

Mapping the landscape of online job vacancies

Background report: Luxembourg

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 Franz Clément

Date of release: 19 January 2018

While the original text has been thoroughly revised by Cedefop experts, it did not go through the official publication process (peer review, language editing and formatting)

Please cite this report as:

Cedefop (2018). Mapping the landscape of online job vacancies. Background country report: Luxembourg, <http://www.cedefop.europa.eu/en/events-and-projects/projects/big-data-analysis-online-vacancies/publications>

© Cedefop, 2018

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.

Index

Introduction	5
1. Methodology	6
1.1. Search Paths	6
1.2. Data Sources	7
1.2.1. Public Data/Academic Research and Research/Surveys of Interest Groups	7
1.2.2. Expert Opinions.....	7
2. Labour Market Dynamics and Impact on the Online Job-portal Market.....	9
3. Context and Characteristics of the Online Job-portal Market.....	11
3.1. PES Online Job-portal(s).....	11
3.1.1. Legal/Regulatory Framework	11
3.1.2. Organisational Structure of the PES Online Job-portal(s).....	11
3.1.3. Focus of the PES Online Job-portal(s)	11
3.1.4. Outreach of the PES Online Job-portal(s)	12
3.1.5. Posting of PES Vacancies on EURES.....	12
3.2. Private Online Job-portals	13
3.2.1. Legal/Regulatory Framework	13
3.2.2. Dominant Online Job-Portals and Their Business Models	13
3.2.3. Focus of the Private Online Job-portals.....	14
3.2.4. Outreach of the Private Online Job-portals.....	14
3.3. Co-operation between Public and Private Online Job- portals.....	15
3.4. Role of other Recruitment and Job-search Channels	15
3.5. Expected Trends in the Online Job-portal Market.....	15
4. Use OJVs in Recruitment and Job Search	17
4.1. Use of OJVs in the Recruitment of Labour	17
4.2. Use of OJVs in Job-search.....	17
4.3. Expected Trends in the Use of OJVs in Recruitment and Job-search.....	18
5. Identifying Online Job-portals for Web-crawling.....	19
5.1. Documentation of the Job-portal Research Process.....	19
5.1.1. Identifying the Online Job-portals Through Google Search.....	19
5.1.2. Identifying the Online Job-portals Through Expert Interviews	19
5.1.3. As previously mentioned, two main portals have been identified by the interviewed experts as central for crawling activities: www.monster.lu and www.jobs.lu . Validating the Selection of Online Job-portals.....	19
5.2. Conditions for Drafting and Posting OJVs in the Selected Job-portals.....	19
5.2.1. Drafting and Posting an OJV on the PES Online Job-portal	19
5.2.2. Drafting and Posting an OJV on a Private Online Job-portal	20

5.3. Contacting the Online Job-portal Owners.....	21
6. Format and Content of OJVs.....	22
6.1. Legal/Regulatory Framework	22
6.2. Format of OJVs.....	22
6.3. Content of OJVs.....	22
6.4. Main Differences between the Public and Private Online Job-portals.....	23
6.5. Expected Trends in the Format and Content of OJVs	23
References	24
Statistics	24
Laws	24
Reports and Surveys	24
Expert Interviews	25

List of Abbreviations

ADEM	Agence pour le développement de l'emploi [Agency for Labour Development]
Cedefop	European Centre for the Development of Vocational Training
CRISP	Centro di ricerca interuniversitario per i servizi di pubblica utilità, University of Milano-Bicocca
ESF	European Social Fund
ESS	European Statistical System
EURES	European Employment Services
FEDIL	Federation of Luxembourgish Industry (Fédération des industriels luxembourgeois)
HR	Human Resources
ICEs	International Country Experts
ICT	Information and Communication Technology
LFS	Labour Force Survey
LISER	Luxembourg Institute of Socio-Economic Research
OJVs	Online Job Vacancies
PES	Public Employment Services
SME	Small and Middle-sized Companies
SNJ	National Youth Service (Service National de la jeunesse)
STATEC	National Statistical Office
UEL	Union of Luxembourgish Companies (Union des entreprises luxembourgeoises)

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 Luxembourg. It is based on desk research of available data sources in Luxembourg (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 Luxembourgish 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 Luxembourg 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 Luxembourg 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

Research was carried out on 19 May 2016 using Google. Four search terms were used (in French). The English translations, number of results, and number of portals appearing on the first page of Google are documented in Table 1. Google Scholar searches were also conducted in February 2018 in English in order to identify relevant academic articles.

Search 1	Search term “recherche emploi par internet Luxembourg”	Job research by internet Luxembourg
	Number of results per search term	1,550,000 11 different portals on the first page
Search 2	Search term “Emploi internet Luxembourg”	Job internet Luxembourg
	Number of results per search term	2,370,000 10 different portals on the first page
Search 3	Search term “Jobs internet Luxembourg”	Jobs internet Luxembourg
	Number of results per search term	2,110,000 11 different portals on the first page
Search 4	Search term “Recrutement internet Luxembourg”	Recruitment internet Luxembourg
	Number of results per search term	1,970,000 10 different portals on the first page

The following two job-portals are suggested:

- www.monster.lu;
- www.jobs.lu.

