

Mapping the landscape of online job vacancies

Background report: Czech Republic

Study: Real-time labour market information on skills requirements: Setting up the EU system for online vacancy analysis

Contract: AO/DSL/VKVET-GRUSSO/Real-time_LMI_2/009/16

prepared for Cedefop by Michal Janíčko

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Preface

Over the last decades, online job portals have become important features of the job market. The Internet offers a rich source of live and real-time labour market information for almost all of occupations. It can provide insight on job-specific skills required in particular occupations in different regions, combined with information on the characteristics of the job offered – i.e. much more than is available using conventional sources. However, consistent and comparative information on the use of the internet and online job market by job-seekers and employers in Europe is rather scarce.

To tap the potential of online labour market information, Cedefop started to investigate the possibility to develop a system for gathering and analysing data from online job portals in the EU to complement the centre's toolkit of skills intelligence instruments. While this is feasible, drawing meaningful conclusions from these data requires a good understanding of the features of national online job markets. Therefore, Cedefop has mapped the landscape of the online job market in all EU Member States. This publication presents one of the background country reports developed in the project - 'Real-time labour market information on skills requirements: Setting up the EU system for online vacancy analysis' (AO/DSL/VKVET-GRUSSO/Real-time LMI 2/009/16). Its findings will inform the cross country comparison published in the upcoming synthesis report.

The work was undertaken by a consortium of external contractors: CRISP (Milano/IT), Tabulaex (Milano/IT) and IWAK (Frankfurt/DE) and their network of country experts (see annex 1 for detailed list) and closely supervised by Cedefop. It presents authors' analysis of the landscape of the online job portal market in the country using a methodology developed for the purpose of the project.

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List of Abbreviations

| | |
|-----------------|---|
| Cedefop | European Centre for the Development of Vocational Training |
| DPČ | Contract on a working activity (dohoda o pracovní činnosti) |
| DPP | Contract on Performing Work (dohoda o provedení práce) |
| (EU-)LFS | (European) Labour Force Survey |
| ISCO | International Standard Classification of Occupations |
| LFS | Labour Force Survey |
| NTF | National Training Fund |
| OJP | Online Job Portal |
| OJV | Online Job Vacancy |
| PES | Public Employment Service |

Introduction

With the project “Real-time Labour Market Information on Skill Requirements: Setting up the EU System for Online Vacancy Analysis”, Cedefop explores online job-vacancies (OJVs) as a new source of real-time Labour Market Information. By crawling the most important online job-portals of the 28 EU Member States, Cedefop will further its understanding of the changing skills demand in different sectors and occupations. A systematic overview of the online job-portal landscape in each of the 28 EU Member States will identify the most relevant online job-portals and provide context for the data scraped from them. With the Landscaping Activity, Cedefop seeks to acquire insights into the structure of online job-portal markets and the extent to which online job-portals are used in recruitment and job-search. Furthermore, it aims to better understand which factors cause variation in the formats and content of OJVs in different countries.

This Country Report was compiled between April and October 2017 and constitutes a first overview of the online job-portal landscape in the Czech Republic. It is based on desk research of available data sources in the Czech Republic (e.g. public data, academic research and publications of interest groups) and expert opinions. Chapter 1 describes the methodology used for compiling the report in terms of the relevant search paths and data sources. Chapter 2 gives an overview of the main drivers for the use of online job-portals in recruitment and job-search, while Chapter 3 concentrates on the characteristics of the online job-portal market and lists the most important players. Moreover, it seeks to understand to what extent OJVs published on the online job-portals provide adequate information on the developments in the Czech labour market in terms of the number of vacancies and representation of sectors/occupations. Furthermore, it elaborates on the legal and regulatory framework guiding the activities of the job-portal owners and employers, highlights the differences between the public versus private online job-portals and delineates their relationships with one another. Chapter 4 covers the use of online job-portals in recruitment and job-search. It focuses on the differences in the behaviour of employers and job-seekers across sectors, occupations, qualification levels and regions. Chapter 5 presents the most important online job-portals in the Czech Republic for web-crawling and describes a step by step process of the OJV drafting and posting on select private and public online job portals. Chapter 6 concludes the Country Report by describing the main features of OJVs in the Czech Republic in terms of format and content. In particular, it explores to what extent OJVs contain information pertaining to hard and soft skills required for the job, how these skills are characterised and what they reveal about the nature of the job.

1. Methodology

1.1. Search Paths

The desk research was gathered between 17 April and 17 May 2017 and aimed at finding statistical data on labour market developments, vacancies and ways of finding jobs and employees. We also looked for previous analytical findings on online job advertising. The keywords (searched in Czech) were:

- job vacancy analysis
- recruitment of employees
- job searching survey
- job portals use
- online labour market
- job advertising analysis

Besides full text search, publications of the following institutions were particularly considered: National Training Fund, National Institute for Education, Research Institute for Labour and Social Affairs. The databases Proquest and EBSCO were also checked for possible academic research.

1.2. Data Sources

1.2.1. Public Data/Academic Research and Research/Surveys of Interest Groups

Apart from statistics based on the Labour Force Survey (LFS), two recent analyses of OJVs (CRISP and National Training Fund 2016), a report by the National Institute for Education (Infoabsolvent.cz 2013) and an earlier report by the National Training Fund (2010) were all useful. Furthermore, a survey conducted by the Fund for Further Education (2015) among the unemployed includes data on job-search methods. There is an online article with insightful overview on the situation on the job-portal market (ManagementNews.cz 2016a). Moreover, even though they are usually based on non-representative online surveys, some media news releases provided useful information about the differences between various groups of job-seekers and employers (e.g. Euro.cz 2016). Analyses of the content of OJVs in the Czech Republic do not emerge very often. Nevertheless, there are two important sources that were used. The National Institute for Education has analysed job advertisements several times, most recently in 2013, based on approximately 11,000 OJVs collected during one month of the previous year. Even though the portals used for the analysis were only Prace.cz and Sprace.cz (later renamed Volnamista.cz), and the most popular portal, Jobs.cz, is missing, the report still contains valuable findings. The other source is the Czech country report, compiled by the National Training Fund for the purposes of the Real Time 1 project. It's based on roughly 62,000 advertisements found on Jobs.cz, Prace.cz and the PES portal between June and September 2016.

1.2.2. Expert Opinions

Experts for interviews were initially sought from four types of institutions: employers, the public employment service, job-portal owners and the Czech Statistical Office. The process of obtaining the interviews can be summarised as follows:

- Among employers, a nation-wide association (HR Club) was first contacted, and an interview was carried out with its representative. Even though he provided some insights to the employers' perspective on OJVs, he was not able provide answers to significant parts of the questionnaire, nor was he able to recommend anyone in the association who would be able to do so. Therefore, the president of the national HR Association was also interviewed.
- In the PES, the methodologist of vacancies was contacted and successfully interviewed;
- On behalf of job-portals, the most important company, LMC, was contacted. The marketing manager was interviewed and provided thorough answers;
- The Czech Statistical Office does not take part in the ESSNet Big Data Project. Interviewees were nevertheless sought among its employees, possibly related to the topic of OJVs. Two department heads were contacted. They stated that their organisation does not deal with the topic of online job advertising, and they therefore declined the interview invitation.

