible only years later.

In most countries, no significant academic research was found for online job portals or OJVs. Spain, France, Italy, Slovakia, and the UK are exceptions, as articles on the content of OJVs are available.

Research/surveys of interest groups (such as sectoral associations, consultancy firms and recruitment agencies) typically use scientific methods. However, they do not always comply with scientific standards. This is linked to their different focus: interest groups want to prove the relevance of a certain phenomenon/target group and are inclined to choose methods or target groups for their research that best convey the intended message. As research is often undertaken to cover a topical issue, there is little motivation for follow-ups, making longitudinal analyses difficult. Despite this, research/surveys by interest groups can be valuable, because they are often the first to address current issues and so signal important trends ahead of academic research. Further, research by interest groups covers topics relevant to the research questions in the project. In many countries it is the main source of information on the subject.

There are considerable differences between countries: Germany, France and the UK have lively research areas created by interest groups while there is no such research in Greece and Cyprus. This is partly linked to the size of the country and also to the relevance of OJV portals in recruitment and job search.

Expert opinions were collected across different organisations: statistical office, PES, HR organisations/employers, OJV portal owners. As many ICEs conducted more than the four mandatory interviews, the expert opinions made a valuable contribution to understanding and describing the OJV portal landscape. Nevertheless, the feedback of the ICEs showed the need to be well aware of possible bias in the interviews as some of the experts wished to show their organisation in a good light and present it as especially competent or relevant. Such disadvantages cannot outweigh the advantages of using expert interviews in this research: they provided specific and timely expertise, which would have been difficult to access otherwise.

⁽¹³⁾ This was, for example, the case in Germany where the latest publicly available data from the national vacancy survey were three years old.

The identified sources were considered relevant if they could provide information on:

- (a) the share of existing vacancies on online job portals (PES/private);
- (b) the use of OJVs per sector/occupation/qualification level/region;
- (c) the skill requirements present in OJVs.

2.4. Main research challenges

In countries with a wealth of information on different aspects of the use of OJV portals by companies and jobseekers, the main achievement of the ICEs was to assess the quality of the sources and analyse the data/information using the research questions guiding the landscaping activity. This was the case in Germany, France, Netherlands and the UK, where strong interest groups or single actors (such as sectoral associations, online job portal owners or big data analytics companies) possess and publish relevant information.

In other countries the available data and information were scant, as was the case in Bulgaria, Greece, Croatia, Cyprus and Luxembourg. There, the ICEs had to bridge knowledge gaps by connecting different sources and relying more on explorative methods such as extended interviews with experts who had in-depth knowledge of the OJV portal landscape. This helped ICEs provide valuable information on how OJVs are used in recruitment and job search as well as insights into their format and content.

According to the ICEs, the best informed experts were the HR representatives as well as those of employers/employers' associations and job portal owners. Some experts representing sectoral associations had extensive knowledge of the use of OJV portals in recruiting and job search in their own sector, but lacked understanding of developments in other sectors. In these cases, the ICEs conducted additional interviews to acquire further insight.

In some cases, ICEs conducted their own surveys to fill the gaps arising from the lack of public data/academic research and research/surveys of interest groups (Box 1).

Box 1. Examples of additional information collection in Bulgaria and Italy

Between 27 April and 5 May 2017, the Bulgarian industrial association conducted a survey among 200 employers representing SMEs and large enterprises across Bulgaria. At the same time, 400 unemployed individuals from large cities across the country who were registered with the PES were surveyed. Both were asked to:

- (a) identify their preferred channel for recruiting/job search;
- (b) indicate the main advantages/disadvantages in using an online job portal in recruitment/job search;
- (c) define and rank the most popular online job portals in Bulgaria.

The findings of the survey were validated by a Delphi panel of experts and led to the final assessment that private online job portals covered 73% of existing vacancies in the Bulgarian labour market. The survey also indicated that 90% of OJVs were published on five online job portals.

In Italy, the labour market information tool WollyBi ⁽¹⁴⁾ was used for comparing the number of OJVs with data from other systems measuring labour market vacancies. The two major benchmarks were:

- (a) the main annual skill and occupation survey Excelsior, analysing future occupational needs of companies. As employers tend to report current vacancies rather than future ones, it can be considered as a substitute for a vacancy survey;
- (b) all the hirings that occur in the economy recorded in administrative data, measuring the totality of filled vacancies as a result.

Comparing these different data sets revealed that the distribution of OJVs closely matches that of the administrative data. However, OJVs tend to be overrepresented in the northern regions (Emilia Romagna, Lombardia, Veneto) when compared to the southern regions (Campania, Puglia, Sardegna, Sicilia). Further, high-skilled technical occupations in the manufacturing sector are overrepresented among OJVs, while low- and medium-skill occupations in the service sector are underrepresented.

Source: Cedefop.

Despite the challenges encountered in identifying and combining different data sources, the ICEs were able to generate a multifaceted picture of the use of online job portals and OJVs in all EU Member States. The findings are presented in 28 country reports, which were completed in early and mid-2018 ⁽¹⁵⁾.

⁽¹⁴⁾ WollyBi (<http://www.wollybi.com/en/>) is a monitoring tool developed by CRISP for the Italian labour market. It is a well-established tool that has been collecting data from online job portals since February 2013.

⁽¹⁵⁾ Available on Cedefop's website <http://www.cedefop.europa.eu/en/publications-and-resources/country-reports/online-job-vacancy-market>

CHAPTER 3.

The online job market in the EU

3.1. Trends driving online recruitment

As outlined in Chapter 1, OJV portals fulfil important transparency and signalling functions in labour markets, contributing to better matching of labour supply and demand. The structure and outreach of OJV portal landscapes are influenced by:

- (a) indirect factors arising from the structural and institutional framework, in which OJV portals operate and develop: the general economic structure and current economic situation of a country, population dynamics resulting from migration and demographic changes as well as labour market reforms. The consequent shortages/surpluses in certain sectors or for certain skills levels influence the recruitment and job search endeavours of employers and jobseekers. They also affect the business models and the focus of OJV portals;
- (b) factors exerting a direct influence on OJV portals such as the general level of digitalisation in a country, the changing patterns of work and the specific tools and formats available in recruitment and job search.

3.1.1. Indirect factors driving online recruitment

Economic recovery in most EU Member States over the past two to three years has caused a significant upsurge in labour markets, reflected in decreasing unemployment. This is usually accompanied by growing demand for jobs. However, there is evidence that job creation differs across sectors and occupations, which have been able to profit from economic recovery to varying extents. In Belgium, for example, social for-profit occupations, technicians, truck drivers, cleaners and IT professionals are in high demand. In Denmark, occupations reporting the highest numbers of unsuccessful recruitments are sales assistants as well as crafts and trades and ICT professionals; the sectors experiencing most difficulties in recruitment are construction, hospitality and ICT. Vacancy times resulting from skills shortages can be considerable: in Germany, for example, the average number of days a job vacancy remained unfilled was 102 in 2017, an increase of seven days compared to the previous year.

Consequently, employers experience pressure to use all possible channels to maximise the chances of successful recruitment: this concerns not only the use of OJV portals, but also social media and labour market intermediaries such as temporary work and recruitment agencies (e.g. Belgium, Malta and Austria).

Presenting general career opportunities and specific vacancies on corporate websites in the context of a company's philosophy or mission, employers are trying to address a larger audience (e.g. Bulgaria and Denmark). In times of growing competition for skilled labour, companies need to attract the attention of those who are already employed (as in Bulgaria, Czechia, Germany and Austria). This has direct consequences for the operators of OJV portals as they need to devise more specialised services for companies to help them identify and reach out to their target groups.

Employers seek to make their OJVs more appealing by:

- (a) including logos and a general introduction to the company (e.g. Bulgaria);
- (a) drawing attention to the 'soft factors' such as work atmosphere (e.g. Estonia and Hungary);
- (b) including explicit information on the advantages of working for the company, such as benefits or perks associated with the position (e.g. Austria and Romania);
- (c) reducing the requirements for formal qualifications and increasing the demands for skills and competences; employers are prepared to employ those without the necessary formal qualifications (e.g. Belgium, Bulgaria, Austria and Poland). In Romania, for example, IT and automotive companies hire graduates in relevant disciplines regardless of their formal grades and are prepared to develop absent skills.

As a result, the OJVs are becoming more detailed and diverse, containing considerably more information on skills and working conditions.

However, the patterns of economic recovery differ significantly across countries. Southern Europe, where the labour markets were particularly severely affected by the economic crisis, is still grappling with high unemployment despite improved economic performance. Unemployment is particularly high among young people (most notably in Greece, Spain, Croatia, Italy and Cyprus). In Greece, for example, the youth unemployment rate was 41% in 2017, which was almost double the unemployment rate across all age groups (21%).

The demand for labour is not only subject to economic cycles, but also arises from structural developments in the economy and the corresponding responses of the education system. In Bulgaria, for example, transition from production to administrative activities, personal services and support services can be observed. Structural changes usually involve new skill requirements, as in Germany's rapidly increasing digitalisation. Also the growing need to establish and maintain customer relationships in various areas of business increases the importance of skills such as problem-solving with customers, mutual interaction and creative learning (e.g. Finland).

These developments are often accompanied by increasing prominence of tertiary education. Growing popularity of higher education over vocational education and training can be observed in Bulgaria, Poland and Slovenia. In the Baltic States, the attractiveness of higher education has been rising since the 1990s and is seen as supporting the transition to knowledge-based economies. Growing demand can be observed for higher qualified professionals such as scientific, engineering and IT specialists. Increased participation in higher education can lead to labour shortages in occupations requiring medium-level skills. In Latvia, for example, labour shortages are expected in electrical and electronic trades, the mechanical engineering and related sectors, and the food processing and timber processing sectors. The general upgrading of skills bringing about qualitative skills shortages (McGuinness et al., 2018) in mid-skill level occupations is also reported for Belgium, Bulgaria and Spain.

In some countries, these developments have led to polarisation of the work force in high and low-skilled segments (e.g. Bulgaria, Germany, France, Croatia and Italy). In France, despite the increase in the skills level of the working population, 10% of 16 to 29 year-olds still lack basic skills crucial for participating in the labour market. Consequently, they struggle to meet the skill needs arising from the digital transformation of the economy.

Quantitative skills shortages (not enough people to fill available places) are exacerbated by demographic change. In Poland, for example, the effects of demographic decline on the labour market are already visible. In 2003, the number of individuals aged 19 to 24 was 3.9 million, while it had dropped to 2.8 million by 2015. Similar developments were highlighted for Bulgaria, Germany, Spain, Croatia and Latvia. Private OJV portals generally profit from the growing replacement demand (e.g. Spain and Croatia), while some countries have diverging developments in the public and private sectors and need to be considered separately. This is the case in Belgium where the pressure for replacement demand in the public sector has been alleviated by government policies incentivising civil servants to postpone their retirement.

Imbalances in the labour markets are aggravated by outward migration, as is the case in central and eastern Europe countries such as Latvia, Lithuania, Hungary, Poland, Romania, Slovenia and Slovakia. For example, the number of Poles staying abroad for longer than three months was estimated at 2.4 million in December 2015, an increase of 77 000 compared to December 2014. Similarly, 361 000 people have left Lithuania since 2007, one third being 20 to 29 years old.

However, central and eastern Europe countries have become migration destinations of for people from third countries bordering EU territory. Poland, for

example, is attracting workers from the Ukraine to fill shortages not only in traditional sectors like construction or personal and household services, but also increasingly in the skilled professions, especially in the ICT sector. Increasing numbers of third-country nationals are working in Slovakia, especially in executive technical professions in the automotive, mechanical and electrical industries; there is also an equally large group of auxiliary and unskilled workers.

Structural economic changes in combination with demographic dynamics and the resulting skills shortages affect the use of OJVs in recruitment in the following ways:

- (a) OJV portals are used to circulate the vacancies across a broader geographic area and among a wider range of target groups (e.g. Italy and Malta);
- (b) as jobs in occupations/sectors requiring high levels of technical skills (such as engineering, IT) are more likely to be posted on OJV portals, growing numbers of vacancies in these occupations/sectors increase the importance of online recruitment channels;
- (c) older and less qualified jobseekers are reported rarely to use OJV portals as they are less technologically inclined and have weaker bargaining power in the labour market. Consequently, they prefer less competitive and more protected environments than the open and competitive tools offered by OJV portals (e.g. Estonia, Spain, Italy and Portugal). These groups prefer using personal contacts, classified ads portals (e.g. Estonia) with fewer skills-related requirements or 'jobbing platforms' (e.g. France);
- (d) in the context of wide-spread migration, the importance of the European-wide mobility portal EURES is increasing (e.g. Slovenia).

Labour market policy and reforms and developments in other policy fields can have far-reaching impact on the operation and/or outreach of OJV portals, particularly public ones. Most often, changes in social and labour market policies affect PES online job portals. In Belgium, for example, the tightening of conditions to be eligible for unemployment benefits was accompanied by the introduction of more stringent criteria for monitoring job search behaviour. As a result, some jobseekers intensified their job search efforts, while others (such as the low-skilled young) withdrew from the labour market altogether. In the United Kingdom, job searchers claiming either unemployment or in-work benefits are requested to subscribe to the PES online job portal Universal JobMatch, increasing its user base.

Developments in other policy fields can impact the operation and outreach of job portals. This is especially the case in countries where a comprehensive national digitalisation strategy frames discourses on improved and more efficient labour market services through improved matching tools. For example, the

national digital strategy of Malta (2014-20) aims to transform the country into a digitally prospering nation in all areas of society; the personalised online job matching was significantly improved in 2014-17 as a result. In Finland, the development of better skills and jobs matching – one of the key projects of the Prime Minister – aims to facilitate the provision of labour market services in a multi-stakeholder environment, bringing together municipalities and the private sector. Vacancies across different online job portals will be combined into one digital labour market service platform called *Työmarkkinatori*. The aim is to match jobseekers to vacancies with skills assessment tools based on machine learning and open data. Similar efforts are being undertaken in Estonia, where the PES is taking steps to use ESCO skills in the job matching process⁽¹⁶⁾. Increased collaboration with private job portals is planned to harmonise the range of services and matching tools.