These portals were always mentioned on the first page of the four indicated Google-searches; after analysing the expert interviews, it seems they are the most important portals in the country.

We also used Google search terms to look for relevant research papers. We used the following key word-combinations: “recherche emploi internet Luxembourg” (Search for job internet Luxembourg), “CV sur internet Luxembourg” (CV on the web Luxembourg) and “OJV Luxembourg”. Only four documents resulted from search. This was followed by more in-depth search using the websites of the Luxembourg Institute of Socio-Economic Research (LISER) (formerly CEPS/INSTEAD) and the National Statistical Office (STATEC)¹ and Google Scholar.

¹ In French “Service central de la statistique et des études économiques” (STATEC).

1.2. Data Sources

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

We identified two publications from STATEC:

- Airoldi, M.-J. (2012): Le Comportement des Luxembourgeois face aux nouvelles technologies de l'information et de la communication depuis le début des années 60. In: Le Luxembourg 1960-2010, STATEC, Luxembourg.
- Frising, A. (2013): Regards sur les internautes au Luxembourg et dans l'UE 27, Regards No. 8, STATEC, Luxembourg.

We identified two publications from LISER (CEPS/INSTEAD):

- Genevois, A.-S. (2010): La Prospection des candidats dans le processus de recrutement: les canaux utilisés par les entreprises, Les Cahiers du CEPS/INSTEAD, Population & Emploi, No. 2010 (22).
- Genevois, A.-S. (2011): Spécificités des performances des canaux de recrutement, Les Cahiers du CEPS/INSTEAD, Population & Emploi, No. 2011 (01).

Via Google Scholar we identified several articles by Dr. Ursula Schinzel, an expert in Business Management and Administration.

- Schinzel, U (2015) : E-Recruitment in Luxembourg ?, Journal of Strategic and International Studies, Volume X Number 1 2015, pp. 37-44.
- Schinzel, U (2014) : Who Wants Digital HRM ? The Example of Luxembourg, Journal of Business and Economics, Volume 5, Np. 12, pp. 2374 – 2390.

We did not find much research or publications on this topic. There was no precise criteria for filtering the results, as the number of results was so low. This can be explained by the fact that there is not much research in general about Luxembourg, and the literature that does exist tends to be descriptive rather than analytical (Schinzel 2014). ,

1.2.2. Expert Opinions

It was relatively easy to contact and interview the relevant experts for this study. We selected six experts representing the following institutions: the Public Employment Service (ADEM)², STATEC, two federations of employers (Federation of Luxembourgish Industry (FEDIL)³ and Union of Luxembourgish Companies (UEL)⁴) and a private online job-portal.

The contacted experts were selected because they have the highest level of responsibility in their own institutions. The persons interviewed were able to answer all parts of the interview guidelines. There are no specific cases to point out for which stakeholders did not have specific knowledge for certain topics. There is no ESSnet Member in Luxembourg.

² In French "Agence pour le développement de l'emploi" (ADEM).

³ In French "Fédération des industriels luxembourgeois"(FEDIL).

⁴ In French "Union des entreprises luxembourgeoises" (UEL).

Table 1: Overview of the different sources used in the Landscaping Activity⁵

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	
Source 1: Public data/academic research	EU Labour Force Survey/ 2017	European Union	Yes			Very good
Source 3: Expert opinions	Expert Opinions 2017	Expert interviews 1-6	Yes	Yes	Yes	Good

Source: Clément (2017).

⁵ Source 2 (research/surveys of interest groups) did not provide information on the share of existing vacancies on online job-portals, use of OJVs per sector/occupation/qualification level/region or skills requirements of OJVs.

2. Labour Market Dynamics and Impact on the Online Job-portal Market

Some distinct aspects of the labour market set Luxembourg apart from other EU countries. One aspect that makes it unusual is the makeup of its working population. First, Luxembourg is a very small country, with a population of around 590,000 people. Within the population, there is a very large share of foreign nationals, approximately 280,000 people. In addition to its small population, 42.6% of the people employed in Luxembourg commute in and out of the country each day from neighboring countries (EURES).

The Luxembourg labour market is also impacted by a lagging financial crisis recovery. As of 2017, the unemployment level was still 1.7 percentage points higher than the pre-crisis level, and youth unemployment remains fairly high, particularly among low-skilled people (OECD 2017).

Despite a slow recovery, 71,970 new jobs were created between 2009 and 2017. However, few of these vacancies have been filled by the domestic market (EURES). This dichotomy is related to the sectors that flourish in Luxembourg. It is dominated by the banking and financial sector (Schinzel 2014) and has growing strengths in international technology and logistics companies. Skype, eBay and Amazon have their European headquarters in Luxembourg (Schinzel 2014). The strongest sectors for employment in recent years have been health and social services, professional, scientific and technical activities, administrative and support services, wholesale and retail trade, hotels and restaurants and construction (EURES). In 2015, the occupations with the largest share in employment in Luxembourg were “Business & Administration professionals” (ISCO 08/24) with 13.47%. Concerning the occupations expected to have the largest numbers of job-openings over the period from 2015 to 2025, once again “Business & Administration professionals” led with an estimated 26,563 job openings. (see also skills Panorama 2016).