The information gained from the sources is fairly reliable and consistent in these topics:

- Main trends in OJV use;
- Rough differences in OJV use by qualification level, professions and by company size;
- Characteristics of OJV market;
- Main features of OJV contents.

Nevertheless, no knowledge exists on the total number of vacancies, which is why stating the precise share of OJVs is impossible.

Table 1: Overview of the different sources used in the Landscaping Activity ⁽¹⁾

| Type of source | Title/year | Provider | Information on | | | | Quality |
|--|--|----------------------------------|---|---|-----------------------------|-------------------------------------|----------------|
| | | | Share of existing vacancies on online job-portals (PES/private) | Use of OJVs per sector/occupation/qualification level/ region | Skills requirements in OJVs | Other | |
| Source 1: Public data/academic research | Methods and duration of searching for a job 1993–2015 (2016) | Czech Statistical Office | | | | Statistics on methods of job search | Good |
| | Country report: Czech Republic (2016) (unpublished project report from the Real Time LMI 1 project) | CRISP, National Training Fund | | Yes | Yes | | Good |
| | Výzkum Kooperace [Survey “Co-operation”] (2014) | Fund of Further Education | | | | Statistics on methods of job search | Good |
| | Sledování krátkodobých trendů v poptávce po pracovní síle. [Monitoring of Short-term Trends in Labour Force Demand] (2010) | National Training Fund | | Yes | Yes | | Good (but old) |
| | Analýza inzertní nabídky zaměstnání v denním tisku a na internetu – 2012. [Analysis of Job Advertisements in Daily Newspapers and on the | National Institute for Education | | Yes | Yes | | Good |

⁽¹⁾ Only sources that directly deal with job advertising are listed here.

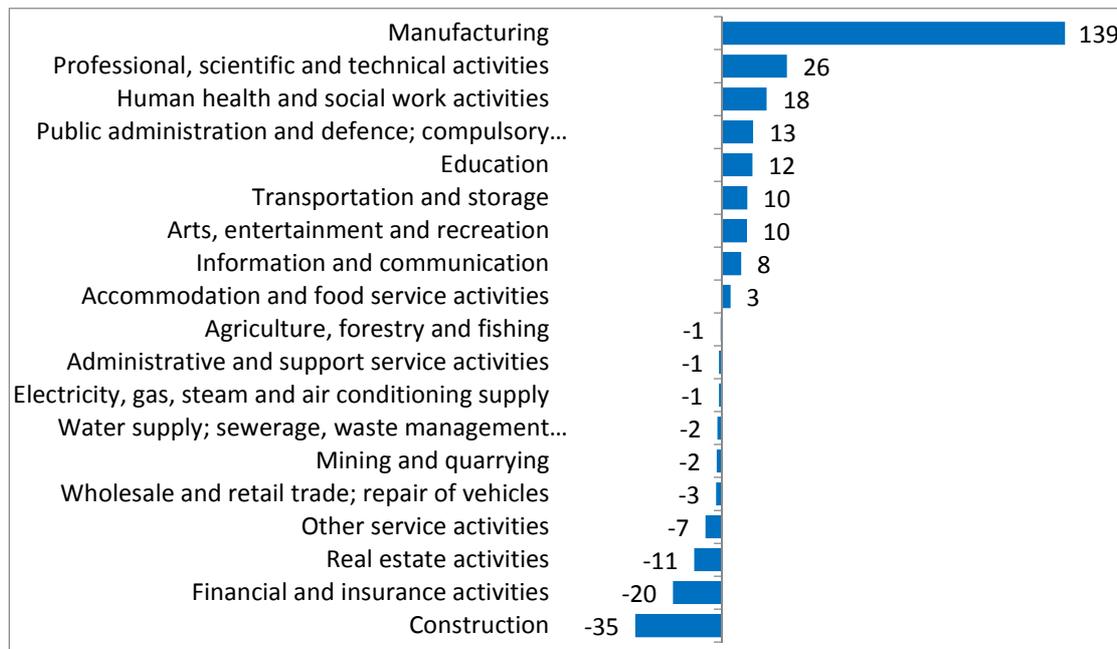
| | | | | | | | |
|--|---|---|-----------------------|------------------|------------------|--|--------------------------------|
| | Internet – 2012] (2013) | | | | | | |
| Source 2: Research/surveys of interest groups | Online trh práce v ČR [Online Labour Market in the Czech Republic] 1/2 and 2/2 (2016) | Managementnews.cz | | | | Analysis of the market of online job portals | Good |
| | Polovina Čechů najde práci do měsíce, ukázal průzkum. [Half of Czechs Find a Job Within One Month, a Survey Shows] (2016) | Euro.cz | | | | Survey on methods of job search | Limited |
| Source 3: Expert opinions | Expert 1 | LMC | Rough assessment | Yes | Yes | | Good |
| | Expert 2 | Labour Office, General Directorate | Rough assessment | Limited to PES | Limited to PES | | Good but mostly limited to PES |
| | Expert 3 | HR Association; Kooperativa | Own organisation only | Yes | Rough assessment | | Good |
| | Expert 4 | Confederation of Industry of the Czech Republic | Rough assessment | Rough assessment | Rough assessment | | Limited |

2. Labour Market Dynamics and Impact on the OJV Market

Labour market developments have been positive in recent years in the Czech Republic. Unemployment has been falling at the pace of roughly one percentage point per year since the second peak of the economic crisis in 2012/2013 (down to 4% in 2016). This is lower than in the pre-crisis years and also currently the lowest in the entire EU. The small number of people looking for jobs has important implications for the hiring possibilities and practices of employers. Employers now have difficulties finding suitable candidates for many kinds of jobs. As the large part of those who remain unemployed are people with low qualifications and sometimes also with a debatable will to work, employers are forced to offer much more to potential workers in terms of wage and working conditions, to reduce their requirements and to find channels to address and attract those who are already employed (E3).

Changes in the composition of employment across sectors and occupations share similar patterns with the rest of the EU, but in some respects they diverge from many European countries. The overall growth in employment has been driven by the manufacturing sector (Figure 1), especially by the motor vehicles industry, which is strongly represented in the country. Hiring in manufacturing raises the demand for technical skills and, as production is advancing technologically, also for IT competencies. Some sectors have, however, experienced a drop in employment, most notably construction and closely related real estate activities.