Such initiatives tend to take place in small, agile countries with clearly defined digitalisation priorities and a manageable number of stakeholders. The expected immediate effects on the online job portal landscape are:

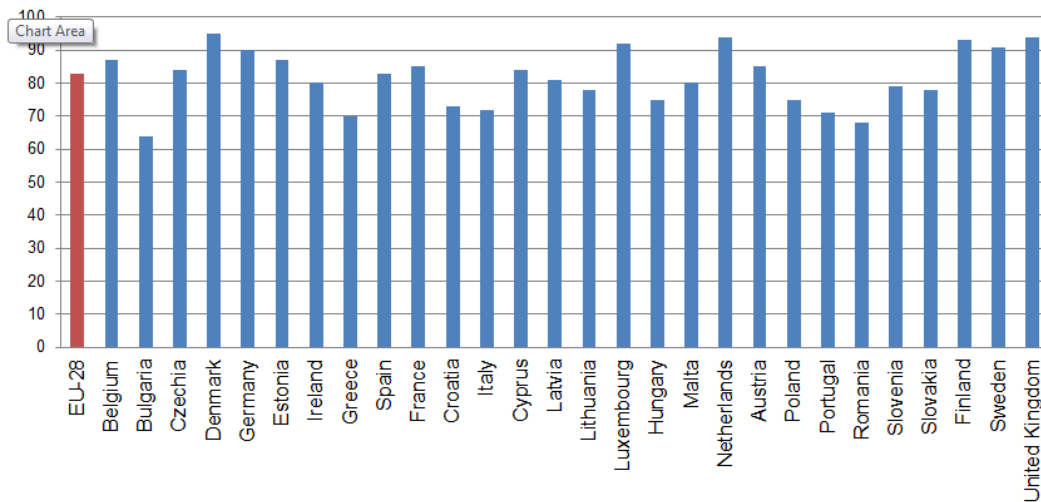
- (a) development of innovative matching tools by the PES that are diffused to private OJV portals through collaborations (e.g. Belgium, Estonia and Finland);
- (b) stronger focus on skills and competences instead of formal qualifications in OJVs, accompanied by sensitisation of employers by recruitment consultants of the PES (e.g. Belgium, Estonia, Malta and Finland);
- (c) widespread introduction of competence-based matching tools, which tends to broaden the content of typical OJVs; this is particularly so for low-skilled positions where information has been scant so far. At the same time, standardisation of OJV content is taking place in many portals, implying fewer possibilities for employers to use authentic phrasing in OJVs (e.g. Belgium).

3.1.2. Direct factors driving online recruitment

The increasing digitalisation of society and the economy are making the use of OJV portals an integral part of recruitment and job search strategies. These reflect the changing patterns of internet use and digital skills among the population. Internet use has either reached a very high level already (e.g. Denmark and Luxembourg) or is continuously rising (e.g. Bulgaria and Romania).

⁽¹⁶⁾ Unlike in Belgium however, employers will need to select competences from predefined lists when they are posting a vacancy.

Figure 1. **Frequency of internet use (% of individuals using the internet at least once a week) (2018)**



Nevertheless, in some countries the readiness of jobseekers to use the internet in their job search is unevenly spread: younger generations are more likely to include OJV portals in their job search strategies (as highlighted in Spain) compared to older jobseekers. Also low-skilled people find it difficult to use the job search and application tools deployed by OJV portals (e.g. Estonia, Spain, Italy and Portugal) in comparison to more highly skilled individuals. Online recruitment and job search will increase over time as the economy and society become increasingly digitalised and with growing availability of digital skills in the population (e.g. Cyprus). Other online channels such as social media (LinkedIn for professional networks or the use of Facebook to draw attention to job openings among a broad audience) are also increasingly used in recruitment and job search alongside OJV portals.

Other drivers are related to changes in employment patterns, reported in several EU Member States. New forms of online-based work are emerging, such as the platform economy, changing the patterns of work in terms of space, time and required competences. More jobs are to be temporary or part-time (reported in Bulgaria, for example) or allowing for remote work and variable working hours, offering employment opportunities for those wishing to reconcile paid employment with private life (as highlighted in Estonia and Finland). As a result, the popularity of specialised jobbing platforms or classified ad portals, often publishing short-term jobs requiring lower skills levels, is growing (e.g. Spain and France). The spreading of alternative forms of work (such as freelance) is supporting the shift away from formal qualifications to skills and work attitudes (reported in Spain).

3.2. Structure of the online job market

3.2.1. Public OJV portals

3.2.1.1. Set-up and institutional framework

Most EU Member States have one PES, which manages an OJV portal. In some countries, for various reasons, the PES operates multiple OJV portals (Table 3).

Table 3. Countries with multiple public OJV portals: background and examples

Background	Examples
Federal/regional governance structures	<p>Belgium: VDAB covers the Flemish Community, FOREM is responsible for the French Community, ADG addresses the German-speaking Community and Actiris focuses on the city of Brussels</p> <p>Italy: the national job portal called Cliclavoro is accompanied by several regional and local OJV portals. However, they are not harmonised with one another and do not necessarily transfer OJVs to the national portal</p> <p>Spain: the national portal Empleate was established in 2014 as an aggregator merging the OJVs from the 17 job portals of the regional PES and supplementing them with private vacancies</p>
Catering to the needs of specific target groups	<p>France: apart from the national public OJV portal Pôle Emploi, there is Apec – a portal for recruiting high-skilled workers, run by the association for the employment of executives</p> <p>Denmark: in addition to the main public online job portal Jobnet, the Danish Ministry of Employment also operates Work in Denmark, which helps Danish companies recruit high-skilled labour from abroad</p>
Providing a transparent platform for posting jobs in public administration(*)	<p>Bulgaria: the E-Labour Platform is the portal for the National Employment Agency and hosts vacancy information for all sectors, whereas the Administrative Register focuses on job openings within the state administration or state-owned enterprises</p> <p>Germany: The Jobbörse is the general PES OJV portal, while Bund.de provides information on public procurements and job vacancies in public administration</p>

(*) even though these jobs have to be openly published in all EU countries, some Member States run highly visible job portals. In other countries, job vacancies in public administration have to be published in print, on general government websites and/or on the general PES OJV portal (e.g. Estonia).

Source: Cedefop.

3.2.1.2. Focus

Most PES primarily focus on employment reactivation and intermediation services to the unemployed. As the unemployment rate is usually considerably higher among low-skilled workers, and they tend to remain unemployed longer, in most countries they are the main target group of the PES (e.g. Czechia, Ireland, Cyprus, Latvia, Hungary, Poland, Slovakia and the UK).

However, in some countries there has been a distinct shift away from these specific core tasks and target groups. For example, the Belgian PES portals⁽¹⁷⁾ see their role in the labour market as that of a conduit between public and private partners, which has led them to republish more private OJVs. They have also begun to focus on new services, such as offering fee-based branding options to employers (VDAB) and introducing account managers who support large employers or sectors with particular recruitment needs (Actiris). France has similarly moved away from direct intermediation towards support and facilitation of the labour market, through increased public-private partnerships between the PES and private portals and recruitment agencies. The strategies adopted by the Belgian and French PES are designed to reduce emphasis on labour reactivation, increase the focus on higher-skilled and employed populations, and carve niche roles in recruiting markets that are developing stronger private actors. Other European countries are undergoing similar developments, even if more limited in scope (e.g. Denmark, Estonia, Malta and Austria).

In several countries, national legislation requires employers to post vacancies to the PES portal. In Romania, for example, all employers have to report vacancies to the local PES office within five working days. However, enforcement of this legislation is usually weak. In Bulgaria, intermediary services and temporary employment agencies must also submit vacancy information to the PES if they do not have their own OJV portals to host them.

Evidence from countries which have eliminated mandatory provisions to post all vacancies to the PES (e.g. Spain, Luxembourg and Slovenia) suggests that there was no drop in the number of vacancies registered with PES as a result (e.g. Czechia). This suggests that compulsory reporting of vacancies to the PES does not necessarily result in more comprehensive coverage of the PES job portals, but also that employers view the PES as an important partner in recruitment.

In some countries, it remains mandatory to post public sector vacancies on the PES online job portal, enabling it to diversify further the qualification levels of vacancies available (e.g. Estonia and Latvia). In Malta, the PES must attempt to match registered unemployed PES job seekers with available public sector jobs before these jobs can be publicly posted on the open market.

⁽¹⁷⁾ Flanders: VDAB; Wallonie: FOREM; the German-speaking Community: ADG; Brussels: Actiris.

3.2.1.3. *Services*

Nearly all PES offer free services that are open and accessible to all employers and jobseekers, regardless of location and employment status. However, countries or regions concerned about protecting employment opportunities for local jobseekers tend to establish restrictions on their PES job portals. In Luxembourg, ADEM (PES) requires jobseekers to register and gain approval from the PES to access the portal and view OJVs. In some Italian regions, the regional PES portals require registration and in Greece the PES requires special access for individuals to consult training opportunities.

In contrast, in countries where the dominant concern is finding enough workers with the right skills for bottleneck occupations or sectors with increased demand, the PES supports recruiting workers from other countries. Denmark's secondary PES portal, Work in Denmark, is an example of PES services intended to attract highly skilled foreign workers. The Bulgarian and Slovenian PES also mention services for helping employers hire foreign workers, although they do not specify the nature of these services.

Across all countries, the primary service provided by PES OJV portals is the capacity for employers to post job vacancies and for job seekers to search for and apply to job vacancies free of cost. Prior to posting OJVs to the PES portal, employers are usually required to register, often using a tax or other identification number (e.g. Estonia, Portugal and Slovenia). By requiring employers to provide identification data, the portal operators can confirm that jobs posted to the PES job portal represent actual vacancies (e.g. Portugal). In contrast, private OJV portals may allow employers to post general announcements as a pool-building tool (e.g. Czechia, Hungary and Romania).

Registration also ensures that employers posting to the PES job portal comply with national standards and regulations, contribute to social security and pension programmes, and pay at least the minimum wage (e.g. Estonia and Portugal). Consequently, in some countries the PES requires that employers specify the salary on OJVs. For example, information on remuneration is mandatory in Portugal and is generally expected in Poland. In Estonia, employers are required to identify the salary band when posting the OJV on the PES job portal, but may choose to make it visible only to PES placement officers. This degree of oversight not only protects jobseekers, but also allows the PES to gather more accurate job vacancy data and provide better matching services. In most countries, however, posting the salary is unusual and not required by PES (e.g. Slovenia).

Some PES offer employers the option to submit a vacancy to the PES without making it public on their OJV portal, where all job seekers can see and

apply for it (e.g. Germany, Malta and Finland). This option targets employers who prefer to have potential candidates located and managed by PES advisors. However, at Germany's Jobbörse private intermediation is only requested for a small percentage (4-5%) of jobs; this likely to be similar for other countries with comparable policies (e.g. Hungary and Finland). In Poland, the PES portal still offers employers the option to have applicants screened by the PES, but this service is a remnant of economic recession times when large numbers of candidates were applying, sometimes indiscriminately, for positions. Therefore, the option of submitting a vacancy without publishing it has lost much of its appeal to employers. In contrast, it is reported in most countries that labour shortages cause employers to search databases of jobseeker profiles.

The PES also provide their matching services to jobseekers. In Lithuania, for example, they can choose to receive alerts when jobs matching their characteristics appear on the job portal. In Denmark, employers can request to be notified when someone fitting a specific profile uploads a CV to the PES job portal.

Some other typical services offered by PES portals include:

- (a) links to public and private job sources (including temporary work agencies and recruitment agencies) (e.g. Bulgaria and Austria);
- (b) consulting and placement services, which cater to job seekers and/or employers. These can entail job seeker career and placement advice (e.g. Portugal and Slovenia), setting up personal profiles (e.g. Belgium, Bulgaria, Malta, Portugal and Slovakia) or granting access to CV databases (e.g. Belgium, Denmark, Latvia, Portugal and Finland). The PES job portal in Portugal is in the process of developing new services such as online interviewing and online counselling sessions;
- (c) statistics about sectors with the most vacancies or occupations for which there are many postings (e.g. Estonia and Netherlands). Some PES portals have maps showing where in the country most vacancies are available (e.g. Lithuania).

3.2.1.4. *Market share*

Shifts in the target groups of PES services reflect the attempts of many PES to find and define their place in changing labour markets. For some PES, such as Belgium, this means carving out a niche as a service provider working in partnership with private portals. In other cases (e.g. Spain, France, Netherlands and to some extent Germany and Estonia), the PES is positioning itself as an aggregator, looking to expand its market share by collecting or even purchasing ads from other portals to increase the job portal traffic.

Some PES have attempted to increase their market shares by mimicking private portals. The PES in Ireland, Malta, Slovenia and the UK have undergone rebranding, adding new services and features to resemble more closely developments in the private market. For example, the United Kingdom chose to contract with the international job search brand, Monster, to design the PES portal Universal JobMatch, in the hope that its form and functionality would appeal more in a market dominated by private actors. Similarly, for the PES job portal in Slovakia, the private company TREXIMA has developed many additional tools such as education opportunities, videos about labour market topics, and consulting resources in an effort to turn it into a full-fledged career resource.

Other PES systems prefer to define their market share by focusing on a narrower audience and serving that particular market more thoroughly. The United Kingdom's decision to stop accepting non-PES OJVs from other sources exemplifies this. Similarly, Luxembourg's PES, which strictly limits who can search on the portal, reflects an interest in focusing inward instead of trying to compete with private portals. While this last strategy probably does not grow the PES market share, it indicates a form of specialisation within the market.

3.2.2. Private OJV portals

3.2.2.1. Types

The most popular private OJV portals are generalist, covering vacancies spanning all sectors, occupations and regions. In many countries, international brands are among the most well established primary OJV portals. For example, Stepstone is a Norwegian company that has remained one of the most popular OJV portals in Austria and Germany for over a decade. It is also among the top three general-purpose sites in Belgium and was the dominant job search engine in Denmark, until Jobindex purchased its Danish site in 2014 and became the market leader. Monster is another international brand that is considered one of the top portals in Belgium, Ireland, Spain, Hungary, Netherlands, Austria, Poland Finland and the UK.

Indeed is one of the most important international aggregator job portals, meaning that it functions as a job search engine and offers jobs that have been posted on many different OJV portals. It generally uses a 'pay for performance' policy, letting employers and recruiters post ads for a fee and charging them additional commission if the ad leads to a hire. Indeed is well established in Belgium, Germany, Ireland, France, Austria, Poland, Portugal, Romania and the UK. Aggregators play a negligible role in small countries, where the online job market is already highly consolidated and dominant private portals tend to be

local brands. This is the case for the Baltic States, where pan-regional portals dominate markets which are probably considered too small to be profitable by international brands. In cases where media magnates have bought up national or regional OJV portals (e.g. in the Czechia, Estonia, Croatia, Latvia and Lithuania), they have kept the established local brands

Many nationally owned and operated portals have developed directly out of or remain connected to national newspapers. In Austria, the daily newspaper Der Standard developed an OJV portal, which has been one of the most used in that country since 1996. The up-and-coming meinjob.at portal also belongs to the country's largest newspaper and media group. Similarly, the portal Ofir.dk is an important Danish portal that grew out of a Sunday newspaper. Belgium has several newspaper-related portals that specialise in specific linguistic groups and regions: while Jobat and Vacature focus on the Dutch-speaking population, Références is the newspaper portal for the French-speaking population. A consortium of five national newspapers owns the most popular private OJV portal in the Netherlands, nationalevacaturebank.nl. Similarly in Portugal, two important OJV portals Expresso Emprego and Emprego CM are connected to newspapers.