Many of these growing sectors and occupations require high skill-levels and offer competitive pay, but as such, they often recruit internationally or in cross-border regions, where they have a better chance of finding individuals with matching skill sets. The expert from ADEM and EURES noted that international companies in Luxembourg are also looking to recruit highly skilled individuals outside the EU. This international recruitment trend impacts the online job-portal market in several ways. First of all, it de-emphasizes use of the PES among some of the more dynamic sectors, as the PES focuses on the domestic population. Secondly, it strengthens large, international recruitment portals that have more extensive reach more potential to attract qualified people.

In an effort to address the tendency of employers in Luxembourg to recruit externally, the PES has reconfigured its services:

- In March 2016, ADEM created the **JobBoard portal**⁶, which allows registered job-seekers and employers to access job-offers and upload CVs online. Previously, the PES did not have an online job-portal, which put unemployed and low-skilled individuals who rely on its services at a potential disadvantage when job searching.
- ADEM has significantly **improved its services** through many internal efforts. Improved services may be one factor contributing to the increased use of ADEM by employers. In

⁶ <http://www.adem.public.lu/fr/jobboard/index.html>.

2016, more than 33,500 jobs were reported to ADEM - 2,500 (23%) more jobs than in 2015. It is difficult to determine the extent to which this increase was caused by greater interest in ADEM or general economic recovery and reduced unemployment. It is possible that employers in Luxembourg have become more aware of the PES, however, it is also possible that skills mismatch and shortages are causing employers to use more channels to find employees. Job seekers also have high levels of use of ADEM, as demonstrated by the PES' ability to assign an average of 2.8 candidates per declared job. In some sectors, such as the construction, secretarial and transportation sectors, there were at least four candidates on average per vacancy. The high average number of candidates per job likely reflects the persistent high domestic unemployment in the wake of the financial crisis. On the other hand, for 25% of the vacancies, no suitable candidate could be found. However, this proportion decreased by 32% compared to 2015. The proportion of unsuccessful vacancies is highest in the ICT and finance sectors. This is to be expected, as ICT and finance are sectors that tend to recruit internationally, rather than within Luxembourg.

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

3.1. PES Online Job-portal(s)

3.1.1. Legal/Regulatory Framework

A specific legal and regulatory framework can be found in article L. 622-4 of the Labour Code. It states that all vacancies have to be declared to the public employment service, ADEM. Of course, the vacancies can be published in newspapers or on websites but registration with ADEM is mandatory.

3.1.2. Organisational Structure of the PES Online Job-portal(s)

As mentioned in Section 2, ADEM created the JobBoard Portal in 2016. ADEM also recently launched its **Digital Channel – eADEM Strategy**. The job-board is a first test of the acceptance of digital tools. For clients, the strategy aims at creating an easy and quick interaction and a complete view of their application. For ADEM, the goal is to increase the speed of matching a job-seeker to a vacancy and to improve data quality.

Moreover, ADEM has set up a contact center. In 2016, 184,700 calls were handled by the contact center, As of 2016, ADEM had 191 ADEM agents receive continuing training including participating in Employers' Days. More than 170 ADEM agents visited 13 Luxembourgish companies in this context.

Unlike many other PES, the ADEM portal is a closed database and is only available to job seekers that have registered with the PES. This means that only registered individuals may upload a CV to the database or search for jobs on the portal. In addition, ADEM anonymizes all OJVs, removing all contact information that would reveal the identity of the employer. ADEM plays a key intermediary role in the Luxembourg labour market. The PES notifies the employer when an individual has shown interest in an OJV, provided that individual has the qualifications required by the employer. Likewise, if an employer sees a CV of interest in the CV database, the employer must request the contact information from the PES. The interviewed experts from ADEM do not consider this closed system to be an obstacle to the development of the ADEM job-portal. As described in the previous sections, the private enterprises represented by the UEL reinforce the role of ADEM.

3.1.3. Focus of the PES Online Job-portal(s)

ADEM's JobBoard is an online service for job-seekers and employers, which tries to enhance the chances of a match between job-seekers and employers. Job-seekers can see the offers of the enterprises and put their own CVs on the portal. The JobBoard portal also creates a list of candidates and notifies users if a new job matching their qualifications and skills is published on the site.