Figure 1: Change in employment by sector, 2013-2016 (thousands of persons)

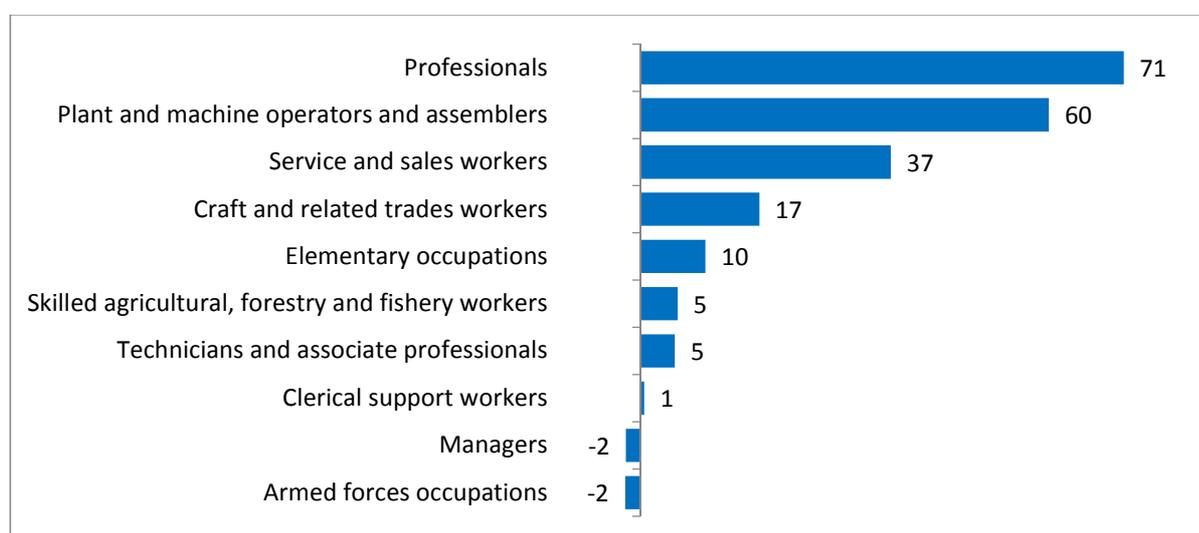


Source: Eurostat (lfsa_egan2).

In terms of occupations, professionals are the group that has expanded the most in the past three years, accounting for over a third of overall growth (Figure 2). They are followed by groups with relatively low ISCO levels (i.e. machine and plant operators, service and sales workers) while, for instance, more qualified managers and technicians and associate professionals have remained roughly stable in terms of employment. Looking at the more detailed level of occupations (two-digit ISCO), the largest growth in employment took place among assemblers (39,000 additional workers), drivers and plant operators (33,000), personal care workers (31,000) and science and engineering professionals (28,000). We also find IT professionals (7,000) and science and engineering associate professionals (7,000) among the occupations that have grown most significantly during the three-year time span. Among the few declining occupations, building trades workers fell the most (-34,000 jobs), which is closely related to the unfavourable trend in the construction industry.

Still, over a long time span, a clear structural upgrade of the qualification demands of jobs took place in the Czech Republic (Eurofound 2015: 36f.), and this is anticipated to continue in the coming years (Cedefop 2015).

Figure 2: Change in employment by occupation group, 2013-2016 (thousands of persons)



Source: Eurostat (lfsa_egan22d).

From the point of view of employees and job-seekers with at least secondary education, the situation on the labour market is now relatively favourable. This is not only due to the low total unemployment, but also because of a fairly high correspondence between the complexity of the skills gained during education and those demanded by employers. In 2014, 21% of people were over-educated when measured by a subjective indicator and even fewer when evaluated using objective measures, which makes the Czech Republic one of the countries with the lowest over-education in the EU (Kalíšková 2015). Still, there are professions with significantly higher numbers of potential candidates than actual vacancies; an analysis by Cedefop (2016) mentions workers in accommodation and gastronomy, project managers, clerks and architects. These professions might be underrepresented in advertisements as well, as employers are more likely to advertise vacancies that are harder to fill. By contrast, employers now have difficulties finding engineers and some other technical professionals, which is related to the growth and job upgrading in manufacturing. Other affected occupations are IT professionals, doctors and teachers.

3. Context and Characteristics of the Online Job-portal Market

3.1. Legal/Regulatory Framework

Vacancy advertising is not heavily regulated. Previously, employers were obliged to report all their vacancies to the PES, thus making them accessible to all unemployed persons. However, the reporting duty was often avoided by employers and had not been enforced by the authorities, as there were no means by which to find out about undeclared vacancies. This is why mandatory reporting was suspended as of January 2012 and reporting was made voluntary instead (NašePeníze.cz 2012). As the number of vacancies registered by the PES did not decrease after the change (Ministry of Labour and Social Affairs: Unemployment trends since 2004), it can be assumed that only employers interested in recruiting with the help of PES reported their vacancies when it was obligatory, and they continued doing so afterwards. Therefore, we can conclude that the vacancies statistics collected by the PES before 2012 were not representative of the entire labour market, and they continue to be unrepresentative.

Currently, the Employment Act (Act 234/2004, §34-38) specifies reporting of vacancies as an option that can be used by employers in order to offer jobs to potential candidates through the PES; they can also opt to have the vacancies published through electronic media.

At a more general level, job vacancy advertising is regulated by the Act Against Discrimination (198/2009). The act bans discrimination with regard to the accessibility of jobs and occupations on the basis of gender, race, ethnic background, sexual orientation, age, disability, religion or political views. This principle implies that job advertisements cannot be written in a way which could exclude, for instance, women or older people from applying for the job, with some exceptions listed in the act. Different treatment of candidates for jobs and employees on the basis of all the above mentioned characteristics and also based on physical attractiveness (Matějů and Anýžová 2017) is well documented in the literature. The topic is further addressed in Section 6.

The contents of vacancies in state institutions that belong to the category of “state service jobs”⁽²⁾ are regulated by the Act on State Service (231/2014) in § 24.