It is more common for newspaper job portals to concentrate on lower-skilled jobs compared to other private job portals (e.g. Italy and Poland). In some countries, local newspapers collaborate with the PES (e.g. Portugal and Slovakia).

Box 2. Social media as online recruitment tool

Social media (Facebook, Twitter, LinkedIn) are becoming more important in online recruitment (e.g. Estonia and Finland). LinkedIn is a hybrid between social media and an online job portal. France's public executive portal, Apec, developed a partnership with LinkedIn as early as 2008. In Finland, Ireland and Poland the importance of LinkedIn for recruiting higher-skilled, specialist and management-level roles is reported to be on the rise. In Portugal, the growing popularity of LinkedIn may even challenge the market position of the traditional generalist portals in that segment, as its market share for qualified and technological positions reaches 70% of the market. LinkedIn is also the top online recruitment channel in Spain, with 45% of the market share in 2017, up from 18% in 2015. While job search on social media job portals such as LinkedIn is free of charge, employers are charged for advertising their vacancies: for example, Spanish employers are charged EUR 149.95 for an ad on LinkedIn. Jobseekers are charged if they opt to use additional features, such as the ability to contact recruiters directly.

Source: Cedefop.

3.2.2.2. *Business models*

Typically, searches by jobseekers on the OJV portals described are free of charge, although some have modest registration fees or fees for more advanced functionalities (e.g. Germany). Most generalist portals earn the majority of their profit by charging employers or recruiting agencies to post OJVs to their website. These portals often offer different packages, enabling employers to choose from a range of services: flexible duration of posting (e.g. 30, 60 or 90 days), priority placement (e.g. appearing higher in search results or in emails to interested job seekers) and stylistic and branding elements (e.g. inclusion of company logos, options of format in which the ad can be uploaded, video elements, individualised layout and design, etc.). The cost of posting the OJV depends on how comprehensive the package is and how prominently the vacancy will appear in search results.

The cost for posting an OJV differs greatly, depending on the country and the range of associated services. In central and eastern Europe, a simple ad on a local portal may cost between EUR 90 and EUR 250 (e.g. Hungary and Lithuania). In southern Europe, OJVs on local brands start as low as EUR 59. In north European countries, posting to a locally run portal may cost between EUR 300 and EUR 700 (Netherlands and Sweden). In some cases posting to international portals is more expensive, but there are considerable differences across countries. An OJV on Stepstone costs between EUR 490 for 30 days in Austria to EUR 1 000 for the same time period in Germany, while in Spain the international aggregator CareerBuilder charges only EUR 50 for posting a basic OJV. Using additional services generally increases the cost by several hundred euros.

In most countries the 'pay per ad' model tends to attract larger, wealthier employers who can afford high prices and are interested in paying a premium for branding (e.g. Germany, Hungary and Sweden). Some job portals offer quantity discounts to employers who purchase packages of multiple OJVs at once (e.g. Germany and Sweden). Due to the high costs, employers are generally more likely to use private OJV portals for advertising vacancies in higher-skilled and higher-paying jobs as well as for occupations affected by shortages of skilled labour. Classified ad portals, by contrast, tend to be much less expensive, as the employers posting may be private individuals rather than large businesses. The relatively low costs of posting classified ads makes them particularly popular for advertising freelance or temporary work opportunities (e.g. France, Poland and Romania).

Some portals charge the employer based on the popularity of the OJV, known as the 'pay per click' model. In other cases, there is a base price for

posting plus an additional cost per click. The 'pay per click' model is expected to become more popular, especially in the United Kingdom.

Private OJV portals generate additional profit by charging employers to search their CV databases. They also offer additional employer branding opportunities on their website and repost ads or branding information on social media or on partner portals (e.g. Belgium, Croatia, Austria, Finland and Sweden). These services target employers who must actively increase their attractiveness to jobseekers as they are looking to hire in occupations experiencing labour shortages (e.g. Slovakia). Social media presence extends this branding strategy and can help target younger and higher-skilled groups (e.g. Austria and Portugal). An interesting trend observed in the service offer of OJV portals is the increased availability of services that manage the full recruitment process, from generating an OJV to initial selection of candidates (e.g. Czechia, Denmark, Estonia and Sweden). Full service packages can be particularly useful to companies that do not have sufficient HR capacity to manage all their recruitment processes in-house (e.g. Bulgaria, Estonia and Malta).

3.3. Understanding the OJV portal landscape

3.3.1. Main characteristics

The dynamics of the OJV portal landscape result from the strength of the PES compared to private portals alongside the overall consolidation of the market. When placing countries in a matrix comprising these two dimensions (Table 4), two main patterns arise:

- (a) most countries have relatively concentrated online job markets, dominated by few leading portals. In these cases the PES is the dominant actor or among the leading ones;
- (b) in other countries, there are several OJV portals with similar market power, the fragmentation of the market is stronger and the influence of PES compared to private actors tends to be limited. In some countries, international brands are most influential, while in others national or regional portals lead the market.

Table 4. The role of PES in the online job market compared to the level of market concentration

	PES as a strong player (compared to private online job portals)	PES as an important player (under certain conditions/for certain target groups)	Private OJV portals dominant players
Highly concentrated online job market (few players dominate)	DK, FR, HR, CY, FI, SE	CZ, EE, LV, MT, SK	ES, SI
Partly concentrated online job market (several influential players)	BE	LT	BG, HU, PL, PT
Fragmented online job market (many different players)	NL	DE, AT, RO	IE, EL, IT, UK

NB: The countries in the table have been allocated based on analysis of the country reports (available online on Cedefop's website <http://www.cedefop.europa.eu/en/publications-and-resources/country-reports/online-job-vacancy-market>). While the Luxembourg PES accounts for about 7% of all recruitment and appears to be weak, it is not possible to say to what extent the online job portal market is dominated by the two private job portals in the country. Consequently, the country cannot be unequivocally allocated to one of the cells in the table.

Source: Cedefop.

Six main country clusters can be distinguished

(a) Strong PES in a highly concentrated online job market (Denmark, France, Croatia, Cyprus, Finland and Sweden) where the PES is one of the top job portals as a result of the following activities:

- (i) aggregating most OJVs on the market from many smaller portals;
- (ii) focusing on a specific segment of the labour market and dominating it;
- (iii) recycling OJVs with a small cadre of equally dominant portals.

In Cyprus, where cross-posting of OJVs on different portals is common, the PES job portal has 66% of OJVs, with a focus on lower-level positions. The two private online job portals represent 51% and 36% respectively and include mainly middle- and higher-level occupations. Consequently, the concentration of the Cypriot job market results from the top portals specialising in a particular labour market segment. The high level of concentration in Denmark's labour market stems from agreements between PES and the two largest private portals to share vacancies with one another and enrich them with vacancies from many smaller, less important portals. For example, about half of the OJVs on the dominant private job portal Jobindex are posted there directly, while 30% come from the PES and 20% from other private portals. Finland's PES is considered the most widely used

channel for recruitment after informal channels (such as networking). The private job portals in Finland tend to be oriented towards developing niches in types of work (e.g. freelance, contractors) or specific regions. With an estimated 50% of the market and 125 000 vacancies, the Swedish PES job portal is also the largest in the country, followed by two private job portals, which each display around 80 000 to 90 000 OJVs.

France's PES is also the largest and most visited job portal; as in Denmark, its strength comes from its ability to source most of its OJVs from agreements with other job portals and aggregators. The two private OJV portals of importance are those that do not share OJVs with the PES, meaning they define their position in the market through competition. The Croatian PES job portal publishes the largest number of original OJVs and does not repost those from other portals. However, many of its OJVs are reposted to private portals, indicating its strength in the market.

- (b) PES as an important player in a highly concentrated online job market (Czechia, Estonia, Latvia, Malta and Slovakia).

The influence of the PES in the online job market is slightly lower than in the first group. In the Czechia, four main private portals have the largest market share, with two showing clear dominance and the PES job portal contributing a large majority of the OJVs on the one specialising in mid-level skill and wage positions. In Slovakia, where the top portal Profesia.sk has dominated the market since 1997, the PES is still seen as a top three actor. Estonia has a highly concentrated job portal market, with the PES operating alongside two dominant private portals. The OJVs that the PES shares with private portals are often made less visible to avoid competing with paid OJVs. Latvia has a highly concentrated market, with one portal assessing that it covers roughly 90% of opportunities. The PES is estimated to hold around 23% of the OJVs in the market. Malta's private portals are considered stronger than the PES, which holds approximately 41% of all vacancies. The rest of the market is covered by three private OJV portals with a national scope.

- (c) PES as a non-dominant player in a highly concentrated online job market (Slovenia and Spain); where only a relatively small number of OJVs are originally posted on the PES job portal and the market is dominated by a small number of private OJV portals. In Spain, the PES has a relatively large portal, but only 5% of the vacancies on it originate from the PES and the market is dominated by two private job portals. As a small labour market, Slovenia has relatively few OJV portals, which employers clearly prefer over the PES job portal.

- (d) Non-dominant PES operating in partly concentrated online job markets (Bulgaria, Hungary, Poland and Portugal) where several private job portals have carved up the market between them. In Bulgaria, private online job portals cover 73% of the job portal market. About 90% of the OJVs are published on five private online-portals and the PES is not particularly strong. The situation is similar in Hungary, where most OJVs can be found on five private job portals. Poland's online job market accommodates numerous specialised portals, which cover different sectors and qualification levels: the top four private portals only account for around 44% of the market. The PES focuses on unemployed and marginalised populations and is not seen as a major actor. Portugal has a large portion of its OJVs concentrated in the social media platform LinkedIn (70%), but the number of weaker, traditional portals is far larger, including also the fairly isolated PES portal ⁽¹⁸⁾.
- (e) PES as an important player in fragmented online job markets (Austria, Germany, the Netherlands and Romania), with a large number of private online job portals. Both Austria and Germany have a diverse and broad job portal landscape, where the PES remains an active player among the heterogeneous private job portals; it also engages in public-private partnerships or collects data from online job portals. Germany's private portals include many international brands and large publishing houses, while Austria also has some large actors that have grown from local newspapers. Similarly, the Netherlands has a fairly large and diverse market, in which international brands like Indeed and Monster are strong, but national brands like nationalevacaturebank.nl and Jobbird are also significant players. The Netherlands' PES is trying to strengthen its role in this environment by buying vacancies from private online job portals to increase the visibility of its services. Romania's PES covers approximately 50% of the online job market and shares the market with several dozen private portals, including aggregators, classified ad sites and specialised portals.
- (f) Non-dominant PES operating in a fragmented online job market (Ireland, Greece, Italy and the UK). In Ireland, at least 10 job portals are important in the market, although many others are also active. While the PES is ambitious, the number of OJVs it currently hosts on its portal is only one fifth

⁽¹⁸⁾ Considering Portugal's rather fragmented job portal market it could have also fitted into the cluster with non-dominant PES acting in dispersed job portal markets. However, this category was chosen to recognise the dynamic role played by LinkedIn.

of those available on the top job portal, indeed, and the PES portal is not among the top ten. The Italian PES has very few OJVs, as it does not effectively collect OJVs from the various regional job portals; there are approximately 10 private job portals that compete with one another. In the United Kingdom, the PES has recently stopped accepting OJVs from private portals, causing the number of OJVs on the public portal to drop significantly. About 80% of OJVs are posted to private job portals.

3.3.2. Public-private collaboration

The evolution of the online job market has encouraged most PES to develop partnerships with private OJV portals to share data or work together to expand the visibility of OJVs. While standard agreements in some countries allow for information transfer between PES and private job portals, others have developed non-typical practices or agreements with particular types of private actor (Table 5). These approaches have been adopted to carve out roles for private and public portals within the online job market. In some countries, they have significantly changed the dynamics of the online job market.

In France, the reach of private portals has strengthened the PES, providing between half and three quarters of its OJVs. Although the French PES remains the most-visited portal in France, it has retained this status in a shifting market largely thanks to collaboration with private portals. Lack of harmonisation means these transferred OJVs often appear differently than OJVs posted directly to the PES.

In Spain, the PES has attempted to become more influential through agreements with other portals. It aggregates OJVs from the 17 autonomous regions and some of the private job portals: JobandTalent, Monster, Infoempleo, Portalento, TicJob, Universia, Trabajando.com and Hacesfalta.com. The ministry has signed an agreement with these private portals, and their vacancies can be viewed on the Empleate portal. Users clicking on vacancies on the PES portal that originate from a private portal are directed to the corresponding website.

Table 5. **Examples of non-typical public-private cooperation practices or agreements**

Country	Example
Austria	The Dutch company Textkernel has collaborated with the Austrian PES to develop a version of its tool, Jobfeed, which mines approximately 4 000 websites and extracted 700 000 OJVs in 2015. While, in theory, private portals can also re-post OJVs from the Austrian PES as long as they clearly state that the vacancy originated with the PES, this happens infrequently
Belgium	Belgium's regional PES have actively developed public-private partnerships as part of their shifting roles from intermediaries to labour market facilitators
Netherlands	The Dutch PES purchases OJVs from private job portals and in return allows reposting of its OJVs on private OJV portals; as such it has taken on the role of aggregator, to give a broader overview of available job opportunities in regions or across the country
Denmark	Public-private partnerships connect the PES with the two dominant portals, Jobindex and Ofir, securing their market leadership
Estonia	The PES exchanges OJVs with 12 private OJV portals
Finland	The PES, which manages the dominant national OJV portal, has agreements allowing private operators to gather vacancies from the PES portal
Lithuania and Sweden	The PES allows private portals to repost OJVs from the PES OJV portal
Germany	The PES has developed significant cooperation with private portals in an effort to increase the variety of OJVs. However, the specific nature and dynamics of these agreements are not publicised

(*) Even though these jobs have to be openly published in all EU countries, some Member States run highly visible job portals. In other countries, job vacancies in public administration have to be published in print, on general government websites and/or on the general PES OJV portal (e.g. Estonia).

Source: Cedefop.