As mentioned in section 3.1.2., it was not possible to gain access to the PES-portal. However, statistics provided by ADEM in 2016 offer some insights:

- There are approximately 20,000 job seekers who are registered with ADEM. Not all of these individuals are unemployed (Zabatta 2017). 1,050 employers have requested an account on the job-portal. Among these employers, 870 have already activated their account.
- The portal received more than 90,000 job applications between March 2016 and mid-2017. There are approximately 5,000 OJVs on the portal at any given time, and each OJV remains online for two months. Exceptions are made for companies that are constantly recruiting for the same positions, in which case they are permitted to keep the same OJV posted. According to the evaluation by the advisers to check whether an applicant profile corresponds to the job offer, 25,000 applications were suitable. Additionally, employers made 8,500 requests for contact information (Zabatta 2017).
- The proposed vacancies and CVs are always evaluated by ADEM before their publication on the portal to ensure that all necessary information has been completed and complies with regulations.

3.1.4. Outreach of the PES Online Job-portal(s)

Article L. 622-4 of the Labour Code (mandatory registration with ADEM) has not been closely followed by enterprises in the past. The representative of ADEM estimated that approximately 50% of all the vacancies in Luxembourg are declared to the PES, however the expert did not explain what percentage of jobs declared to the PES are then posted to the ADEM portal. We do know that as of 2014, approximately 11,000 applicants were successfully recruited annually through ADEM, which accounted for roughly 10% of new hires in Luxembourg. ADEM hopes to increase this number by 5,000 recruitments each year thanks to reforms (Accord entre le Gouvernement et l'UEL 2015). There are several reasons to explain this situation. First of all, ADEM did not have a good reputation in the past, although progress has recently been made thanks to new and better services. Secondly, there are many foreign companies in Luxembourg, and these enterprises do not know the Labour Code well. Thirdly, for some vacancies - particularly when they concern temporary work - it does not make sense to declare them.

As of February 2018, there were 16,642 resident job seekers who were registered with ADEM. An additional 2,732 non-residents were registered to the ADEM. During February 2018, 3,121 OJVs were posted to ADEM, which is 5.2% less than in February 2017. Of the positions posted to ADEM, 80% represent positions with unlimited contracts. The ten most requested occupations accounted for 30% of the OJVs. These occupations, organised according to the ROME classification system, were computer developer, accountant, financial markets office worker, cook, mason, housekeeper, secretary, gardener, building maintenance and construction. These occupations indicate that the types of jobs that are posted to ADEM tend to be low-skilled jobs and jobs experiencing extreme shortages, particularly in the ICT and Finance sector (ADEM 2018).

3.1.5. Posting of PES Vacancies on EURES

In 2016, 3,899 job-offers were published on the EURES portal, representing 19% of the total offers listed at ADEM. The format of the EURES portal will change in the near future. Standardised criteria for all European countries are currently being discussed to ensure computerised co-ordination of the portal. When employers contact ADEM to publish tenders, they must agree that these offers should appear on the EURES portal. New vacancies are published on the EURES portal every day.

The new European Regulation on EURES will open EURES to private employment services. The public employment services of the Member States will therefore become equal members alongside

private employment services. To this end, acceptance criteria for new EURES members must be developed.

According to the experts, the EURES portal is an added value for employers. Indeed, an employer who fails to successfully recruit in Luxembourg gains access to the entire European workforce through EURES. Moreover, there is a cross border EURES network in the Greater Region, which includes Luxembourg and the countries with which it shares a border. In this network, employers, trade unions and the public employment services of the whole Greater Region are connected with one another. This facilitates the circulation of the vacancies through the public services, and it is often more useful than the EURES portal itself. However, the expert from ADEM and EURES noted that it is more common for large employers in ICT and Finance, who are experiencing shortages, to make use of the EURES Portal, while small and medium size employers tend to focus more on domestic recruiting.

3.2. Private Online Job-portals

3.2.1. Legal/Regulatory Framework

There is no legal framework regulating private portals in Luxembourg. Each portal has its own policy to drive its content. There is neither coordination between the several portals in Luxembourg, nor is there specific legislation concerning OJVs, besides general anti-discrimination legislation. The Articles L. 241-1, L. 251-1 and L. 252-1 of the labour code forbid all types of discriminations based on gender, sexual orientation, family situation, religious convictions, age, ethnic and racial considerations and disabilities. A law passed on 3 June 2016 brought Luxembourg legislation in line with the European Commission directives on equal employment opportunities and equal treatment for men and women (Ministère du travail 2016). Since 2016, for reasons of security, Article L. 622-4 of the Labor Code obliges the employer to request an extract from the judicial record of the candidate.

3.2.2. Dominant Online Job-Portals and Their Business Models

The two following dominant private online job-portals were selected based on their prominent appearance in Google searches: www.monster.lu and www.jobs.lu.