3.2. General and Employment-related Use of Internet

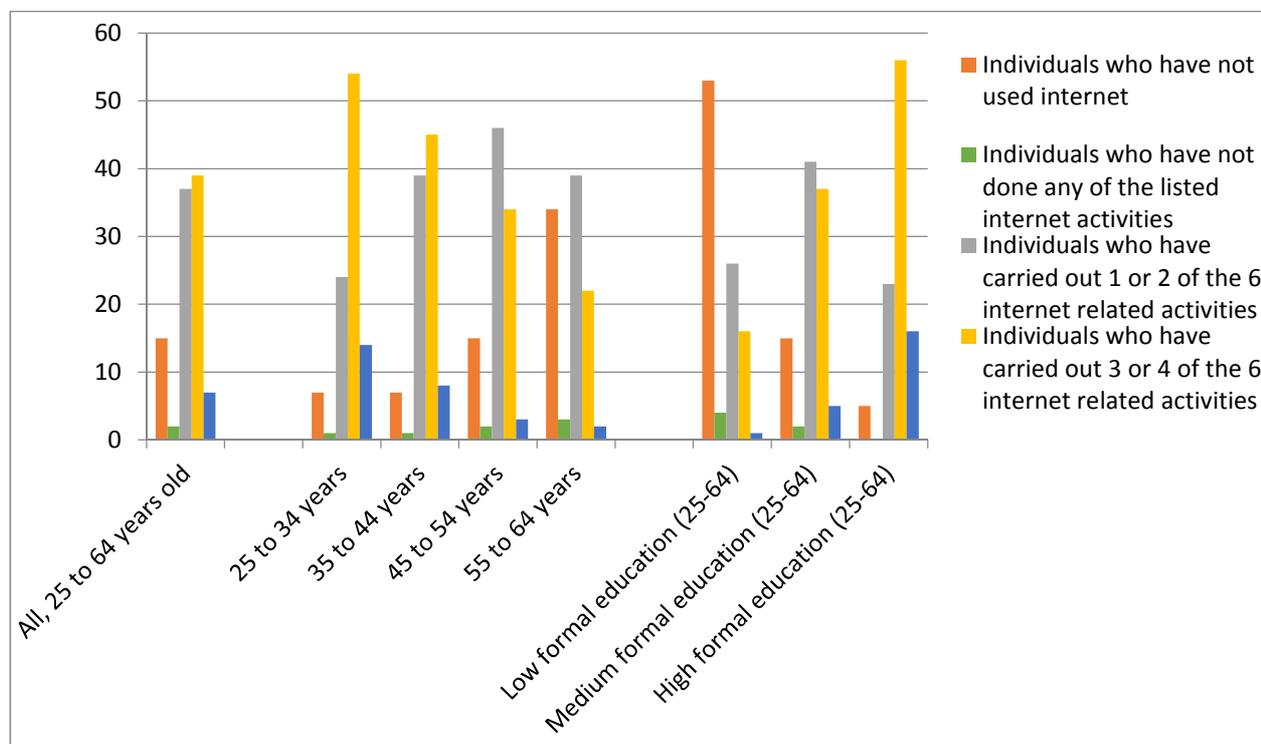
Almost everyone uses the Internet in the Czech Republic. In 2013, only 2% of people between ages 25 and 64 stated they had not done any of the Internet activities listed in the Eurostat survey question ⁽³⁾, one of which is simply searching for information (Figure 3). Nevertheless, the extent of activities people perform differs according to age and education level. Only 24% of people between 55 and 64 have done at least three of the six listed activities, as opposed to 68% of people in the group between ages 25 and 34. The same holds for 72% of people with high education attainment, but only for 42% with medium education and 17% with low education (Ibid.). Even though search-

⁽²⁾ In Czech “služební místa”.

⁽³⁾ The activities are: used a search engine to find information, sent an email with attached files, posted messages to chat rooms, newsgroups or an online discussion forum, used the internet to make phone calls, used peer-to-peer file sharing for exchanging movies, music, created a Web page.

ing for a job online would probably correspond to the ability to do the two most basic listed activities (i.e. using of a search engine and sending an email with an attachment), the indicator can be interpreted as a proxy for Internet savvy. It can therefore be assumed that searching for a job on Internet portals is much easier for younger and more educated individuals.

Figure 3: Internet use (in %)



Source: Eurostat (isoc_sk_iskl_i).

Eurostat also has an indicator containing more specific internet activities, and this includes “job searching or sending an application” (isoc_ci_ac_i). The indicator shows the share of individuals that use the Internet for this purpose. According to the Eurostat database, 43% of Czech unemployed persons used the Internet for job searching or sending an application in 2017, which is a little less than in the EU-28 and significantly less than what is indicated by results of other surveys (see Section 4.1). Use of the Internet for job searching is very low among employed people, at only 5% compared to 17% in the EU-28. This indicator also confirms a large difference between young and older people; 8% of 25-34 year olds versus 2% of 55-64 year olds, regardless of employment status, have used the Internet for job search. There is a smaller difference between primary and tertiary educated people. However, these data have to be approached with caution, as they represent the entire population, including people who are not currently using any methods to search for a job. We therefore cannot conclude whether the small prevalence of Internet use for job search among the working population is caused by preference of other channels or by not searching at all.

Characteristics of the OJV Market

The Czech online job advertising market is dominated by the portals Jobs.cz and Prace.cz, which have the highest monthly number of online visits (according to an analysis of website traffic by

www.similarweb.com from August 2017 to January 2018 ⁽⁴⁾). The job portal with the third most visits per year is Volnamista.cz and the fourth is Profesia.cz, while the other portals have significantly lower traffic. The distribution of the market would look similar if measured by the number of users of the portals (ManagementNews.cz 2016b).

The two largest portals have been dominant for a long time. In a survey conducted by NTF in 2010, 90% of employers specified that they use Jobs.cz, 63% use Prace.cz and only 5% were not using either of these two portals (National Training Fund 2010: 13). Other portals have attempted to gain a larger share of the market, including the recent ambitious launches of Airjobs.cz and the web-scraping meta-portal Chcipraci.cz, but so far none have made a breakthrough (ManagementNews.cz 2016b).

The two largest portals are owned by a single company, LMC, founded in mid-1990s by a Czech businessman, who sold it to the Finnish media company, Alma Media, in 2012. Afterwards, Alma Media bought a number of other job-portals in Central Europe, including the Slovak portal, Profesia, which also runs the aforementioned Czech portal of the same name, and which is currently the fourth largest in the Czech Republic. Out of the four most important portals, only Volnamista.cz, which is actually a section of the largest Czech internet search engine, Seznam.cz, has a different owner. The long-term ownership of three of the largest job portals by one company makes the market nearly monopolised (ManagementNews.cz 2016a).

3.3. PES Online Job-portal(s)

The vacancy portal of the Czech PES contains nearly 60,000 original advertisements, representing between two and five times as many vacancies ⁽⁵⁾, all of which have been posted for free. Lower qualification requirements prevail in the vacancies, and most companies that post on the PES portal have long-standing relationships with the PES (E2). Employers either post advertisements by themselves (in 15-20% of the cases), or they contact a person working in the PES, who does it for them (E2). However, there is no pre-selection of the companies or potential applicants. The advertisements inserted by the PES staff are better structured, with more accurately sorted information in the required categories (E2). Unlike the private portals, the PES portal has vacancies coded to ISCO classification and also contains information about the number of available positions per published OJV, as some can represent multiple openings. Every day, the portal provides all available vacancies as a free download in XML and HTML. Many other portals, including the large Prace.cz, use the opportunity to replicate the contents of the PES portal on their websites.

The portal lacks an updated interface. Technical development stopped in 2011, because the launch of a new website was expected, which has not yet happened. Still, the PES representative believes that a completely new portal will be created in the coming years (E2).