Malta and Portugal are also examples of countries with PES engaging in less typical collaborations. The Portuguese PES sometimes shares vacancies with national newspaper portals. The Maltese PES has memoranda of understanding with selected private recruitment agencies (PREAs), allowing them to share vacancies with the PES. However, only about 2% of the OJVs on the PES actually originate with the PREAs.

In some countries without official collaboration agreements between the PES and the private sector, private OJV portals still repost PES vacancies. This is the case in the Czechia as well as in Croatia, where only private OJV portals repost from the PES and not vice versa. Hungary has limited collaboration between public and private portals but the character of that cooperation is unclear.

In some countries there is no official or unofficial collaboration between public and private OJV portals, as in Bulgaria, Ireland, Italy, Cyprus,

Luxembourg, Poland and Romania. In Romania, it is mandatory to share vacancy information with the PES, so there is, in theory, no need for the PES to engage in agreements with private portals (even though this mandate is rarely enforced). Despite its contract with Monster to help design its PES portal, the United Kingdom recently changed its policy and, as of 2017, the PES no longer accepts OJVs from private job portals. This has drastically reduced the number of OJVs appearing on the PES portal, from around 600 000 in the beginning of 2017 to less than 200 000 at the end of that year.

Regardless of whether or not a PES has collaboration agreements with private portals, employers may still choose to post an OJV to multiple channels. As a result, in countries where the PES does not work with private partners, OJVs may still appear on both the PES and one or more private job portals. It is also important to note that some private portals share OJVs; this is especially the case with aggregator portals. Such portals can obtain some, or sometimes a majority, of their vacancies from other portals.

CHAPTER 4.

Use of online job portals

4.1. Factors driving OJV portal choice

Users select OJV portals as a recruitment tool or job search channel based on the characteristics of different target groups and the anticipated benefits. Employer decisions are predominantly driven by their aims:

- (a) to ensure that the type of job portal chosen attracts the most appropriate and qualified job seekers. This, for example, means selecting portals that attract specifically high- or low-skilled workers, choosing portals that specialise in OJVs for a particular sector or occupation, or identifying which portals have regional strengths;
- (b) to obtain best value for money considering the costs of advertising on a specific job portal. While employers with larger budgets for HR may select a portal that can offer the most services to amplify their search, employers with limited sources for recruitment are more led by the cost of advertising their vacancy.

Jobseekers consult portals that advertise jobs for which they have the best chances of finding opportunities that match their skills, interests and needs. The desired sector/occupation, skills level of the job vacancy, company size, region and the age of the jobseeker are major influences on the choice of recruitment channels and the selection of specific portals.

4.1.1. Sector and occupation

Private job portals are most used by employers in sectors experiencing labour shortages. For example, in the popular Dutch job portal nationalevacaturebank.nl, the most common sectors are technical, healthcare, construction, industry and trade. In many countries, skilled labour is lacking for technical jobs in IT and programming, meaning that employers are willing to pay more to advertise broadly positions that are increasingly difficult to fill (e.g. Italy and Slovakia). Construction, however, is less frequently advertised on private job portals in many countries. In the first quarter of 2016, nearly 10% of vacancies in the German job vacancy survey were for the construction sector, while only 3% of OJVs on Stepstone came from this sector. By contrast, while only around 4% of surveyed vacancies were in the ICT sector, the share of OJVs advertised in this sector on Stepstone was 15%. This shows that private OJV portals tend to be favoured for advertising higher-skilled and higher-paying roles.

In many countries, the most widely advertised OJVs on private job portals are for ICT specialists (e.g. Germany, Latvia and the UK). Also in Slovakia, the largest portal has a disproportionate number of IT jobs. In occupations experiencing skills shortages, the market is extremely competitive and OJVs often have to be posted to multiple portals to attract enough attention (e.g. Germany, Hungary and Netherlands). However, for blue-collar workers in occupations experiencing shortages of skilled labour, word-of-mouth or apprenticeship are used as alternative, and sometimes even clearly preferred, recruitment channels.

4.1.2. Vacancy skill level

Most PES promote their services to all employers and encourage them to post jobs from all qualification and skill levels. However, a large share of the available job vacancies target low-skilled and unqualified jobseekers who are often struggling to find suitable employment. As a result, employers offering higher-skill positions often assume that the PES will not have enough suitable candidates among their target group. In addition, higher-skilled positions are associated with higher salaries, and employers may be more willing to invest in the cost of a private portal when advertising for a higher paid role, while they may prefer to use the free services of the PES for lower-wage positions.

For example, the Austrian PES offers its services to all sectors and to companies of all sizes in all parts of the country. However, because the primary users of the portal are registered unemployed persons, companies looking for highly qualified workers are less interested in posting vacancies on the portal. This results in fewer job offers for higher-skilled roles on the portal, reinforcing the idea that the portal focuses on low-skilled work. Countries with mostly low- and unskilled jobs on the PES job portal include Bulgaria, the Czechia, Cyprus and Slovakia. In Cyprus and Slovakia, the PES hosts OJVs that are mostly related to lower-level positions, such as domestic helpers or agricultural labourers. This is attributed to the requirement that to hire non-EU nationals, employers must first publish a vacancy through PES and EURES, making it available to European citizens for a period of at least six weeks. Some PES have a primary focus on semi-skilled and blue-collar jobs, rather than low-skilled work. The OJVs on the Dutch PES, for example, mostly target semi-skilled and skilled workers and there are fewer positions for either low-skilled or high-skilled workers. In some countries the PES is known to contain OJVs mainly for blue-collar jobs, vacancies in the production sector and other labour-intensive fields, which can include both low and middle-level jobs. Most of the jobs on the Estonian, Spanish, Polish and 91% of the jobs on the Hungarian PES are

described as blue-collar. Vacancies on the Irish PES tend to be for skilled trades and elementary occupations in health care, wholesale and retail trade, hospitality and food services, and administrative and support services. The Slovakian PES portal is predominantly used in middle and lower labour market segments, and most positions require mid-level education. The most frequently posted positions are waiters, chefs, drivers, cleaners and shop assistants, followed by warehouse workers, sales representatives, kitchen assistants, administrative staff and operators in mechanical engineering. The dominant sectors are gastronomy, engineering, commerce, marketing, advertising, manual & technical work and construction. Of the employers who use the Danish PES to recruit, 26% are active in retail trade, followed by construction (11%) and industry (10%). However, satisfaction with the PES is highest among employers in the healthcare sector, where most jobs are successfully filled, and lowest in the construction sector, where the PES often struggles to fill vacancies.

High-skilled jobs are also present on PES portals, in some countries more than in others. Two prominent examples are the secondary PES portal in France (Apec) and Denmark (Work in Denmark), both designed for recruiting high-skilled workers. In Sweden, a 2014 survey by Statistics Sweden, as well as the 2011 Work environment survey, indicated that jobs with high qualification levels and positions offering relatively low wages are overrepresented on the PES portal.

In contrast to PES portals, private OJV portals may target currently employed individuals in addition to the unemployed (e.g. Belgium and Bulgaria). Danish OJV portals are more likely to be used to recruit for tertiary occupations (such as academic and management positions, office work, and education) and less likely to be used for unskilled jobs; 98% of management jobs in Denmark are posted online.

In situations of skills shortage or mismatch, the use of CV databases and searching candidate profiles provided by private OJV portals is quite common. This is typical for employers looking for high-skilled people in specialist and shortage fields, such as engineering, healthcare and ICT. Typically, private portals are used most by higher-skilled and higher-educated jobseekers, while the jobs on them are posted by employers seeking higher-skilled workers offering well-paid, long-term contracts (e.g. France, Slovenia and Slovakia). In Germany, the higher the skill level of the job, the more likely it is to be advertised online. For example, OJVs were used in two out of every three new appointments in jobs requiring at least a master degree. By contrast, only 36% of unskilled positions were filled through online portals. This reflects the significant costs associated with posting OJVs to private portals. As a single OJV can cost several hundred euros, it would not be cost-effective to use it in recruitment for hiring low-wage or

temporary positions. However, there are exceptions to this. While middle and high-skilled positions are advertised on private portals, management positions may not be advertised online at all because recruitment companies and informal channels tend to be used (e.g. Germany and Latvia). Leadership roles in Latvia are often filled through recruitment consulting firms and head-hunters.

By contrast, some countries have prominent blue-collar portals, such as the highly used Workania portal in Hungary. The Indeed.pl and Gowork.pl. portals focus on recruiting Polish people to work in caregiver and construction jobs in countries such as Germany, the Netherlands and Norway. As with PES portals, the focus of private OJV portals can also shift. In the case of Estonia, the formerly clear focus of CV Online on specialists, middle management and highly educated workers and of CV Keskus on blue-collar workers is increasingly blurring.

Classified ad sites with prominent job sections tend to focus on low-skilled and freelance/contract positions (e.g. in Ireland, Poland and Romania and Leboncoin.fr in France). Some classified ad websites are operating in several countries, such as OLX and Gumtree (e.g. Ireland, Spain, Poland and Romania). Posting to classified ad sites tends to be free or low-cost, making it an attractive choice for posting low-skill or low-wage positions. Classified ad sites also attract smaller companies and individuals posting jobs.

4.1.3. Company size

Company size is an important factor explaining how and whether an employer will recruit online. Smaller companies tend to use the PES portal more than large employers. For example, the Hungarian PES job portal receives the largest share of OJVs from companies with fewer than nine employees, followed by OJVs from companies with between 10 and 49 employees. This is mainly related to their smaller recruiting budgets and lack of qualified HR staff (e.g. Estonia, Germany and Poland), meaning they particularly benefit from intermediation and screening services offered by PES. The Estonian and German PES attract smaller companies who appreciate comprehensive assistance in drafting job descriptions. Sweden's Platsbanken portal also receives more vacancies from small companies, especially when the vacancies are for lower qualification levels. However, as it is the largest portal in the country, employers from larger companies placing OJVs on private portals also often post to the PES portal to increase the reach of their vacancies, especially as low unemployment and high workforce shortages make hiring for some positions increasingly challenging. In Bulgaria, Poland and Slovakia, employers also use the PES portal as an extra channel. In Finland, in contrast, larger companies are more likely to report a

vacancy to the PES: more than half of companies with more than 50 employees have used the Finnish PES portal.

Belgium's PES in Brussels (Actiris) has tried to attract more large companies by hiring key account managers who can better support the needs of large employers. A similar approach has been used in Ireland and Estonia, where the PES is specifically targeting large employers. In Ireland, account managers have been assigned to companies with 500 or more employees to encourage these companies to make use of PES services.

4.1.4. Geographic location

Employers from less populated, rural areas are more likely to use PES services, while urban employers more commonly select private portals (e.g. Bulgaria and Croatia). The PES systems have a presence in regional and local offices across the country and are therefore not seen as prioritising urban locations. Also, job opportunities in rural areas may be more reflective of the PES' strengths in providing matching services for lower-skilled and blue-collar jobs. Less developed and poorer regions tend to have higher unemployment, reinforcing high use of the PES (e.g. Hungary and Romania). In Croatia, the PES is praised for serving all regions well due to the wide geographic spread of its offices, compared to the more urban orientation of private portals. Croatian employers in less developed areas prefer the PES because its services are free and its reach across the country increases the chances of successful recruitment.

In some countries, patterns differ across regions. In Belgium the Flanders region is more likely to use the PES than the Walloon region; this could reflect differences between the regional PES systems or in the populations and economies of the two regions. Similarly, employers located in former East Germany use the PES portal more frequently compared to their counterparts located in former West Germany. This may correlate with higher unemployment in the east, which incentivises employers to use PES services; it may also reflect that companies in the east tend to be smaller with less developed HR capacities. The deeply rooted division of Italy into north and south is also reflected in the patterns of online job portal use, despite the lack of an active PES portal. But while unemployment tends to be higher in the south, OJVs on the PES portal largely come from employers in the north.

While PES portals tend to be used in more rural or less developed regions, private job portals are more commonly used in densely populated urban areas (e.g. in the western parts of Germany and northern Italy). Other countries that have significant regional disparities in the use of private job portals are Estonia, Croatia, Hungary and Latvia.

4.1.5. Age of jobseekers

While the so-called Generation X and Y ⁽¹⁹⁾ have higher ICT skills and are likely to use online job portals, the next generation may be likely to abandon them in favour of social media platforms or meta search-engines, like Google (e.g. Ireland, Portugal and Romania). By contrast, older jobseekers tend to rely more on traditional job search channels, such as newspapers, direct job application and networking (e.g. Belgium, Germany, Netherlands and Poland).

4.2. Factors shaping OJV content

4.2.1. Legal and regulatory framework

In most countries, there is no general legal or regulatory framework specifically targeting the operation of online job portals. The most prominent law regulating content and format tends to be national anti-discrimination legislation applying to all areas of life, including employment. In Hungary, for example, the 2003 Act CXXV on equal treatment and the promotion of equal opportunities states that the principle of equal treatment covers employment, social security, health care, housing, education and training, sale of goods and use of services. Anti-discrimination legislation has wide-reaching effects on recruitment processes. In OJVs, it requires that job titles are phrased in a way that encourages both men and women to apply (e.g. Estonia, Croatia and Austria).

There are many other examples of how anti-discrimination regulation affects the content of OJVs. In some countries, not only words directly referring to age, such as 'young' are to be avoided, but also associated stereotypes such as 'dynamic' (e.g. Malta). Other ways to avoid discrimination include refraining from stating the required number of years of experience and not specifying the requested skills in great detail, to avoid them acting like a proxy for experience and age (e.g. Ireland). This also extends to non-skills words such as 'significant' or references to general skills levels like 'managerial-level' and 'executive-level'. However, there are countries where it is still considered permissible to state that a company is looking to hire 'preferably a younger person' (e.g. Slovenia). Similarly, in Slovakia many employers are reported to use phrases such as 'work

⁽¹⁹⁾ Generation X and Generation Y refer to demographic cohorts said to share a common set of values: while the former denotes those born in early 1960s and end of 1970s/early 80s, the latter (also known as the Millennials) encompasses those born between 1979 and 1994 (Smola and Sutton, 2002).

for a woman’/’suitable for a woman’ or ‘work for a man’/’suitable for a man’ in their OJVs, even though this violates the anti-discrimination law.

Combatting discrimination has to be regarded as a continuous process, in which countries have reached different stages of development. In the Czechia, for example, although indirect age discrimination still exists and some kind of discrimination can be found in 10 to 12% of OJVs, it is considered an improvement that employers no longer express preferences concerning age and gender openly. In Latvia, 23% of employers surveyed by the private job portal CV-Online were found to indicate the desired age of the candidate in their OJV.