Table 2: Top Portals

Name of the Portal	Website Address	Owner	Position in Google Ranking	Type of Portal
Monster	www.monster.lu	Monster	First page	Primary portal
Jobs.lu	www.jobs.lu	Stepstone Group	First page	Primary portal

Source: IWAK

Monster is one of the top ranked portals according to Google searches. It has over 40,000 CVs in its database. Due to the search structure used by Monster, it is not possible to see the exact number of OJVs available on the portal. Monster is an international brand, and monster.lu in particular includes postings for Luxembourg as well as the Greater Region, which is composed from Luxembourg, Lorraine (FR), Rhineland-Palatinate (DE), Saarland (DE) and the Walloon Region (BE). As a result, OJVs tend to appear in French, English and German. Monster earns revenue through several services including the publication of ads, access to the CV database and employer branding. The cost of ads is dependent on the number of regions in the Greater Region in which the ad

should be posted and the number of ads that are posted, as the site offers economies of scale. For example, one 60 day ad in Luxembourg costs EUR 350. The addition of another region raises the price to EUR 599, two regions makes it EUR 799 and all regions costs a total of EUR 999. If an employer posts two to five OJVs, the price for each OJV is reduced by EUR 20. If the employer posts six to ten OJVs, the price is reduced by EUR 50 per OJV. In order to access the CV database, employers must also pay a fee. The fee is based on the number of months for which one requests access and the number of CVs one would like to view. One month costs EUR 440 for 50 views and EUR 825 for 100 views. It increases to EUR 1,650 for six months and 250 views. Employer branding opportunities include services such as social media, however the costs for additional products are only available based on private consultation.

Jobs.lu advertises that in 2017, its OJVs generated over 450,000 applications and that each job received an average of 36 applications. Job ads are posted for 60 days, include a company logo and employers may opt for pre-selection of candidates. As of March 2018, the portal had 1,750 OJVs in Luxembourg, and over 600 in the neighboring regions. It includes OJVs in Luxembourgish, English, German and French. The categories with the most OJVs are Accountancy/Finance, Financial Services, IT/Programming, Legal, Manufacturing/Engineering and Banking.

In addition to posting job vacancies, the portal has a CV database, provides employer branding and promotes specific sectors and skills via private partnerships. For example, there is a partnership with websites specialising in legal jobs. There is also a partnership with a German language newspaper to help recruit German-speaking candidates. Jobs.lu also participates in a network of leading online job boards in over 130 countries to assist employers looking for international recruitment, which is important in Luxembourg. The portal does not provide prices for individual services, nor does it indicate which services generate most revenue.

3.2.3. Focus of the Private Online Job-portals

On these portals, job-seekers can upload their CVs and search for vacancies. The firms can look through the CVs and contact applicants. The firms can publish their vacancies on the portals as well. Private portals tend to cater to higher-skilled positions and fields experiencing shortages. As the cost of posting to private portals is considerable, the employers that post to private portals are likely to be larger, often representing international businesses with a strong presence in Luxembourg.

The portals provide tips on how to write a good CV. Advanced search or simple search for jobs is provided by keywords or by sectors of activities. There is no specific regulation impacting on the content of OJVs on the portals, nor do private portals use recognized classification codes..

3.2.4. Outreach of the Private Online Job-portals

There are no statistics, data or information in Luxembourg to analyse the outreach of the private job-portals and their share of vacancies published as OJVs.

3.3. Co-operation between Public and Private Online Job-portals

There is no information to analyse the share of OJVs published on private and public online job-portals in Luxembourg.

However, there is a programme that connects the ADEM-website with the website Anelo⁷, a project co-financed by the European Social Fund. Anelo is a trilingual portal in Luxembourgish, German and French, which has been developed over the past few years with the goal of informing young people about their educational and professional opportunities. Via this website, the national youth service (service national de la jeunesse, SNJ) provides detailed information on various jobs, guidance and support services and opportunities to enter the workforce. All services are offered free of charge. Young people can also find practical tips for finding their first job and tools to document their achievements and skills. Since 1 January 2012, the ESF has supported the development of the Anelo portal, with the aim of becoming a key reference site and referral service for young people. Moreover, Anelo provides a list of private job-portals. The job-seekers using Anelo do not have to be registered with ADEM, and it is not compulsory to be registered on the Anelo website. It is a vital service provided by the ADEM to help local job-seekers searching for a job.

3.4. Role of other Recruitment and Job-search Channels

Companies are looking for efficiency and speed via the Internet, and so posting jobs in printed newspapers tends to be less common. However, the well-known newspaper Luxemburger Wort continues to maintain a special column every Saturday devoted to job-offers. This is an opportunity for some companies to maintain their reputation and presence in the country.

According to a study conducted by the CEPS/INSTEAD research institute (Genevois 2011), three channels of recruitment are dominant. Personal relationships are effective in 35.3% of recruitments, advertisements in print media or on the Internet are effective in 22.8% of recruitments and finally, spontaneous applications are effective in 18.2% of recruitments.

These three channels account for more than 76% of recruitments, The ADEM public service accounts for about 7% of recruitments.

In the analysis of recruitment practices, informal channels are generally contrasted with formal channels. By definition, informal channels correspond to channels where the dissemination of information, and more specifically the distribution of the offers, is limited to a certain type of audience, such as professional or personal networks that may come from employees or recruiters. Formal channels, such as private portals, ADEM, temporary employment agencies, spontaneous applications and specialised intermediaries, are accessible and visible to all. According to this typology, formal channels are used in 59.1% of recruitment compared to informal channels in 40.9% of recruitment.