A representative of the employers' association (E4) believes that the EURES platform is not widely used by employers, and that more direct programmes for obtaining foreign workers, like the "Regime Ukraine" ⁽⁶⁾, better suit employer needs. The president of the HR association has no

⁽⁴⁾ The website describes its methodology as follows: „SimilarWeb uses data extracted from four main sources: 1. Global Panel Data from hundreds of millions of desktop/mobile devices 2. Global ISP Data from partners with millions of subscribers 3. Public Data Sources from over a billion sites and app pages every month 4. Direct Measurement Data from hundreds of thousands of sites and apps.

⁽⁵⁾ The PES portal is the only portal providing information on how many actual vacancies are contained in an advertisement.

⁽⁶⁾ <https://www.mpo.cz/dokument178478.html>.

knowledge about EURES (E3). All Czech advertisements are automatically posted on the EURES platform and automatically removed through a web systems synchronisation between the PES and EURES. The EURES flag is added if the employer expresses a particular interest in international recruitment when filling out the form for the advertisement (E2).

3.4. Private Online Job-portals

Jobs.cz is the most visited job portal in the Czech Republic. It contains roughly 20,000 advertisements, according to the portal itself. All vacancies are directly posted by employers (E1), which makes Jobs.cz a primary portal. Even though advertising is not restricted to any particular sectors or occupations, LMC maintains the higher profile of Jobs.cz by charging almost twice as much as advertisements on Prace.cz (ManagementNews.cz 2016b). This leads to a bias towards more qualified occupations. Nearly all advertised jobs are available only to candidates with at least secondary education and a certificate of graduation ⁽⁷⁾ (E1). Despite this, because of low unemployment and challenges experienced by companies looking to find employees, the number of vacancies with lower qualification requirements on Jobs.cz has grown (E1).

As the portal covers the more qualified segment of the labour market, a significant number of advertisements are in English. Some employers, mostly large ones, use their own formats for advertisements, which differ both in content and graphical appearance from the standard format used on the portal. Employers can use the application Teamio to manage recruitment. A representative of an employer praised the application as a tool that makes the recruitment process more efficient and attributed much of the popularity of the portal to Teamio (E3).

Prace.cz is the second most popular job-portal among Czech Internet users. The traffic, measured both in visits of the website and in its unique user accounts, equates to roughly half of the figures of Jobs.cz. Although the two portals are owned by the same company, LMC, Prace.cz targets different users. This is reflected in the portals' slogans. While Jobs.cz invites job seekers to "Find a job that you will love", on the front page of Prace.cz, users are invited to "Find a job that will suit you." This signals a weaker emotional bond with one's potential job. The average vacancy tends to require a lower qualification and offers a lower wage. Currently, vacancies with a less prestigious type of secondary degree account for the majority of advertisements. According to the interviewed LMC representative, the distinction between the job-portals Jobs.cz and Prace.cz correlates to jobs above and below the average Czech wage (E1).

The portal advertises nearly 80,000 advertisements. However, only 20-30% of the advertisements are originally posted by employers, while the rest are taken from the PES vacancy portal (E1, E2). The share of advertisements in English is presumably lower than on Jobs.cz, because of the portal's lower qualification profile.

Volnamista.cz is the third most popular job-portal in the Czech Republic. It differs from the other main portals in a number of respects. The portal is run by one of the owners of the largest Czech Internet search engines, Seznam.cz and functions as one of the search engine's many side products. The main factor in the popularity and success of Seznam.cz is reflected in the fact that unlike most other private job-portals, Volnamista.cz publishes advertisements in a default appearance for free. Because of the connection to the popular search engine and because of free-of-charge advertising, the portal is extensively used by job-seekers and employers.

⁽⁷⁾ Secondary education in the Czech Republic is ended either with an apprenticeship certificate marking an end of one's formal educational pathway (in Czech "výuční list") or a school leaving certificate entitling the graduate to apply for higher education (in Czech "maturita").

The portal has an unusually simplistic and old-fashioned design. Advertisements are organised in a style resembling a bulletin board and contain very little text with no structure. When clicking on them only contact details are present and in order to obtain a URL of an advertisement it is necessary to click “share or send the ad” ⁽⁸⁾. Additional advertisements can then be viewed on the same page, so the website does not switch to the next list of search results like other portals do. Advertisements can be filtered only by sector, district and type of contract.

Because no fees are charged, it is likely that smaller companies use this portal and that the qualification level of vacancies is lower. The impression when browsing is that the advertisements are originally inserted by employers and not collected from elsewhere. Currently, there are about 14,000 advertisements.

3.3 Role of Other Recruitment and Job-search Channels

Printed advertising: The importance of printed advertising is declining (Infoabsolvent.cz 2013) and has been pushed to the margins of the recruitment market (E1). Even so, this channel cannot be completely disregarded. In a recent survey, 38% of unemployed young people under 25 reported using printed job advertisements, while 57% of older unemployed people, between 50 and 64 use print media for job search (Fund of Further Education 2015). Printed advertisements in newspapers and notice boards are likely to be used more often for locally based jobs such as for waiters in a village restaurant (E1). Consistently, the qualification profile of printed advertisements has been assessed as significantly lower when compared to online advertisements (Infoabsolvent.cz 2013).

Social networks: Even though social networks still lag behind job-portals as a job advertising channel, their use for this purpose is rising quite fast. In only two years, between 2013 and 2015, the share of enterprises using social networks for recruitment grew from 4% to 10% (Eurostat: Social media use by purpose [isoc_cismp]), and it is large companies who are most likely to use this medium. Still, this number is below the EU average. The rise of recruiting through social networks might be accelerated by the current difficulties experienced by many employers to find employees through impersonal portal advertising (E3).

Personal contacts: Searching through one’s personal network is very common. In 2014, 70% of young unemployed persons and 73% of older unemployed persons between 50 and 64 used this method (Fund of Further Education 2015), and personal networks were even more common when searching for jobs with lower qualification and lower wages (Euro.cz 2016).

⁽⁸⁾ In Czech “Sdílet nebo poslat inzerát”.

4. Use OJVs in Recruitment and Job Search

4.1. Use of OJVs in the Recruitment of Labour and in Job Search

Posting and reading online advertisements was assessed by the interviewed experts as the most important form of recruitment and job search in the Czech Republic (E1, E2, E3). The representative of a job-portal (E1) believes that the majority of vacancies appear on the portals. Results of available surveys give only partial support to this theory. In a 2014 survey of unemployed persons, among those who declared they were actively looking for a job, 76% of young unemployed persons up to 25 years of age and 61% of older unemployed persons between 50 and 65 years of age, mentioned job-portals as a method they use for job-search. Still, both age groups also indicated that they use personal contacts extensively (70% and 73%, respectively). Among all unemployed persons, more people indicated that they search through personal contacts (94%) than through advertisements, both printed or online (76%) (Czech LFS data 2015). It is not possible to conclude that personal contacts are a more important channel by simply comparing these numbers, as we do not have the means to measure the intensity and effectiveness of using the two methods. Nevertheless, the surveys show that online advertisements and personal contacts are both very widely used by the Czech unemployed population to find a job.