At the other end of the spectrum, the National Commission for the Promotion of Equality in Malta screens all media for discriminatory ads, including OJVs. Images can be also considered discriminatory as potential applicants may associate the gender of the person depicted with the position. To counter potential discrimination against non-natives, language skills in Malta are not required at native-speaker level; ‘fluency’ is considered the correct reference. In the United Kingdom employers are reportedly using inclusive language to ensure a diverse applicant pool.

Gender neutrality may be taken into consideration when wording OJVs (e.g. Estonia and Austria). While no negative discrimination against women is tolerated, they can be encouraged to apply (e.g. Finland), especially for positions in the public sector or in sectors aiming to increase the share of women in employment (e.g. Germany). Other examples of positive discrimination concern encouraging disabled persons or minority groups to apply (e.g. Belgium, Germany and Poland) or OJVs originating from active labour market programmes with specific conditions regarding age, schooling and employment status of potential candidates (e.g. Belgium, Hungary, Romania, Slovenia and Slovakia).

In some countries, equal treatment is understood more broadly and is reinforced by informal standards. In Finland, for example, good practice requires that OJVs contain information on issues affecting the selection of candidates such as health status, criminal records and hygiene requirements in jobs involving taking care of children.

Further, in most countries labour legislation or data protection laws influence the way OJVs are used in the recruitment process. They are followed particularly strictly by PES portals (e.g. Belgium, Bulgaria, Czechia, Estonia, Spain, Latvia and Austria). In Estonia, for example, apart from the Equal Treatment Act the activities of the Estonian PES is also subject to the Labour Market Services and Benefits Act, Civil Service Act, Act for the Protection of Personal Data, Language Act and the Employment Act. Based on these, the PES is required to publish all jobs in the public sector on its online job portal and can refuse to publish OJVs

containing misleading or wrong information about the company or the job. Often, there are specific requirements for posting OJVs for public sector jobs (e.g. Estonia, Greece and Poland).

4.2.2. Signalling functions of OJVs

OJVs have considerable signalling power: their format and wording as well as the dissemination channels used attract specific target groups who can see which tasks the job entails and which skills and competences are sought after. The signalling power goes beyond attracting the right candidate for an employer, as it affects a wider range of jobseekers who are able to assess the skills and competences which are critical for participating in the labour market. Information in OJVs can also help them plan their participation in education and training programmes to retain or increase their employability. As suitable candidates are increasingly identified and approached through social media (Chapter 5), jobseekers can also use OJVs to explore what skills they need to include in their profiles to be attractive for particular employers.

4.2.2.1. Format of OJVs

The format of OJVs differs greatly both across job portals and between different employers represented on a particular portal (e.g. Czechia and Spain). While most OJV portals specify categories such as job title, length of contract, type of contract, part/time/full time, location, there are differences in how they are grouped and denoted. There is also great variety in terms of how the information in these fields is generated, such as if employers are requested to tick boxes or provide free text (e.g. Italy). Whether and how employers use fields asking for a description of tasks (duties, responsibilities, required qualifications), information on the company (profile), offers in terms of benefits/perks and working conditions also varies greatly (e.g. Cyprus and Malta).

On private OJV portals, job titles tend to be heterogeneous as unified terminology is not used; the same type of job can have multiple titles assigned by different employers (e.g. Czechia and Finland). In Germany, where job titles are quite specific, they do not follow a classification system unless they refer to certain professions (such as health care nurse, mechatronic technician). As some employers use English or pseudo-Anglicisms in job titles in OJVs for jobs in the tertiary sector, their categorisation is even more difficult (e.g. Germany). In contrast, in most of the OJVs in Romania, very general and common terms are used in job titles, such as 'qualified/unqualified worker' and 'trade worker'. In Austria, employers tend to combine these approaches as they provide a main title, which is short and not very creative, and a subtitle, which sounds more

appealing. These examples demonstrate that employers have to make choices to attract the attention of potential candidates. The employer needs to assess whether to use a fancy title to attract more job applicants or to use generic terms that make it easier for applicants to find the job in keyword searches in databases or search engines.

In contrast, PES OJV portals are more likely to use national occupational classification systems which can be translated to ISCO ⁽²⁰⁾ to categorise the vacancy occupation published. This has several benefits:

- (a) the classification systems contribute to the effectiveness of search functions on the job portal. In most cases, however, the databases also allow for keyword searches and enable searches focusing on certain location, qualification level, sector, contract duration;
- (b) classifications enable the PES to match employers and job seekers based on formal qualifications or competences. This helps employers in searching for specific skills or competences among individuals who have registered their CVs or profiles with the PES.

In countries with significant outward migration and/or foreign direct investment (e.g. Latvia and Romania), OJVs sometimes indicate if the work contract is with a foreign employer or with a local company and whether the work location is abroad or in the country of origin.

In most European countries, wage level or salary is absent from most OJVs in the private sector (e.g. Belgium, Estonia, France, Italy and Slovenia) or vaguely described as 'competitive wage' (e.g. Czechia, Estonia and Italy). In Croatia, few OJVs are thought to contain information on wage and this is similar in Romania. In the Czechia, remuneration was stated only in 16% of OJVs in 2012, while 33% used the cliché 'good financial conditions' and 51% did not mention it at all. Employers are aware that if they share information on the salary too early in the recruitment process, they limit their ability to negotiate with job candidates to take into account their work experience and skills (Czechia, Estonia, Spain, Romania and Slovenia).

Competitive recruitment environments such as the ICT and gaming sectors, or specialised manufacturing generally, do not advertise salaries since they have several ranges and do not want to set expectations or create tensions between those who are already working for them (e.g. Estonia and Malta). Information on

⁽²⁰⁾ Most countries using their own national classification system have developed official translation to ISCO. The ESCO occupation pillar is 1:1 translation of ISCO hierarchies, though adding more detailed disaggregation on lower levels. ESCO also allows extending the classification to skills pillar.

salary is more frequently mentioned for lower-skilled positions in production and commerce or for entry-level positions (e.g. Czechia, Poland and Romania). Top executive or middle management positions rarely offer information on salary, since it is part of the negotiation process (e.g. Germany and Romania).

In countries where positions in the public sector are categorised by pay grades, salary is not explicitly mentioned (e.g. Germany). The practice of not disclosing wages also helps to hide differences between the public and private sectors (e.g. Slovenia).

However, there are also countries where remuneration is more commonly mentioned in OJVs as a result of persistent shortages of labour in some sectors and occupations (e.g. Malta and Poland). In Austria it is mandatory to state the expected minimum wage in every job advert. In most cases, employers refer to binding minimum wage levels agreed in collective agreements and add the phrase that 'higher salary is possible', implying that it will depend on the level of skills and/or experience.

Working hours are only mentioned in OJVs if they are considered to be attractive (e.g. Cyprus). In this respect, information omitted from an OJV can be highly revealing: if there is no information on the working hours, it automatically means full-time in countries where full-time employment is considered the standard (e.g. Czechia, Estonia, Lithuania and Romania). In Romania, irregular working hours and working days are considered unfavourable by employees, so this information is left out in order not to discourage applicants.

Box 3. Use of English in OJVs

English is widely used in:

- (a) OJVs in large international companies;
- (b) sectors with an international focus (e.g. in IT and the financial, insurance and pharmaceutical sectors);
- (c) OJVs for positions requiring a high skills level;
- (d) OJVs for managerial and executive roles.

Sometimes parts of OJVs are written in English as they make the position sound more significant (e.g. Germany, Greece and Hungary). English is used in job descriptions to identify highly qualified applicants, even if the position does not require English language skills per se (e.g. Bulgaria, Hungary and Poland).

Source: Cedefop.

OJVs are mainly written in the official language of the country but, in countries with more than one official language either at the national or regional level (e.g. Belgium, Spain, Luxembourg, Netherlands and Finland), OJVs can be found in several languages (Annex 4). OJVs from the public sector use a wide

variety of languages. Similarly, in countries with significant ethnic minorities, OJVs sometimes contain elements in that language (Russian in the Baltic States, Hungarian in Slovakia).

4.2.2.2. *Qualification, skill and competence requirements*

In highly selective labour markets like Germany or France, formal qualifications, fields of study, the profession and work experience are the basis of recruitment decisions. This also applies to Estonia, Spain and Austria, where education level is one of the most important credentials. Employer preference for quantifiable indicators and proof of competence is reflected in OJVs where requests for formal qualifications, professional certificates and hard skills play an important role (e.g. Belgium, Spain and Portugal). Young people applying for their first job are particularly expected to present their credentials (e.g. France). In contrast, references to specific qualifications are rare in the United Kingdom and Italy where the nature of the labour market is more informal and distinction is made more between graduate and non-graduate jobs. In Lithuania, 50% of OJVs contain information about the required level of education; of those, half demand a candidate with a university degree.

Among required hard skills, experience with specific software packages is most common (e.g. Spain, Lithuania and Romania). In Latvia, for example, 6% of OJVs require specific IT skills and this share is expected to rise significantly due to the growing importance of IT and the internet. IT skills are referred to in OJVs even in sectors where they were not previously considered essential (such as machine engineering and retail in Germany). A driving licence may also often required (e.g. Spain and Lithuania) and OJVs for blue-collar workers may include requirements for special driving licences (e.g. Poland).

Foreign language skill requirements are common in OJVs (e.g. Estonia, Spain, France, Latvia, Lithuania, Poland and Romania). In Lithuania, for example 35% of OJVs required a foreign language, the most popular being English, Russian and German. Spanish OJVs sometimes have a requirement to be able to speak one of the regional languages such as Basque, Catalan, Valencian or Galician.

In most countries, the importance of soft skills and competences is on the rise (e.g. Bulgaria, Poland, Slovakia and the UK). In countries where the PES has introduced competence-based matching systems (such as Belgium-Flanders, see Section 3.1.), OJVs contain abundant information on requested competences. In Malta, for example, employers posting their OJVs on the PES

portal are required to select competences from a predefined set of basic, job-related and personal skills⁽²¹⁾. They can define mandatory and optional competences, the former functioning as a filter in the process of matching jobs with jobseekers. In other countries, information on skills and competences is generally contained in the free-text sections, which allows for more flexibility in descriptions (e.g. Poland and the UK).

Fewer references to soft skills can be found in countries where employers mainly request formal qualifications (e.g. Germany and France). Employers who want the candidates to step into the role quickly tend to specify the expected work experience rather than requesting specific skills (e.g. United Kingdom). In Lithuania, for example, around 23% of OJVs require previous work experience in the position, most commonly one year. This suggests that job experience is used as a broad proxy for the skills associated with the position.

The soft skills and competences most often listed in OJVs overlap greatly in cross-country comparison: flexibility, assertiveness, responsibility, teamwork, confidence, reliability, initiative, creativity, analytical thinking, persuasiveness, decisiveness or ability to communicate (e.g. France, Croatia, Cyprus, Malta, Romania, Slovakia and Finland). Sometimes soft skills are not mentioned explicitly, but can be inferred from other parts of the OJV. An example of this is an opening line trying to attract the attention of the jobseeker in Austria: 'Do you want to be part of a flexible team developing our services together for a brighter future?'.

4.2.2.3. *Specific requirements for occupations and sectors*

In some occupations employees need to have by law a specific certification, licence or warrant to perform the job, as is the case in medical professions and legal and financial sectors (e.g. France). Specific driving/operating licences (truck, fork lift operator) are among the hard skills required most often (e.g. Malta and Poland). In Italy, OJVs for technical occupations contain long descriptions of the job and provide details of the expected tasks to be performed. They also list many job-specific skills and include soft skills and competences requirements. The latter are included even in technical jobs as they are expected to aid self-selection among candidates.

Experience from Belgium and Malta shows that employers consider it important to define sector-specific skills in OJVs. In Belgium-Flanders, where the

⁽²¹⁾ It is possible to choose from further 10 000 competences in Malta, which are not provided in the predefined list.

PES (VDAB) introduced predefined lists of competences for employers to choose from when posting their OJVs, there have been complaints that the standard lists do not sufficiently reflect the specificities of the sector. The VDAB is currently working on making the system more flexible. For the Maltese PES it is reported that recruitment officers adjust skills content according to the sector. As a result, OJVs in the financial sector include extensive descriptions of job tasks and required skills, while the information provided in OJVs in the construction sector is more concise and less specific in terms of skill requirements.

It is reported that OJVs advertising low-skilled positions tend to contain limited information on formal qualifications, skills and competences (e.g. Belgium, Spain, Lithuania, Poland and Portugal). For example, OJVs addressing low-skilled workers in Lithuania do not specify level of education. In Portugal OJVs for less qualified professions tend to require some experience, a professional qualification certificate and sometimes a compulsory schooling certificate. Such OJVs tend to state salary more often, given that this information helps job seekers assess the potential increase in their living standards – an incentive to apply – and there is less room for negotiations based on particular combinations of skills related to the advertised position (e.g. Czechia). OJVs are generally shorter and reduced to basic tasks (e.g. Austria): instead of lengthy descriptions of hard or soft skills, experience in similar functions is required and the personality trait mentioned as desirable most often is being responsible (e.g. Germany and Portugal). Similarly, OJVs for blue-collar work are shorter and contain less detailed descriptions of required skills (e.g. Poland).

In occupations that do not require a specific level of education, skills become the main selection criteria. A comparative study of OJVs in Slovakia identified service occupations as containing most skill requirements: 38% demanded language skills, 29% responsibility, 28% communication skills and 24% flexibility. However, experience also seems to serve as a proxy for expected skills: in 52% of OJVs previous experience was required, making it the most often mentioned selection criterion.

In contrast, OJVs advertising positions requiring higher qualification levels or specific skills sets contain significantly more information on required skills and competences (e.g. Bulgaria). OJVs addressing higher-skilled candidates in Cyprus explicitly tend to request a bachelor degree in economics, finance, accounting, mathematics, risk management or other related disciplines from reputable British universities with first or upper second class honours. Sometimes it is added that having a master degree or job-related work experience is considered an advantage. Also, OJVs advertising positions requiring higher qualification levels specify the skills needed for performing associated tasks such

as particular programming languages (e.g. Lithuania). Even in countries where the skill requirements in OJVs are defined only in very general terms, listing skills has three aims:

- (a) ensuring that individuals with the right kind of knowledge and expertise in specific fields relevant to the position are identified (e.g. Lithuania);
- (b) conveying information about company culture to ensure a good person-organisation fit (e.g. Portugal and Sweden);
- (c) marketing the employing organisation by emphasising opportunities for personal development (e.g. Cyprus and Romania).