3.5. Expected Trends in the Online Job-portal Market

There is a need for closer collaboration between ADEM and the UEL. Following an agreement signed on 14 January 2015, the partners collaborated to implement measures to promote employment and reduce unemployment. Measures were also taken in other areas, such as attempting to

⁷ www.anelo.lu.

create a better balance between family life and professional life. Moreover, measures were implemented in the fields of taxation and administrative simplification, as well as in the field of social security, national promotion and education (Accord entre le Gouvernement et l'UEL 2015). Thanks to these measures, the increase in the recruitment of job-seekers amounted to 1,556 persons in 2015, 1,640 persons in 2016 and the target for 2017 was 1,804 persons. One year after this new collaboration and ADEM reform, unemployment declined by 4.6% over the previous year, and between 2014 and 2016, youth unemployment dropped by 14% (Zabatta 2017).

The UEL and the ADEM were interested in promoting this agreement, because, although Luxembourg created 140,000 new jobs during the last 15 years, the unemployment level doubled during that time. Clearly, this agreement shows that there has been strong cooperation and support between the private sector and ADEM to reinforce the public national employment service. Indeed, the major problem in Luxembourg is that when new jobs are created, they are almost immediately occupied by cross-border workers. The residents of the country have long suffered from a lack of skills and qualifications. This situation explains why it is difficult for residents to find jobs and why it is easier to fill a position with cross border workers. The agreement between the PES and UEL has been signed to cope with this situation by encouraging the hiring of residents registered with ADEM and supporting training initiatives. In 2016, 4,200 job-seekers in Luxembourg took part in training programs, which is a 55.6% increase over the previous year (Zabatta 2017).

Further development of new technologies to enable job search is expected, but there is no identifiable, comprehensive strategy. Jobs are increasingly available on social networks, like Facebook, LinkedIn and Twitter. This has the advantage of putting potential candidates and employers in direct contact with each other. Other benefits of social networks are that they provide access to a wide range of candidates, and they are free.

We are also seeing the development of new internet applications for online recruitment, such as the use of video as a means of contact between candidates and potential employers. The candidate video makes it possible for the employer to assess the personality of the candidate. The application is named Kliber⁸, and it is available in all three official languages.

⁸ www.kliberapp.com.

4. Use OJVs in Recruitment and Job Search

4.1. Use of OJVs in the Recruitment of Labour

Household Internet use has significantly risen between 2005 and 2016, from around 63% to around 98%. The same increase can be observed in the two other Benelux countries. At the same time, the level of individuals who have never used the Internet declined from about 28% to 3%. Once again, the same phenomenon can be observed across Benelux in general.

Nevertheless, it is important to point out that only 20% of individuals had used the Internet for “job-search or sending an application”, similar to the percentage in Belgium and in the Netherlands.

Individuals with medium formal education are most likely to use the internet for job-search or sending an application (24%). Overall, unemployed people use the internet the most for job search or sending an application (60%).

Another 2010 CEPS/INSTEAD study (Genevois 2010) analysed the use of different recruiting channels. The analysis covered 1,000 recruitments. Personal relationships are the most common recruiting channel. In 2007, companies reported using personal relationships between employees and/or the recruiter, alone or in combination with other channels, for 48% of successful recruitments. This channel is followed by spontaneous applications and then by advertisements in the press or on the Internet, which were used in 41% and 35% of recruitments, respectively. ADEM occupies the fourth position, with 21%. At the bottom of the list were specialised channels, such as professional bodies, schools and recruitment agencies, which are the channel used in less than 10% of successful recruitments. For more than half of the recruitments, only one channel was used, mainly personal relationships (42%), followed by spontaneous applications (21%) and advertisements (19%).

Based on the EU Skills Panorama and EUROSTAT ICT Survey of Households and Individuals in 2016, two major observations were made. The share of enterprises who advertise open job positions or ask for online job-applications on their website has significantly risen in Luxembourg, from 0% in 2009 to 35% in 2016. As in the EU-28 and in the Benelux countries, social media as a means to recruit employees is used by the majority of the large enterprises, namely by companies with more than 250 employees.

Part-time jobs are not generally available through online portals.

4.2. Use of OJVs in Job-search

The EU Labour Force Survey (LFS) gives us some indications about the behavior of people seeking employment in 2016. It notes that 68.8% of job seekers contacted ADEM, while 31% contacted private placement services, 67.4% directly contacted a potential employer, 65.8% consulted personal networks and unions and 48% answered an advertisement. Unfortunately the category of answering an advertisement does not distinguish between advertisements that are posted in print versus online. Likewise, contact with the ADEM does not specify whether an individual made use of the new ADEM portal.

In February 2018, the population of individuals that were registered as job seekers on ADEM had the following characteristics. Slightly more than half of the job seekers were men. The job seekers

tended to be older, with 43% over the age of 45, 36% between 30 and 44 years of age and 20% below 30 years of age. Most of the job seekers had a lower level of education, with 53% holding only a lower secondary degree (having achieved a maximum of the 11th year of school), while only 18% had completed post-secondary education. Around 45% of individuals had been registered with the PES for over a year and 32% had been unemployed for over a year (ADEM 2018). This indicates that the PES likely focuses on lower skilled workers. The tendency towards serving an older population and a population that has been out of work for longer is partially reflective of the improving labour market and the dropping unemployment rate, which enables higher skilled and younger individuals to find positions more quickly. The PES can therefore focus its attention on more challenging groups, such as long-term unemployed.