A major factor of the employers' decisions of whether or not to advertise a vacancy are the expected difficulties associated with finding suitable candidates. The effect on the decision is, however, non-linear. On one hand, it does not make much sense for employers to advertise positions for which there is no need for complex or rare skills, as such employees can be found by other, cheaper channels and without having to manage an extensive recruitment process (E4). On the other hand, when the expected difficulty exceeds a certain level, it also becomes more likely that the employer could avoid spending time and money on advertising, because the chance of finding suitable candidates is too small. In these cases, employers need to trace and rather contact concrete candidates personally (E3). It can therefore be assumed that occupations of middle to higher qualification profiles are overrepresented in OJVs, while the most and least complex occupations use the portals the least. In the current situation of low unemployment in the Czech Republic, OJVs might be expanding to lower qualification levels of jobs, as recruitment is becoming harder even in this segment (E1). On the other hand, OJVs might be losing shares of the highest profiles of jobs, because their success rate for recruitment is falling (E3).

An important finding about the qualification structure came from the Czech country report for the project Real Time LMI 1 (CRISP and National Training Fund 2016: 7f.). The analysis found a larger share of low-skilled OJVs than the general skills level of the labour market would suggest. Nevertheless, the explanation is that there is a higher turnover in low-skilled jobs, which gives the impression that there are more low-skilled jobs advertised.

As for structural characteristics related to recruitment through OJVs, a factor influencing which employers use job-portals is the fact that most OJVs are posted at a cost to the employer, with the exception of the PES portal and Volnamista.cz. Smaller employers are more financially restricted and therefore may tend to avoid costly advertising in favour of non-commercial channels (E4). By contrast, larger employers tend to have more financial and personnel resources for recruitment and may also be able to develop favourable arrangements with job portals (E4). No data or expert opinions provided information on possible links between specific sectors and the likelihood to advertise

online. Geographically, we are not aware of important differences among employers' approach to OJVs apart from differences in the regional unemployment rate, sectoral structure of the economy and qualification composition of job-seekers (E1).

As already mentioned at the beginning of this section, job-portals are more frequently used by younger people, because they tend to have better digital competencies. By the same logic, more frequent use of job-portals is to be expected of people with higher education. As a result, employees earning a higher income tend to find their jobs more frequently through OJVs, than employees with a lower income, according to one survey conducted by a job portal (Euro.cz 2016). According to one interview, OJVs are mainly used by people who are actively searching for a job, mostly the unemployed, which is to a large extent confirmed by the previously mentioned Eurostat statistics. It is unlikely that many employed people browse job portals in their free time. However, this is important for recruitment in times of low unemployment, when companies compete for people who already have a job (E3).

4.2. Expected Trends in the Use of OJVs in Recruitment and Job-search

There were contradictory opinions from interviewees from the HR Association and from a job-portal regarding the future changes in the role of OJVs. The HR expert (E3) believes that online advertising might decrease if unemployment remains at the current low level or falls further, because this channel is not efficient enough in such circumstances. The job-portal representative (E1) does not expect any weakening of the role of OJVs. In addition, he points to new trends in online advertising related to a possible rise of flexible work arrangements.

5. Identifying Online Job-portals for Web-crawling

5.1. Documentation of the Job-portal Research Process

5.1.1. Identifying the Online Job-portals Through Google Search

Table 2: Grid for documenting the Google search for job-portals

| | | |
|-----------------|-----------------------------------|---------------|
| Search 1 | Pracovní inzerát | Job advert |
| | Number of results per search term | 983,000 |
| Search 2 | Hledání zaměstnání | Job search |
| | Number of results per search term | 846,000 |
| Search 3 | Volná pracovní místa | Job vacancies |
| | Number of results per search term | 1,900,000 |
| Search 4 | Pracovní portál | Job portal |
| | Number of results per search term | 825,000 |
| Search 5 | Nabídka práce | Job offer |
| | Number of results per search term | 4,570,000 |

Source: Janíčko (2017).

The ten portals included in Table 2 were selected based on average rankings of the portals in Google search.

5.1.2. Identifying the Online Job-portals Through Expert Interviews

All experts identified Jobs.cz and Prace.cz as important, and some experts also consider the PES portal as central.

5.1.3. Validating the Selection of Online Job-portals

The selection was validated by phone with the previously interviewed experts who represent employers.

5.2. Conditions for Drafting and Posting OJVs in the Selected Job-portals

5.2.1. Jobs.cz (commercial job-portal)

Workflow of drafting an OJV: Apart from the standard template, the employer can pay additional fees to use their own graphic elements or even the design of their company website. The process begins with registration of the employer, which is associated with the company's identification number. The employer then specifies the company's sector and the number of employees (in both cases using categorised lists). After registration, an OJV can be drafted.

Characteristics of the OJV template: fields in the form:

- Name of the position (mandatory, text);
- Field of work (mandatory, selection from a list);
- Profession (optional, selection from a list);
- Place of work (mandatory, necessary to insert address);
- Description of the job (mandatory, textual with suggested but freely editable structure);
- Language of communication (mandatory, selection from a list);
- Required level of education (mandatory, selection from a list);
- Language skills (optional, selection from a list);
- Full time / part time (mandatory, tick box);
- Wage range (optional, text);
- Benefits (optional, tick boxes)
- Type of contract (optional, tick box);
- Length of contract (optional, selection from a list);

Character limits were not found. At the end, the employer can select a portal belonging to LMC on which the employer wants to advertise.

Workflow of posting an OJV: Advertisements are posted automatically without the need to be approved.

Pricing: A standard advertisement displayed for one month costs 7900 CZK (around EUR 315 as of February 2018). There are significant discounts for "packages" of more advertisements that can also include posting on other portals owned by LMC, like Prace.cz. It is likely that more discounts can be negotiated individually. More information is available at <https://firmy.jobs.cz/cenik/>. The price may negatively influence use by smaller companies (E4), especially because they do not have a need to pre-pay for a larger quantity of advertisements.

Communication with operators: During the drafting of an advertisement, it is possible to click "Need help" and then use either a provided phone number or a contact form.

5.2.2. PES portal ⁽⁹⁾

Workflow of drafting an OJV: To advertise on the PES portal, employers announce the vacancy to the local PES office by phone or in written form. The vacancy is then inserted by a PES employee. Employers can also advertise directly through the portal. First, they have to contact a local PES office to enter the PES registry. A representative of the employer also has to be registered as a

⁽⁹⁾ <https://portal.mpsv.cz/sz/obcane/vmjedno>.

portal user, and at the employer's request, the PES office then assigns a representative to the employer. Only one standardised template is available with no graphic options.