An even more prominent distinction can be identified between large and/or internationally oriented companies and smaller firms. As the former are more likely to spend more money on publishing their OJVs, they design them more carefully, paying more attention to format and content (e.g. Croatia and Slovakia). Also, they dedicate a significant part of the OJV to the description of company's business orientation and work atmosphere and provide many details on their offers, such as possibility of professional advancement (e.g. Croatia). This is less common in smaller firms.

4.2.2.4. *Additional features in OJVs to attract suitable candidates*

In some countries OJVs tend to be relatively extensive and highly structured (e.g. Belgium, Estonia and the UK), while in others they lack detailed descriptions (e.g. Slovenia). In the United Kingdom, for example, employers try to catch the attention of jobseekers through short, catchy descriptions and use attractive terminology to sell the opportunity to join the organisation. In some countries, OJVs try to attract jobseekers by using questions such as 'Do you want to become part of our team?' or appeals like 'Be part of a winning team!' (e.g. Austria and Slovenia).

In smaller and in central and eastern Europe countries, international orientation is an important factor influencing the format and content of OJVs. International companies in central and eastern Europe are comparatively large, being able to offer broader career opportunities and better employment standards (e.g. Austria and Slovakia). Even in countries where career progress is not commonly mentioned by employers in OJVs, international companies do so (e.g. Slovenia). Further, international firms post OJVs which are more standardised in terms of format and describe the job offer in more detail (e.g. Bulgaria, Hungary and Slovenia). Often they publish their OJVs in English or German (e.g. Bulgaria, Latvia, Lithuania and Slovakia). In contrast to large international players, small and regional firms often try to capitalise on their familial atmosphere and the importance of every employee for the success of the company (e.g. Austria).

In some countries, there is a growing trend towards listing behaviours such as collaborative and agile (e.g. United Kingdom) or resilient and reliable (e.g. Austria). However, such personality traits can sometimes be used with the intention of bulking up the ad; even if they have little relevance for the job opening, they make it sound more substantial (e.g. Romania). Soft skill requirements, competences and personality traits are usually phrased as free texts and contain little reference to concrete job tasks they are needed for (e.g. Bulgaria and Denmark). Instead, wording like ability to communicate, capable of working in a team, motivated, ability to solve problems, result-oriented way of working and willing to learn are used, with the obvious risk of sounding like clichés; these have little to do with assessing how suitable a candidate is for the position (e.g. Germany, Spain, Lithuania and Romania).

However, these words carry different meanings depending on the context they are used in. For example, in low-skilled work flexibility implies willingness to change shifts and be available for overtime. When applied to positions in the financial sector it stands for willingness to take over tasks other than the ones that one was hired for (e.g. Czechia). In Romania, where irregular working hours are viewed negatively, requesting a flexible person enables the employer to avoid explicitly disclosing information about unfavourable working conditions.

The context dependence of skills terms makes it difficult to pinpoint their meaning, which leaves the messages they send out open to interpretation. While openly discriminating against jobseekers in terms of age, sex, sexual orientation is prohibited, skills terms or words denoting behaviours, attitudes and appearances can be used to indicate preferences for character traits in potential candidates. While words like dynamic, persistent, resilient and enthusiastic suggest that the employer wishes to hire someone who is young, wise, reliable and experienced reveal a preference for older candidates (e.g. Hungary, Romania and the UK).

If the employer is looking for a 'strong' person (e.g. Romania) able to handle an 'intense physical workload', this applies to male jobseekers (e.g. Bulgaria and Hungary). The terms expressing preference for male candidates can also be more subtle, making use of wide-spread stereotypes. The ones typically associated with men are 'resilience', 'leadership' and 'assertiveness' and they are widely used: 65% of OJVs posted on company career websites of German DAX-listed companies contained a stem word connoted with male stereotypes. The stereotypes associated with women are 'dexterous person' or 'neat physical appearance', especially if these desired characteristics appear in OJVs offering work in industries predominantly employing women (such as the clothing industry and parts of the hospitality industry) (e.g. Romania). In Bulgaria, words like

‘smiling’ and ‘welcoming’ stand generally for good looks and physical attractiveness and address both men and women.

The use of skills terms or personal characteristics aimed at attracting a certain type of jobseeker was described most extensively for central and eastern Europe and for south-east European countries. In contrast, in Belgium, Cyprus, Portugal and Austria such practices were reported to be rare. In some countries skills terms are used extensively to bulk up OJVs and the professional jargon used by HR experts and employers denotes associated expectations of candidates (e.g. Germany, Ireland and the UK). For example, ‘connected’ stands for a team player, someone with skills in management, meetings, networking, negotiation and presentation. A person with a ‘development focus’ is expected to be committed to life-long learning, understand the preferred method and style of learning, reflect on learning experiences and be able to learn from the mistakes of others (e.g. Ireland).

The need to consider the context in which the terms are used is illustrated by ‘perseverance’, which can take on different meanings: it can denote a top career skill enabling someone to stay focused on long-term goals. In context of manufacturing, however, it stands for tolerance of monotony arising from a work with a limited range of tasks (e.g. Hungary). The more wide-spread such jargon, the more employers feel the need to replicate it to describe the skills and competences they need, often leading them to seek assistance from professional recruiters (e.g. Malta).

Other terms can also indicate employer preference for younger or older candidates. For example, in Bulgaria mentioning ‘good career start’ is meant to attract the attention of young professionals, while the promise of financial independence appeals particularly to students. Often, indirect references to the work environment (e.g. ‘you will be part of a young collective’) or mentioning issues relevant at a certain point of the career or in a particular generation (e.g. flexible working time, work-family balance, training opportunities, company culture, dog-friendly workplace, gym membership, free beer Fridays) signal age preferences (e.g. Czechia, Spain and Hungary). ‘Stable working conditions’ and ‘success-oriented colleagues’ are supposed to attract older and experienced jobseekers (e.g. Bulgaria). Young mothers are expected to be put off by irregular working hours and demands of flexibility and thus refrain from applying for the job (e.g. Hungary).

In countries with a formal personal pronoun (e.g. *Sie* in German, *Eseis* in Greek) it can be used to hint age preferences. In Hungary, for example, more experienced candidates are addressed this way, while the informal personal pronoun *te/tegezés* is used in cases where employers seek to attract younger

and more flexible employees. However, is not the case in all countries: in Spain, the OJVs are written in a formal way, but without using the formal *usted*. Use of the formal and informal personal pronouns can also vary across sectors. While in Austria the formal *Sie* is commonly used, employers in creative industries are likely to opt for a more youthful tone by addressing the applicants with the informal *du*.

Further signalling can take place through job titles in languages where designations of occupations can be gendered. In German and Czech, for example, generic names of occupations are masculine. While employers in Germany go to great lengths to indicate in their OJV that both men and women are encouraged to apply, in Czech OJVs the generic masculine form is used. Should an employer wish to hire a woman, they simply need to gender the ad. This is especially the case for occupations of lower to mid-level task complexity such as assistant or sales assistant. Similar practices have been reported for Romania.

However, in many countries recruitment practices are transformed by labour shortages (described in more detail in Chapter 3). Instead of providing a long list of requirements that the potential candidates need to satisfy, employers are increasingly looking for candidates who are simply willing to work and have a positive attitude towards work (e.g. Croatia, Romania and Slovakia). Employers are prepared to train someone who does not fulfil their expectations in full in terms of formal qualifications and/or skills and competences (e.g. Finland). In Malta, for example, 46% of employers expect candidates to have the right skills and training, but many offer training – on the job, locally or abroad – if the candidate is selected.

Companies facing shortages must present themselves as interesting and attractive places to work (e.g. Finland). The focus in OJVs shifts to wage schemes and other benefits/perks available to candidates, working conditions and career advancement opportunities (e.g. Bulgaria, Ireland, Croatia and Lithuania). Sectors and regions experiencing significant fluctuation in labour and labour shortages focus on describing benefits with the aim of attracting potential candidates and competing for them (e.g. Bulgaria, Romania and Slovenia). The young generation known as the Millennials is seen to be primarily concerned with personal advancement and their rights, paying less attention to the interests of the company (e.g. Croatia). The perceived work attitudes of the younger generation entering the labour market are one of the reasons for the strong shift towards focusing on workplace benefits such as work-life balance, opportunities for remote work and relaxed dress code (e.g. Slovakia). The importance of work ethics and willingness to learn is also stressed (e.g. Croatia).

As can be seen, labour shortages as well as rapid labour turnover in some sectors, reinforce the trend towards advert-type OJVs (e.g. United Kingdom). Further, employers are increasingly concerned about how a candidate fits into the work environment, business culture and ultimately the team (e.g. Hungary). Under these conditions, an OJV essentially has to be analysed like an ad that exaggerates the content of the job and the quality of the firm (e.g. Italy), especially as employers are trying to maximise the returns on posting an expensive OJV (e.g. United Kingdom). The Belgian-Flanders PES (VDAB) has accommodated the tendency towards employer branding by including the 'company showcasing function' on its online job portal.

OJVs usually include the company logo and profile; sometimes they are formatted using a special design (e.g. Bulgaria and Austria). They carry a description of the company including its core tasks and portfolio, as well as corporate values/philosophy to ensure a good person-organisation fit (e.g. Malta and Austria). Frequently, information on working atmosphere or the team is provided (e.g. Austria). The mission and spirit of the organisation are most often stressed in OJVs for jobs requiring a high level of creativity and originality (e.g. Romania).

Statements in OJVs to transmit the image of a successful company include the following stereotypes: the largest player in the market, operating in a large number of countries and persisting in the market for a long period of time. Often the importance of the new employee joining the team is underlined (e.g. 'helping us to grow', 'completing our team') (e.g. Lithuania).

It is important to look out for signalling words and images inserted in the OJVs to convey particular messages. In Bulgaria, the images of growth are used by relatively new and unknown, but ambitious companies. International orientation is supposed to enhance the positive image of the company and suggest prosperity and high standards. In Romania, the term multinational market leader in the area of X tends to be more used by less-known companies. Expansion of business could stand for a high turnover of staff and 'adherence to correct labour relations' most probably signals that there are problems with staff (e.g. Bulgaria). Further, if a company describes itself as a reputable company at first glance it suggests an established corporate identity and high standards, except that genuinely reputable companies seldom feel the need to state that fact (e.g. Bulgaria). Consequently, these first insights into the practices involved in employer branding in different countries demonstrate the need to assess carefully the context in which the OJV has been created and posted.

4.2.3. Main differences between OJVs on public and private portals

OJVs on PES portals tend to be highly structured, formalised and focused on requirements (e.g. Germany, Croatia and Poland). However, the level of detail in OJVs differs across countries: in Slovakia, 45% of employers tick at least one box of predefined general competences or personality traits, while the OJVs on the Spanish PES portals have fewer details. PES portals which have introduced competence-based matching tend to display a stronger level of standardisation in OJVs (e.g. Belgium, Estonia, Malta and Finland). In Flanders, for example, the VDAB 'Competent' tool links occupations to lists of predefined competences and allows employers to choose from predetermined job descriptions. On the one hand, this broadens the content of typical OJVs in low-skilled positions, in which the job descriptions are rudimentary. On the other, some content – such as indirect information concerning the characteristics and wishes of the employer expressed in certain phrasing and non-structured information – is lost in the process.

OJVs on private OJV portals differ greatly both in terms of their format and content. This is due to the lack of harmonisation in categories and the companies' wide-spread use of corporate design to illustrate employer branding. OJVs on private portals are seen to contain richer descriptions and focus on behavioural personal attributes and soft skills (e.g. Croatia). Also, on specialist and niche job portals employers tend to provide more detailed information (e.g. United Kingdom). OJV portals charging less tend to accept OJVs containing less information and less detailed descriptions of skill requirements (e.g. Ireland), while premium sites try to encourage employers to present more information (e.g. United Kingdom). However, this varies greatly across countries. In Spain, for example, employers do not even disclose their names to prevent competitors from finding out about their skills needs.

CHAPTER 5.

Drivers of change in the OJV portal landscape

Many of the trends driving the use of OJV portals in recruitment and job search are expected to continue to have an impact. This chapter will describe how the trends outlined and analysed in previous chapters are expected to shape the online job portal landscape in the near future ⁽²²⁾.

5.1. Broad trends shaping the online job portal landscape

OJV portals are expected to become increasingly relevant as a result of the development and proliferation of ICT and growth in ICT skills in the population (e.g. Germany, Spain, Italy, Cyprus and Portugal). In Spain, for example, where OJV portals are relatively little used in recruitment and job search, an optimistic assessment by Adecco predicts that these portals will be used by 75% of employers in the coming years. The use of print media will continue to fall even further (e.g. Spain and Romania).

Should severe labour shortages persist, employers cannot rely exclusively on OJV portals as a recruitment channel. They will then have to put more effort into attracting talent at an earlier stage, for example by actively approaching or directly cooperating with universities (e.g. Romania and Slovakia). Aggravating labour shortages also mean that employers will be less strict in formulating requirements in OJVs, hoping to enlarge candidate pools (e.g. Estonia and Romania). This will also apply to job descriptions, which will be of a more general nature to attract more candidates (e.g. IT specialist, engineer) (e.g. Romania). As Poland is expected to face labour shortages of blue-collar workers in the coming years, the OJVs for this target group are expected to contain more information in terms of the position, employer and associated benefits. A similar trend is expected for Hungary. Application deadlines will become less important, since

⁽²²⁾ This chapter draws on expert opinions. The full country reports on which it is based are available on Cedefop's website <http://www.cedefop.europa.eu/en/publications-and-resources/country-reports/online-job-vacancy-market>

jobs will be posted until a sufficient numbers of applicants can be found (e.g. United Kingdom).

OJV portals will have to adapt to new patterns of employment and working environments such as remote work and freelancing (e.g. Czechia, Croatia and Slovenia). In this situation, both employers and jobseekers will look for innovative and flexible recruitment and job search channels, which will be reflected in growing prominence of OJV portals and apps targeting freelancers. This development might limit the importance of traditional OJV portals in this labour market segment (e.g. Denmark). It is possible that there will be a division of the online job market into some portals targeting freelancers and others focusing on people looking for a permanent employment relationship. In Spain, it was reported that skills demand differs as for freelance positions greater priority is given to general skills and attitudes.

With labour mobility expected to increase, OJV portals are likely to increase advertising job opportunities abroad. This will especially concern the EU market (e.g. Bulgaria and Croatia), increasing the importance of the EURES platform. While EU 15 countries tend to recruit labour from central and eastern Europe, central and eastern Europe countries are attractive for east Europeans and employers in several countries are attempting to convince governments to simplify the hiring of third-country nationals both for low-skilled and highly specialised positions (e.g. Croatia, Poland and Slovakia). It is possible that new OJV portals specialised in cross-border mobility will emerge to attract third-country nationals to Europe.