According to the private portal, monster.lu, approximately 11% of individuals in their CV database have only completed High School, 36% have completed Professional Education, 14% have a Bachelor's Degree, 12% have a Master's Degree and 27% have a Doctorate. In addition, the portal lists statistics regarding the career/experience level of registered individuals. Students account for 8% of the CVs, early career individuals make up 22%, Experienced individuals constitute 50%, 15% of people are in Senior positions and 5% are in management or Executive positions. This information suggests that private portals tend to attract early and mid-career individuals, but fewer students and executive-level individuals. In terms of education level, monster.lu indicates that the most represented groups are those looking for skilled labour, but it is interesting that the two largest groups are those with a VET qualification or doctorates.

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

We did not encounter any comprehensive insights on the expected trends in online recruitment and job-search during the interviews.

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

Job Portals were identified based on the Google Searches mentioned in Section 1.1. We considered all portals that appeared in multiple searches. Other portals that appeared in the Google Searches were Indeed, adecco.lu, moovijob.com and optioncarriere.lu.

5.1.2. Identifying the Online Job-portals Through Expert Interviews

As previously mentioned, two main portals have been identified by the interviewed experts as central for crawling activities: www.monster.lu and www.jobs.lu.

5.1.3. Identifying the Online Job-portals

Unfortunately, there is no ESSnet Member in Luxembourg. We conducted an interview with one person from STATEC, but this person was not able to validate the selected portals.

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

5.2.1. Drafting and Posting an OJV on the PES Online Job-portal

Although we were not able to gain access to the PES Portal, the expert from the PES provided us with a copy of the form for declaring a vacant position.

The following information is mandatory:

- Employer name
- Employer identification number
- Contact information for the individual responsible for recruitment (Name, Position, Address, City, Country, Phone, Email)
- Job Title
- Number of positions to be filled (i.e. one OJV can represent multiple open positions)
- Employment Contract (permanent, fixed-term, independent, temporary, seasonal, or space to list the number of weeks, months, or years)
- Actual workplace (free space to list the location in which the work will take place)
- Working hours (full-time, part-time, or free space to list the number of hours per week)
- Work arrangement (normal, shift, weekend, night, irregular, interruptions)
- Mandatory languages with level (Luxembourgish, French, German, English)

The following optional information can be included:

- Company Website
- Whether the contact person is a recruitment representative (yes or no)

- URL of the job description
- Occupation: Rome classification (code and designation)
- Position Description (free text)
- Possible constraints related to the position (i.e. carrying heavy loads, mobility limitations in the workplace, criminal record required)
- Work experience required
- Expected date of employment
- Whether the position is a replacement for an employee on parental leave (yes or no)
- Daily working hours (morning, evening, afternoon, flexible)
- Salary according to collective agreement (yes or no)
- Monthly salary
- Hourly gross wage
- Additional benefits (car, meal vouchers, etc.)
- Required qualifications and trainings (diplomas, trainings, certifications, other skills)
- Driver's license
- Personal vehicle required for the job (yes or no)
- Information about how candidates can share a CV (email, post, company website)
- Whether or not the job should be posted to EURES (yes or no)

5.2.2. Drafting and Posting an OJV on a Private Online Job-portal

Monster.lu: To post a CV, the job seeker has to register on the website. Help is provided for writing CVs and motivational letters. The template requires the job seeker's name, surname, postal address and qualification level. Then, before creating a CV, the candidate must mention the name of his/her current or last employer, the type of job sought and whether the person holds a work permit in Luxembourg.

To access the template for posting a job ad, payment is required. There is a help number for the employers to call, if they have questions.

Without paying, it is impossible to access a template to create a job-advertisement. Nevertheless, based on observations of OJVs on the portal, we can draw conclusions about some of the mandatory or at least preferred elements. In addition to the job title, most of the OJVs include the name of the company, the location of the job, the type of contract (full-time, part-time, interim, fixed-term, etc.), the date on which the OJV was published, the area of activity (not based on any particular classification code) and the level of the position. Additional elements include detailed contact information and years of experience required. The body of the OJVs on Monster differ depending on whether employers have decided to include extensive branding. Elements such as job description, required skills and description of the employer vary significantly in length and level of detail, as these elements are written in free text.

Jobs.lu: One must register on the website to post a CV. When accessing the template, one can download one's own CV (as word document, for instance) or create a new electronic CV with name, surname, postal address, qualification level, experience and personal competences.

Posting a job ad is free of charge, there is no space limit and all data formats are permitted. To access a template, one has to register on the portal. No free template is available on the website without a registration.