Characteristics of the OJV template: Fields in the form:

- Occupation (mandatory, selection from a list of CZ-ISCO categories);
- Title of occupation (optional, text) – this becomes the title of the advertisement when published;
- Number of vacancies offered by the advertisement (mandatory, number);
- Physical workplace (mandatory, selection from a list): pre-filled according to employer's contact data, can be chosen out of the employer's contact addresses, it can be left blank and specified in notes;
- Where to apply (mandatory, selection from a list): to be filled out in the same way as physical workplace;
- Who to contact (mandatory, selection from a list): out of the list given to the PES office, to be filled in the same way;
- Shifts (mandatory, selection from a list);
- Working hours (mandatory, selection from a list);
- Type of contract (mandatory, selection from a list);
- Minimum education required (mandatory, selection from a list);
- Duration of the contract (mandatory, selection from a list);
- Date of start of the work (mandatory, textual or selection from a calendar);
- Date of completion of the work, if the contract is fixed-term (mandatory, textual or selection from a calendar);
- Wage range (mandatory, number);
- Suitability of the job for certain groups of people (mandatory, text or selection from a list: graduates/youth/disabled);
- Agreement to be published under the "blue employee card" for hiring foreigners (voluntary, tick box);
- Willingness to hire third-countries foreigners (voluntary, tick box);
- How to publish (optional, selection from a list) – choose from the options: do not publish (only to be offered by PES employees in person); publish; publish without revealing identification details of the employer or publish with the interest to hire foreigners from EU (will be marked on EURES);
- Additional information (optional, text);
- Message to the PES office (optional, text).

Additional optional fields:

- Benefits (list);
- Required skills (list);
- Language skills (text);
- Required previous professions (text);
- Required education field (list).

Workflow of posting an OJV: Advertisements automatically appear on the portal approximately two hours after drafting and then have to be approved by PES. The employer can be contacted to edit the advertisement in case of formal mistakes, and the advertisement can be deleted if it is determined to be discriminatory.

5.3. Contacting the Online Job-portal Owners

Emails to all portals have been sent. Two answers were received:

- LMC does not agree and would consider legal action if automatic data collection takes place.
- A representative of Annonce.cz expressed consent to enable automatic web-crawling of their website. They need to know IP addresses from which the crawling will be done in order to allow them access.

6. Format and Content of OJVs

6.1. Legal/Regulatory Framework

While format and content of job advertisements could potentially depend on legal regulations, this is not common in the Czech Republic. Job advertising as a whole is not specifically addressed by any law, and therefore no information is required to appear in the advertisements. Nevertheless, there are some restrictions imposed by laws of a more general scope. The most relevant in this context seems to be the **Anti-discriminatory Act** (Act No. 198/2009), which bans unequal treatment with regard to access to a job based on a number of individual characteristics. In relation to employment, the most important are age, gender and ethnic background. It is well known that in real life employers often discriminate against various age groups, gender (often women) and ethnic minorities. While it is difficult to address this problem in other phases of the recruitment process, discrimination can be detected and removed if it appears in an advertisement.

Consistent with the law, employers almost never express explicit preferences regarding age and gender in OJVs, which is an improvement compared to earlier years (Šťastnová and Tillner 2013: 44f.). Still, a significant number of job advertisements contain indirect discrimination, most often related to age (E1). A stereotypical way to do this is the phrase “work in a young collective”⁽¹⁰⁾ which, although not explicitly setting age as a selection criterion, aims at discouraging older job-seekers from applying, and is therefore considered discriminatory (E1). Employers can, however, use less explicit phrasing without the risk of potential accusations of unequal treatment. Common features of advertisements aimed at younger people stress important factors in their career decisions, like flexible working time, possibilities to balance work and family life, benefits and company culture (E1).

Concerning gender, a gender-biased advertisement can be implied by the very title of the job. The Czech language grammatically distinguishes the gender of any noun, including agents of a given activity, which also applies to occupations. For example, the noun “učitel” (teacher) implies a male teacher, while “učitelka” is female. Generic names of occupations are masculine⁽¹¹⁾, while the feminine noun is created by adding a suffix, therefore it is actually easier to detect the intent to hire a woman on a given position and more difficult to reveal the desire to restrict applicants to men. Female forms of nouns are probably most often used in occupations of lower to mid-level task complexity; notable examples include assistant (“asistentka”) or a sales assistant (“prodavačka”) (E4). Employers do not refer to ethnic backgrounds in advertisements, but they do answer more often to applicants with Czech names (E1). Overall, some kind of discrimination can be found in 10 to 12% of advertisements, as estimated by a job-portal representative (E1) or in every eighth advertisement, according to an analysis done by the Czech Helsinki Committee a few years ago (Lidovky.cz 2012). The HR Association representative (E3) believes that in cases where the employer is afraid of potential charges of discrimination by candidates who are not selected, there are fewer specific requirements in the advertisement. This leaves more space for the company to recruit arbitrarily according to impressions from the personal interview, which is the most important factor impacting the final decision anyway (E3).

⁽¹⁰⁾ In Czech “práce v mladém kolektivu”.

⁽¹¹⁾ There is a few exceptions where the default is feminine, like “zdravotní sestra” (nurse) or “letuška” (stewardess).

Certain **occupations and activities have legally regulated requirements** that have to be met by individuals working in a respective occupation. As of February 2018, there are roughly 320 regulated occupations and activities, according to a national database ⁽¹²⁾. The list includes occupations such as teachers, health care and pharmacy professionals, attorneys, a number of technical occupations, environmental specialists and occupations dealing with animals. The prescribed requirements vary between the occupations; they can be formal qualifications, years of experience, health conditions, a clean criminal record, etc. Legal regulations ensure that OJVs do not contradict these requirements and are more likely to be precisely worded according to the legal requirements. On the other hand, they may also leave out or simplify the description of formal qualifications and instead refer to the laws where all requirements are precisely listed.

The only law that relates to contents of job advertisements is the **Employment Act** (Act No. 435/2004, § 37), which only applies to the PES. It says that the labour office registers the following characteristics of job vacancies, reported by employers:

- Identification of the employer
- Basic description of the job, namely kind and place of work
- Requirements for performing the job
- Basic information on working and wage conditions
- Potential suitability to people with disability
- Information on whether the contract would be indefinite or fixed-term and assumed duration
- Other information depending on the employer's wish

Out of these characteristics, all of them must be included in OJVs on the PES portal, with the exception of the length of the contract. The PES representative confirmed that the information on wage is required, but the employers can choose a range as wide as they like (E2). Besides, advertisements on the PES portal always contain information on whether the job is full-time, part-time or based on another contract other than a standard employment contract ⁽¹³⁾, as well as how many shifts are required. The labour office has to categorise OJVs into ISCO classes, whereas other portals create their own categories that better fit the thought processes of job-seekers (E2).

6.2. Format and Content of OJVs

The headline of an advertisement is always made from the **title of the working position**. The portals let employers name the position freely according to their wishes; the field of work is offered as a filtering option. In the opinion of the job-portal's representative (E1), titles of jobs are highly heterogeneous without any unifying terminology. Consequently, the same kind of job can often have multiple titles assigned by different employers, which causes trouble for job-seekers who may not understand what type of job the title implies. They therefore orient themselves based on the competencies listed in the advertisement.