In the changing demographic situation resulting from the ageing (working) population, OJV portals will need to pay more attention to life-cycle friendly working times and age-friendly working environments (e.g. Slovenia).

5.2. Market consolidation trends

In highly fragmented online job markets such as Germany, further consolidation is expected (e.g. Germany, France and Italy). As a result, the market will increasingly be dominated by a small number of large OJV portals alongside smaller niche platforms specialising in specific groups of occupations like medical professionals and engineers. In small countries where the market is already held by two or three OJV portals (e.g. the Baltic States, Malta and Slovenia), no substantial increase in the number of portals is expected. It is more likely that portals specialised in targeting certain age groups, regions or sectors will enter the market (e.g. Belgium, Estonia, Austria, Slovenia and the UK). Even though

they will remain niche phenomena, they will be linked to social media portals which will make them more visible (e.g. United Kingdom).

These general dynamics can change if large (international) players enter the market and local operators, who are often smaller, lose their competitive advantage (e.g. Belgium, Bulgaria and Croatia). It is more likely, though, that local brands will be sustained and incorporated into the portfolio of large international players (e.g. the OJV market in the Baltic States and Croatia).

Consolidation tendencies in the market are actively shaped by the national PES (e.g. Estonia and France), who will be able to capitalise on their legal position to monitor the job search behaviour or jobseekers (e.g. Belgium). This development is most advanced in Finland where the current merging of providers in the *Työmarkkinatori*-platform is expected to blur further the distinction between public and private OJV portals. The capacity of the PES for shaping and steering these developments will differ between countries: in the United Kingdom, for example, the PES portal is considered to become less significant in the future.

5.3. Innovation in matching and support services

OJV portals often draw their competitive advantage from economies of scale. Since their attractiveness is driven by the number of available OJVs and/or CVs, the portals amass large numbers of OJVs. Consequently, they will increasingly need to develop solutions to manage the available information and deliver the best matching results. To that end, digital tools to standardise, structure and filter information will be devised and applied (e.g. France). Also the growing exchange of labour offers requires the introduction of new regulations and standardisations across portals – such as harmonisation of coding systems and OJV templates – and common vocabulary for describing the information in the OJVs to facilitate keyword searches (e.g. Estonia, France, Italy and Poland). To increase efficiency in the exchange of OJVs and their subsequent filtering, OJV portals can benefit from using classifications such as ISCO/ESCO for occupations and NUTS for regions. ESCO classifications will probably be introduced more widely in matching and assessment (e.g. Belgium, Estonia and Finland).

Currently the incentives for commercial OJV portals to become drivers of these developments are still limited as they require considerable investment without apparent returns in the short term. This would explain public (PES) initiatives in the field (e.g. Estonia, France and Finland). This might change in the future as algorithms increase the effectiveness of filters and searches based on big data (e.g. Spain). Further standardisation across Europe is expected to be

driven by the adoption of successful online job portal business models and associated interfaces and services (e.g. Spain).

Due to the increasing numbers of OJVs, online job portals will need to invest more effort in ensuring better matching of employers/OJVs and potential candidates (e.g. Ireland and Netherlands). Recruiting will become more data-driven; it is expected that big data will be used to explore how particular wording can help attract job seekers to specific professions, e.g. engineers or sales assistants (e.g. Denmark and Austria). The application of machine-learning techniques in recruiting might make some consultants redundant (e.g. United Kingdom).

OJV portals, particularly specialised ones, will widen their services and evolve from labour market intermediation to more integrated services for employers and jobseekers. They are likely to offer to post OJVs free of charge and offer discounts on other services like selection and counselling (e.g. Italy and Austria). New portals entering the market will use mobile app platforms from the start (e.g. Spain), enabling them to be more attractive for younger and technologically confident generations (e.g. Ireland and Portugal). While most OJV portals are currently oriented towards employers rather than jobseekers, greater consideration will be given to the interests and perspectives of the latter (e.g. Poland). Job offers might even become tailored to the jobseekers' interests based on their CVs. OJV portals are likely to move towards the business model of such as Trip Advisor, where prospective candidates are able to consult employees' or ex-employees' experiences with a potential employer (e.g. Malta). These trends imply that OJV portals will become more user-friendly and intuitive, facilitating job searches (e.g. Cyprus and Romania).

5.4. Mobile recruiting and social media

The importance of recruitment apps used on mobile devices will increase considerably (e.g. Germany, Lithuania, Hungary, Austria, Portugal, Slovenia and Finland). A nation-wide recruitment survey in Finland found that 66% of respondents believed that, in five years, most job hunting will be carried out on mobile devices. In Germany, 51% of companies have already optimised their company websites and career pages to make them more accessible for mobile devices and this trend will extend to OJVs: over 60% of companies have a positive stance towards mobile recruiting.

HR departments need to consider how these trends and emerging new tools can be incorporated into their recruiting processes (e.g. Germany). Moving towards complementing mobile recruitment apps or specific OJVs by self-

assessment tools (e.g. Bulgaria and the UK) requires new ways of thinking and adapting procedures. Using apps in recruitment will, for example, allow for more immediate interaction between jobseekers and employers (e.g. Spain), and can shorten response times (e.g. Denmark). The way companies communicate with potential candidates will increasingly resemble how they attract new customers. Therefore, it is likely that new intuitive and user-friendly mobile interfaces offering low-threshold job search services will be developed which might resemble the popular dating app Tinder (e.g. Spain and the UK).

The importance of social media for disseminating OJVs, communicating and sharing experiences about employers and assessing the commitment of jobseekers is expected to increase significantly in most EU Member States (e.g. Bulgaria, Czechia, Germany, Estonia, Ireland, Latvia, Hungary, Netherlands, Romania, Slovakia and Finland). LinkedIn, which in some countries is used only in very specific segments, is seen to have significant potential (e.g. Greece and Croatia). Recruitment and job search in high-skilled and top positions are expected to move towards social media and web specialised forums and recommendations (e.g. Romania and Slovakia), especially for positions that are hard to fill. At the same time, there is a shift to even less conventional platforms, such as occupation-specific web forums (e.g. Slovakia and Austria).

The trend towards recruitment and job search in niche communication spaces promotes the importance of user recommendations (e.g. Romania). This illustrates the trend towards combining recruitment and job search channels with word of mouth (e.g. Bulgaria, Croatia, Romania and Slovenia). As a result, social media is expected to supplement but not replace OJV portals (e.g. Lithuania). The effects of the increasing importance of social media on specific recruitment segments cannot yet be fully foreseen: while some experts expect that the use of Facebook and LinkedIn will support the headhunting endeavours of recruitment specialists (e.g. Hungary and the UK), others contend that freely available data might diminish the propensity of employers to use the services of recruitment firms (e.g. Denmark). However, integrating different sources into recruitment efforts will be complex and costly also in the short term and will only be a realistic option for larger firms (e.g. Poland). Most probably, the tendency towards differentiated recruitment patterns across skills levels and job positions (described in Section 3.3) will be further accentuated as recruitment agencies will continue to be widely used for executive roles (e.g. Ireland, Romania and the UK).

On Facebook, for example, it is already possible to focus on specific market segments and approach jobseekers through targeted job ads based on their search and social interaction behaviour patterns (e.g. Malta). As a result, it is

possible to focus the matching activities targeting specific groups on the basis of individual parameters such as age, gender and interests (e.g. Germany and Malta). Consequently, job search will become more personalised (e.g. United Kingdom). There will be a move away from formats that primarily suit the interests of employers, since there will be an increasing need to accommodate the interests of jobseekers (e.g. United Kingdom). As a result, OJV portals are expected to develop more user-friendly interfaces (e.g. Cyprus).

In some countries the market shares of OJV portals are expected to decline due to the competition from social media (e.g. Denmark). Shifts in the importance of particular portals might also occur: specialised recruitment and job search applications by influential search engines and social networks such as Google Careers and Facebook Jobs will become more important (e.g. Denmark and Latvia).

Increasing numbers of OJVs, the need to improve the tools for classifying information and matching employers with jobseekers, and recruitment moving into social media accessed by mobile devices, will all require the design of job advertisements to be optimised. The format and content will need to attract attention, present key messages and motivate potential candidates (e.g. Bulgaria) to apply. Above all, the presentation of OJVs (in particular on social media) will have to be clear and compact and might even be reduced to headlines (e.g. Austria). They will contain various additional elements (e.g. links to corporate sites and social network messages) and incorporate possibilities to ask questions from employers, communicate with them in advance online (e.g. Bulgaria). The trend towards using infographics instead of traditional OJVs is not very strong and will probably not prevail. This is due to the increased use of mobile phones, which are not suited to displaying infographics (e.g. Lithuania and Sweden).

5.5. Employer branding

Employer branding, showcasing the organisation, its work and employees is expected to become more important in long term. To achieve this effectively, employers will need to develop visibility strategies to attract the attention of potential candidates. Strategies involve various branding elements such as logos and visual design features such as pictures underlining the nature of the job and the associated characteristics in the desired candidate (such as chess board for positions of strategic importance requiring decision-making and analytic skills) (e.g. Germany). Multimedia content such as short videos or podcasts is particularly suited for this. Videos can effectively demonstrate the work

environment and include testimonials by collaborators, so that written OJVs are reduced considerably in length (e.g. Portugal and Sweden). They can be presented either on social media or on special segments of online job portals (Denmark, Germany, Estonia, Ireland, Croatia, Hungary, Malta, Austria, Slovakia and the UK). Multimedia formats are particularly appropriate for accommodating the trend towards more emphasis on common values and shared ethics within an organisation (e.g. Ireland).

In order to provide an attractive and coherent image of the employer for jobseekers, OJVs are expected to change (e.g. Croatia). As a result of employer branding, OJVs will increasingly emphasise the benefits of working for a specific employer, especially on social media platforms (Ireland, Croatia, Austria, Poland, Romania and Slovenia). In some countries, these new practices are mostly used in specific sectors that drive the diffusion to other areas of the economy. For example, in the United Kingdom the finance sector is leading the way with more slick and advert-type recruitment. Similar trends can be observed in Estonia, where this role is assumed by the IT and finance sectors and in the gaming industry of Malta, where employers offer not just competitive salary, but also emphasise flexible working conditions and work-life balance.

Jobseekers will need to pay more attention to their professional profiles (e.g. Estonia), not least because employers will need to identify them as potential candidates and promote their companies specifically to them (e.g. Austria). Videos will become a new way to illustrate applicants' skills especially in jobs requiring presentation skills (e.g. in sales, PR, marketing and advertising) (e.g. Greece and Romania).

It is expected that it will become more popular among large firms to create spin-off websites dedicated to recruitment. As this will apply also to internal recruiting, this trend will make more visible the processes which could not be captured by job vacancy surveys so far (e.g. Belgium).

5.6. Outlook

The identified future trends in the development of the online job market in terms of main players, their collaborations and the range of available services are most pronounced in countries where:

- (a) innovative activities of the PES or private job portal owners with potential long-term impact on the development of the landscape have taken or are taking place;
- (b) the online job market is fragmented or stagnating.

Such trends are expected to play an important role in countries where there is a move towards new constellations of stakeholders and the outcome is still unclear (e.g. Finland) and in countries with fragmented OJV market structures in terms of the number of players (e.g. Germany) or the relative importance of OJV portals in recruitment and job search (e.g. Italy). Diversification – providing channels for employers and jobseekers to address specific target groups, such as representatives of certain professions or age groups – is another important trend. It is possible that the job portal market in a country is influenced by several of these trends simultaneously, as is the case in Estonia.

The rapid spread of social media use in all spheres of life is expected to have significant impact on recruitment and job search in almost all countries. Connected to this is the increasing use of recruitment apps and mobile services in the near future, which will transform the way job vacancies are disseminated and present information on vacant positions. The increasing prevalence of employer branding will also shape the content of OJVs in the near future.

CHAPTER 6.

Conclusions

6.1. Main findings

The analysis of the OJV portal landscape in the EU provided a rich and multifaceted picture demonstrating a wide variety across Member States. The landscape is shaped by factors such as the state of the labour market, the role of the PES in the online job market and the size of the country. Cross-country analysis also confirmed that there is no uniform way OJVs are used in recruitment and job search and that employer decisions depend on a range of factors (Table 6) which interact in complex ways.

Table 6. **Dimensions impacting use of online job portals**

Dimension	Explanation
Economic sector	Generally, more OJVs are published on online job portals in the ICT sector and fewer in the construction or hospitality sector
Occupation	Generally, for occupations experiencing skills shortages, e.g. nurses or engineers, OJVs are more frequently used
Education and skills levels required for the position	For white-collar jobs, OJVs are more frequently used than for blue-collar jobs
Size and outreach of the company	Large internationally active companies are more prone to publish vacancies as OJVs than smaller ones
Geographic location	The use of OJVs in recruitment and job search differs between regions in countries like Belgium, Germany and Italy. There are also differences between sparsely populated rural areas and urban regions, where the more mobile population uses online job portals more often
Context in which OJVs operate	Main factors include: the legal framework regulating vacancies and the operation of OJV portals and its reinforcement, different manifestations of labour shortages and business model/focus of online job portals

Source: Cedefop.

While it is challenging to find common patterns in how OJVs are shaped, it is possible to identify three stereotypical OJVs:

- OJVs presenting requirements in ways directly addressing candidates and using a demanding tone. The lists can be more or less extensive and can include both formal qualifications/hard skills and soft skills/personality traits;

- (b) OJVs containing a neutral description of tasks and formal qualifications and soft skills/personality traits associated with these;
- (c) OJVs mainly used as a tool for employer branding. These focus on attracting suitable candidates by highlighting the benefits of the job and the advantages of working for the employer. These types of OJV tend to describe the profile of desired candidates as a whole.

Several trends drive job portal landscapes, the use of OJVs in recruitment and job search and the content and shape of OJVs; these are likely to continue in the future. In many countries persisting labour market trends will aggravate labour shortages and drive employers towards using as many recruitment channels as possible. Considering resources needed for posting the vacancy and filtering out suitable candidates, OJVs will likely become the preferred means of recruitment in the near future. More intense use of OJV portals and the cross-posting of vacancies across different kinds of media means that the number of OJVs is expected to grow. At the same time, new media offer opportunities to interact electronically with jobseekers. To manage the resulting large amounts of information, standardisation and classification systems will be needed. Standardisation can be expected to have an impact on the information fields in OJVs.