Even though **wage** undoubtedly influences job-seekers' decision to apply for a job, many employers leave it out and only decide what to offer in the later phases of the recruitment process; the interviewee from a job-portal believes that wage is missing in a majority of advertisements (E1). In his opinion, employers give new employees higher wages than the current ones, and if they re-

⁽¹²⁾ http://uok.msmt.cz/uok/ru_list.php.

⁽¹³⁾ A contract on a working activity (in Czech "dohoda o pracovní činnosti" (DPČ)) and a contract on performing work (in Czech "dohoda o provedení práce" (DPP)) are available besides the standard contract. They provide workers with fewer rights, can include only limited number of working hours and should be used by employers only marginally, according to the law.

vealed this in advertisements, they would risk pressure, dissatisfaction and departures of the current workers. An analysis of OJV contents in 2012 found that wage was only stated in 16% of online advertisements, while 33% used only the meaningless phrase “good financial conditions” and the remaining 51% did not mention wage at all (Šťastnová and Tillner 2013: 51). Information on wage is differentiated based on ISCO major group, with groups representing lower-skilled jobs (ISCO 7-9) more often stating wage than higher-skilled groups (ISCO 1-3) (see Table 3).

Table 3: ISCO Group and Frequency that Wage Information is Shared on OJVs

| ISCO Group | Percent of OJVs containing information on wage |
|------------|--|
| 1 | 13% |
| 2 | 18% |
| 3 | 15% |
| 7 | 25% |
| 8 | 20% |
| 9 | 26% |

Source: Šťastnová and Tillner (2013).

The reasons for these differences likely resides on both sides of the job matching process. On one hand, despite the importance of wage as a factor in employees choosing potential jobs, it is a more important factor for lower paid jobs for which any small supplementary amount of money can make a big difference in one’s living standards. On the other hand, in the higher qualified jobs, the value that the worker can bring the employer depends more on his or her soft skills and competencies, which are often hard to reveal through formal qualifications, which leaves more room for salary negotiation during job interviews. Interestingly, the same analysis found that wages were included in a much larger share of newspaper advertisements across ISCO levels (Ibid.: 28-29). It can be assumed that the motivation to declare wage in online advertisements is lower, because job-portals are able to reach more job-seekers and therefore minimises the pressure on employers to put effort into attracting candidates.

Regarding the **legal form of the work, amount of working hours and the length of the contract** (fixed-term or indefinite), the portals differ in number and names of categories that contain this information. They sometimes use imprecise terms, which are difficult to understand, but intended to provide relevant information to job-seekers quickly and efficiently:

- On the PES portal, the item “legal relation” ⁽¹⁴⁾ contains information categorised into “full time”, “part time” (both implying employment contract), “state service employment” and two non-standard types of contracts. Information on the length of the contract is missing in the structured part of OJVs.
- On Jobs.cz, all three pieces of information (legal form, number of working hours, length of contract) are separate from one another. However, the information on working hours is called “type of the working relation” ⁽¹⁵⁾.
- On Prace.cz, working hours are called “working relation” as well. The length of the contract, when stated, is contained in the section labelled “form of the contract” ⁽¹⁶⁾.

Formal qualification requirements appear in advertisements as a field with a basic vertical categorisation distinguishing between primary education, secondary without a certificate ⁽¹⁷⁾, secondary

⁽¹⁴⁾ In Czech “pracovněprávní vztah”.

⁽¹⁵⁾ In Czech “Typ pracovního poměru”.

⁽¹⁶⁾ In Czech “Smluvní vztah”.

with the certificate and higher education. The required field of study does not have a separate field. When they need to, employers specify it in the body of the text. Results from the 2012 OJVs analysis show that less than half of advertisements mention a field of study. Out of the explicitly required fields, the technical fields made up the majority (Šťastnová and Tillner 2013: 41).

Requirements for **competencies and skills** are included in unstructured text, with the exception of foreign languages, which has a separate field on Prace.cz. No standardised terminology of competencies is used by employers, despite the fact this portal was created by a large HR consulting company (E4). As a consequence, descriptions of competencies in job advertisements is not very transparent. The job-portal representative sees the situation as follows:

“On one hand, people don’t really know what competencies they have and can’t adequately describe them. On the other hand, employers include a large variety of terms for skills and their combinations, on very different levels of generalization. As a result, mutual comprehension between employers and job seekers regarding skills is low. It would make sense if there was a competence model, known by employers and job-seekers, which would categorise competencies into relatively general groups like e.g. graphical software or business skills.”

In the view of the employers’ association representative, required skills in advertisements are either described in very vague terms that do not really distinguish between the activities the job entails, like reliability or autonomy, or are expressed as formal certificates (E4). Heterogeneity of skill requirements in job advertising also manifests itself in findings of the OJVs analysis created during the first Real Time LMI project. Apart from foreign languages, use of mathematical tools as well as equipment and fine manipulative abilities, all other competencies have a low frequency of occurrence in advertisements. However, it should be noted that the unclear terminology in advertisements results in some uncertainties in the interpretation of the findings (CRISP and NTF 2016: 14ff.).

Experience in the respective field of work often serves as a proxy for skills. The 2012 OJVs analysis found experience requirements in 70% of online advertisements. Such a high share shows that experience is an important element to be taken into account when analysing the demand for skills, as it has the capacity to substitute a large quantity of terms directly containing skills requirements. Experience requirements most often occur in job advertisements for occupations in ISCO classes managers, professionals and craft workers (Šťastnová and Tillner 2013: 44f.). **Personality traits** are also mentioned in most OJVs (Ibid.: 48), even though it is not always easy to draw a line between personality traits and skills. For example, the cited analysis regarded communication abilities as a personality trait. None of the interviewees are aware of references to skills in indirect or non-skill terms.

6.3. Expected Trends in the Format and Content of OJVs

Despite the long-term stability of the format and contents of OJVs, there are some changes caused by the current low unemployment rate and the difficulties that many companies face when looking for employees. In such a situation, employers have to decrease their requirements, often reducing them to a level of formal education, as they count on providing new employees training in case they do not have the corresponding qualification or experience (E3). The self-presentation of companies also tends to be more focused on benefits that can be provided to the new employee in order to create an image of an attractive place to work (E3).

⁽¹⁷⁾ The certificate entitles graduates to apply for higher education. School ended in this way are supposed to provide more complex education.

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Expert Interviews

| No. | Name of organisation | Type of organisation | Expert's position | Interview date |
|-----|---|--|---|----------------|
| E1 | Private online job-portal | Labour market intermediary | Marketing Manager | 10 May 2017 |
| E2 | Labour Office, General Directorate | PES | Job vacancies methodologist | 9 May 2017 |
| E3 | HR Club; Kooperativa | Association of HR professionals; insurance company | Representative of the HR Club; HR representative of Kooperativa | 10 May 2017 |
| E4 | Confederation of Industry of the Czech Republic | Employers' association | Expert of employers' section | 24 April 2017 |