With the proliferation of employer branding as a tool to attract candidates, information on the work environment and employment conditions is likely to become more prominent in OJVs. It is also likely that the trends towards focusing on skills and work attitudes rather than formal qualifications and other requirements will continue. Other developments, such as further consolidation of the market, emergence of more elaborate matching services for employers/OJVs and potential candidates, increased importance of social media and recruitment apps on mobile devices, will also likely continue impacting the OJV landscape and the use and shape of OJVs in the coming years.

In the more distant future, OJV portals are expected to evolve towards communication platforms where employers present their companies in an all-encompassing manner. Traditional OJVs will be used less frequently and many employers will engage with jobseekers directly, flexibly tailoring job offers to them. Another trend, already visible in some countries, is to combine written information with other types of communication such as videos to inform jobseekers about the job vacancy and clarify expectations towards them. This is likely to lead to less textual information in OJVs on the work environment and perks and benefits, as these aspects lend themselves more easily to being presented in videos.

6.2. Implications for data collection

When selecting OJV portals for gathering information on vacancies it is important to ensure sufficient coverage, especially in countries with a fragmented online job market and where use of such portals is less common. In countries where the online job market is fragmented, more portals need to be scraped to represent the landscape accurately. In countries with lower OJV portal usage, the results need to be interpreted considering the labour market context and observed patterns of OJV usage. Online job markets are also highly dynamic and if one or more actors are empowered or side-lined, shifts in market shares can occur. It is essential to ensure that developments in online job markets are systematically observed and any considerable changes taken into account in data collection.

While collecting and analysing OJVs offers a promising opportunity to develop labour market and skills intelligence supporting and shaping the changing world of work, the analysis in this report shows that the following challenges need to be considered:

- (a) there is a considerable bias in the coverage of occupations, sectors, firm sizes and regions on OJV portals. This needs to be addressed through careful selection of websites to cover a wide range of employers;
- (b) OJVs often contain information which is not classified (such as job titles on private OJV portals) or categorised (as in fields containing standardised information such as working hours and contract type). This means that complex data extraction and manipulation techniques are needed to make this information suitable for analysis;
- (c) information in OJVs in terms of formal qualifications, skills and personality traits varies considerably depending on the country, sector, occupation and skills level of the advertised position. Business models of OJV portals also play an important role. Carefully combining different sources can help close the information gaps in certain dimensions;
- (d) references to skills can potentially be found in many different parts of OJVs. Skill requirements may be implied in descriptions of the workplace or employer mission. This implies that innovative text analysis is required to extract all information relevant to skills from OJVs;
- (e) the use and meaning of terms to communicate skill requirements in OJVs is highly dependent on the context they are presented in and reflect language and culture. Innovative ways of text analysis are needed to capture different meanings and connotations.

It is not clear yet how labour market and other trends impacting OJVs and their use will eventually evolve, whether or not they will persist and to what extent

they will affect the recruitment and job search patterns in different sectors/occupations and for various qualification levels. The key for future work is monitoring closely how the online job market develops and carefully considering the implications this has for using OJV information to map labour market developments and emerging skill trends.

Abbreviations and acronyms

ADEM	<i>Agence pour le développement de l'emploi</i> [Agency for labour development]
ADG	<i>Arbeitsamt der Deutschsprachigen Gesellschaft Belgiens</i> [Employment agency of the German-speaking Community in Belgium]
ANOFM	<i>Agenția Națională pentru Ocuparea Forței de Muncă</i> [public employment service]
Apec	<i>Association pour l'emploi des cadres</i> [Association for the employment of executives]
CBOP	<i>Centralna Baza Ofert Pracy</i> [central base for job offers]
Cedefop	European Centre for the Development of Vocational Training
CRISP	<i>Centro di ricerca interuniversitario per i servizi di pubblica utilità, University of Milano-Bicocca</i> [Interuniversity research centre for public services]
EC	European Commission
ESCO	European standard classification of occupations
ESSnet	European statistical system network
EU	European Union
EURES	European employment services
EUROSTAT	Statistical office of the European Union
FOREM	<i>Service public wallon de l'Emploi et de la Formation professionnelle</i> [Labour and professional training office of Wallonia]
HR	human resources
ICEs	international country experts
ICT	information and communication technology
IGOs	intergovernmental organisation
ISCO	international standard classification of occupations
IWAK	<i>Institut für Wirtschaft, Arbeit und Kultur</i> [Institute for economics, labour and culture/Centre of Goethe university Frankfurt]
JVS	European job vacancy survey
LFS	European labour force survey
LMI	labour market information
MNCs	multinational corporations
NGOs	non-governmental organisations
NUTS	<i>nomenclature des unités territoriales statistiques</i> [classification of territorial units for statistics]
OJVs	online job vacancies
PES	public employment services

PREAs	<i>Agence pour le développement de l'emploi</i> [Agency for labour development]
VDAB	<i>Vlaamse dienst voor arbeidsbemiddeling en beroepsopleiding</i> [Flemish service for job search and professional training]

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OECD glossary of statistical terms. <https://stats.oecd.org/glossary/index.htm>

WollyBi. <http://www.wollybi.com/en/>

Annexes

Annex 1. Country codes

Country	Country code
Belgium	(BE)
Bulgaria	(BG)
Czechia	(CZ)
Denmark	(DK)
Germany	(DE)
Estonia	(EE)
Ireland	(IE)
Greece	(EL)
Spain	(ES)
France	(FR)
Croatia	(HR)
Italy	(IT)
Cyprus	(CY)
Latvia	(LV)
Lithuania	(LT)
Luxembourg	(LU)
Hungary	(HU)
Malta	(MT)
Netherlands	(NL)
Austria	(AT)
Poland	(PL)
Portugal	(PT)
Romania	(RO)
Slovenia	(SI)
Slovakia	(SK)
Finland	(FI)
Sweden	(SE)
United Kingdom	(UK)

Source: Eurostat, https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Glossary:Country_codes

Annex 2.

International country experts

Country	Name	Organisation
BE	Koen Hendrickx	Federal Planning Bureau
BG	Zhechko Dimitrov	Bulgarian Industrial Association
CZ	Michal Janíčko	National Training Fund
DK	Thomas Bredgaard	Aalborg University, Department of Political Science
DE	Sigrid Rand, Ronja Schröder, Rachel Cylus and Christa Larsen	Institute for Economics, Labour and Culture/Centre of Goethe University Frankfurt
EE	Sigrid Rand	Institute for Economics, Labour and Culture/Centre of Goethe University Frankfurt
IE	Hilary Stevens and Andrew Dean	University of Exeter, Marchmont Observatory
EL	Stavros Papakonstantinidis	The American University of the Middle East
ES	Eugenia Atin	Prospektiker
FR	Isabelle Recotillet	Independent Consultant
HR	Danijel Nestić	The Institute of Economics, Zagreb
IT	Emilio Colombo	Università Cattolica del Sacro Cuore
CY	Yiannis Mourouzides	Human Resource Development Authority
LV	Ieva Moore	Baltic International Centre for Economic Policy Studies
LT	Žilvinas Martinaitis	Visionary Analytics
LU	Franz Clément	Luxembourg Institute of Socio-Economic Research
HU	Marton Csillag and Anna Orosz	Budapest Institute
MT	Edwin Camilleri	Jobsplus
NL	Harry Piepers	KWIZ
AT	Marc Bittner	Paul Lazarsfeld Gesellschaft für Sozialforschung (PLG)
PL	Jan Brzozowski	Cracow University of Economics
PT	Teresa Bento	Instituto do Emprego e Formação Profissional
RO	Ciprian Panzaru	University of Timisoara
SI	Magda Zupančič	Ministry of Labour, Family, Social Affairs and Equal Opportunities
SK	Michal Janíčko	National Training Fund
FI	Päivi Holopainen	University of Lapland
SE	Louise Strandendahl	Arbetsförmedlingen
UK	Andrew Dean	University of Exeter, Marchmont Observatory

Source: Cedefop.

Annex 3.

Drivers influencing the development of OJV portal landscapes

Country	Economic developments		Labour market reforms/policy initiatives	Demographic dynamics			Digitalisation: internet use/ digital skills/new technologies	Changing employment patterns
	Economic growth/recovery	Structural development		Dem. change	Out-migration	In-migration		
BE	x	x		x			x	
BG		x		x			x	x
CZ	x	x						
DK	x						x	
DE	x	x	x	x		x	x	
EE	x	x	x	x	x		x	x
IE	x	x						x
EL	x		x		x		x	
ES	x	x		x			x	x
FR		x					x	
HR	x	x		x	x	x		
IT		x		x			x	
CY	x						x	
LV	x	x	x	x				
LT	x	x	x	x			x	
LU								x
HU	x	x			x		x	
MT	x	x	x				x	
NL	x	x						
AT	x	x				x	x	
PL	x			x	x	x		
PT	x						x	

Country	Economic developments		Labour market reforms/policy initiatives	Demographic dynamics			Digitalisation: internet use/ digital skills/new technologies	Changing employment patterns
	Economic growth/recovery	Structural development		Dem. change	Out-migration	In-migration		
RO	x	x		x	x		x	
SI	x	x	x				x	
SK	x	x				x		
FI	x	x	x				x	x
SE	x			x		x	x	x
UK		x					x	

NB: This table is based on the analysis of 28 country reports provided by international country experts.

Source: Cedefop.

Annex 4.

Main languages used in the OJVs of the 28 EU Member States

Country	Language(s)
BE	Dutch; French (PES following the regionally dominant languages); English
BG	Bulgarian; English sometimes; German, French or Russian occasionally; specific sectors publish in English (e.g. financial sector, ICT, science and tourism)
CZ	Czech, English for positions requiring higher qualification levels
DK	Danish; English
DE	German; English depending on the sector and qualification level (e.g. financial, pharmaceutical, IT and insurance sectors)
EE	Estonian; Russian; English
IE	English
EL	Greek; English for certain sectors (e.g. IT sector)
ES	Spanish; regional public portals use additionally the regional official language (Basque, Catalan, Valencian or Galician)
FR	French
HR	Croatian; English on private job portals, in OJVs of international companies, for positions requiring high qualification levels and having an international dimension; German if the international company is from a German-speaking country
IT	Italian; English on large international online job portals
CY	Greek; English for higher-level occupations (managers, executives) or specific sectors
LV	Latvian; Russian
LT	Lithuanian; English for international companies and for certain sectors (e.g. financial sector)
LU	French; German; Luxembourgish
HU	Hungarian; English for 3-4% of OJVs
MT	English; Maltese (more seldom)
NL	Dutch; Frisian; English
AT	German; English used by international firms or for workplaces outside the country
PL	Polish; English; Russian for certain sectors (e.g. construction) and semi-skilled professions
PT	Portuguese; OJVs for more qualified jobs in English
RO	Romanian; English for executive positions and for international companies; German and French for international companies
SI	Slovene; sometimes English or other languages of former Yugoslavia
SK	Slovak; Hungarian; English (mandatory fields still posted in Slovak)
FI	Finnish; Swedish; English for international companies
SE	Swedish; English for certain sectors (e.g. engineering)
UK	English

Source: Cedefop.

Annex 5.

Assessment of harmonisation on global job portals recommended for web crawling

Job portal	Category	Level of harmonisation
Euraxess	Science & research	High number of sorting categories and consistency of language Mobility information in free text areas not harmonised, but well accessible thanks to language consistency
myscience	Science & research	Many sorting categories OJVs are published in different languages Mobility information included in free text (less accessible due to several languages used)
Science Careers	Science & research	High level of harmonisation of general sorting categories and language Mobility information included in free text
Maritime-Union	Maritime	No harmonised general categories for sorting OJVs High language consistency
Learn4Good	Healthcare	Many harmonised general categories Extensive mobility features (free-text section dedicated to relocation benefits)
Reliefweb	Intergovernmental/non-governmental employers	Few general categories for sorting OJVs Different languages used Mobility information included in free text (less accessible due to several languages used)
Devex	Intergovernmental/non-governmental employers	Several categories for sorting OJVs Most OJVS published in English Mobility information included in free text

Source: Cedefop.

Annex 6.

Expected trends of OJV portal landscapes in the 28 EU Member States reported by country experts

Country	General labour market drivers					Level. of the online job portal market		Managing/ matching the available information	Integrated services	Recruitment apps and mobile devices	Social media	Employer branding
	ICT devel./skills	Labour shortages	Changing empl. patterns	Labour mobility	Dem. dynamics	Consolid ation	Diversifi cation					
BE						x	x	x				
BG				x		x				x	x	
CZ		x	x								x	
DK			x					x		x	x	x
DE	x					x				x	x	x
EE		x				x	x	x			x	x
IE							x		x		x	x
EL				x					x	x	x	
ES	x		x					x		x	x	
FR						x		x	x			
HR			x	x		x					x	x
IT	x					x		x	x			
CY	x								x	x	x	
LV											x	
LT										x	x	
LU											x	
HU		x								x	x	x
MT									x	x	x	x
NL								x			x	
AT							x	x	x	x	x	x

Country	General labour market drivers					Level. of the online job portal market		Managing/ matching the available information	Integrated services	Recruitment apps and mobile devices	Social media	Employer branding
	ICT devel./skills	Labour shortages	Changing empl. patterns	Labour mobility	Dem. dynamics	Consolid ation	Diversifi cation					
PL		x		x				x	x		x	x
PT	x								x	x		x
RO	x	x							x		x	
SI			x		x		x			x	x	x
SK		x		x						x	x	x
FI						x		x		x	x	
SE									x	x	x	x
UK		x				x	x	x		x	x	x

NB: This table is based on the analysis of 28 country reports provided by international country experts.

Source: Cedefop.

The online job vacancy market in the EU

Driving forces and emerging trends

With the project *Real-time labour market information on skill requirements: setting up the EU system for online vacancy analysis*, Cedefop is using online job vacancies to develop real-time labour market and skills intelligence in the EU. Drawing meaningful conclusions from these data and turning them into policy-relevant labour market intelligence requires sound understanding of online job markets and their importance in employers' recruitment strategies. The mapping of the online job portal landscape in all EU Member States presented in this report helps identify the main features of online job markets and signal important trends impacting them. The report analyses the drivers influencing the use of online job vacancy portals in recruitment and job search, the structure of the online job markets, the role of public and private players and the factors shaping the format and content of online job vacancies.



CEDEFOP

European Centre for the Development
of Vocational Training

Europe 123, 570 01 Thessaloniki (Pylea), GREECE
Postal address: PO Box 22 427, 551 02 Thessaloniki, GREECE
Tel. +30 2310490111, Fax +30 2310490020
Email: info@cedefop.europa.eu
www.cedefop.europa.eu



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