5.3. Contacting the Online Job-portal Owners

No specific indications can be provided on planned scraping activities or other peculiarities to be taken into account for web crawling in Luxembourg. The job-portal owners were not yet contacted.

6. Format and Content of OJVs

6.1. Legal/Regulatory Framework

There are no legal frameworks, guidelines or standards regulating the design of an OJV in Luxembourg other than the anti-discrimination legislation discussed in Section 3.2.1.

6.2. Format of OJVs

There are no specific formal or informal regulations to drive the content of the portals.

In Luxembourg, there is no regulation concerning the use of languages in OJVs. However, generally four languages are used: French, German, Luxembourgish and English. Most of the portals publish CVs and offers for the country and the Greater Region, which is composed of Luxembourg (LU), Lorraine (FR), Rhineland-Palatinate (DE), Saarland (DE) and the Walloon Region (BE).

This means that the offers in the mentioned portals are not limited to Luxembourg. This is also the reason why available information in the portals is often provided in several languages, especially in French, German and Luxembourgish. This is a unique feature of the labour market in Luxembourg, a very small country with three official languages, which is surrounded by other countries and which has a large number of multinational corporations, many of whom conduct business in English.

As mentioned in Section 2, the use of video as a means of contact between candidates and potential employers is becoming more popular.

6.3. Content of OJVs

As explained above, there is no specific regulation in the framework of OJVs, except the non-discrimination regulations mentioned in Section 3.2.1.

There is no specific national culture or tradition impacting on the content or format of OJVs, because Luxembourg has been the base of many foreign enterprises from all over the world for a long time. The long tradition of social dialogue has been affected by foreign influences. The Luxembourgish market is regionalised by the cross border workers and internationalised by the foreign firms.

The references to competencies are different from one portal to another. Each portal has its own policy. According to the interviews, in terms of personality traits of job-seekers, it is often desirable to be able to work in a team or be autonomous. In terms of the knowledge of foreign languages, English is desirable and increasingly important in Luxembourg.

Based on the interviews, the existence of hidden code words in OJVs does not seem to be a significant feature of the OJV landscape. The framing and formulation of OJVs are different from one portal to another. To answer this question, it would be necessary to conduct a "case by case" study. The only relevant aspect we are aware of is, once again, the non-discrimination policy. That is a common point for all recruitments made by the ADEM and private firms or portals.

Based on the observation of the two most important portals, several personal details are required of the applicant, such as name, surname, postal address, qualification level, the name of the current or the previous employer, the type of job the candidate wants to find and whether the person has a license to work in Luxembourg.

Some elements are requested of the enterprises, such as occupation, location of the job, the type of contract, the wage, the level of experience and the level of education. These elements are often requested, but they are not compulsory due to the lack of a legal framework.

6.4. Main Differences between the Public and Private Online Job-portals

Without access to the PES portal, it is impossible to give specific information about differences between the OJVs posted on public and private online job-portals. The major difference between the ADEM portal and the private portals is that on the ADEM-portal the candidates are anonymous and registered free of charge. This is not the case on private portals, where everything is transparent and fee-based.

6.5. Expected Trends in the Format and Content of OJVs

According to the interviewed experts, in the future, further development of new technologies for job search is expected, such as videos. The search for jobs in printed newspapers will become less common, as the Internet continues to overtake print media. Social media will continue to grow in importance.

References

Statistics

EU Labour Force Survey (LFS): http://ec.europa.eu/eurostat/statistics-explained/index.php/EU_labour_force_survey_-_methodology, (last accessed on 22 December 2017).

Skills Panorama Luxembourg (2016): <http://skillspanorama.cedefop.europa.eu/bg/countries/luxembourg> (last accessed 16 January 2018).

Laws

Accord entre le Gouvernement et l'UEL à l'issue des discussions du 14 janvier 2015, https://www.gouvernement.lu/4352410/Accord-entre-le-gouvernement-et-l_UEL.pdf (last accessed on 22 December 2017).

Labour Code of the Grand-Duchy of Luxembourg.

Regulation (EU) 2016/589 of the European Parliament and of the Council of 13 April 2016 on a European Network of Employment Services (EURES), Workers' Access to Mobility Services and the Further Integration of Labour Markets, and Amending Regulations (EU) No 492/2011 and (EU) No 1296/2013.

Reports and Surveys

ADEM (2018): Chiffres-clés Février 2018, <http://www.adem.public.lu/fr/publications/adem/2018/Chiffres-cles-fev-2018/Chiffres-Cles-ADEM-Fevrier-2018.pdf> (last accessed 22 March 2018).

ADEM Annual Press Conference (27 April 2017): Portail de l'emploi, http://www.adem.public.lu/fr/actualites/adem/2017/04/CP_ADEM/index.html (last accessed 16 January 2018).

Airoldi, Marie-Jo (2012): Le Comportement des Luxembourgeois face aux nouvelles technologies de l'information et de la communication depuis le début des années 60. In: Le Luxembourg 1960-2010, STATEC, Luxembourg, <http://www.statistiques.public.lu/catalogue-publications/luxembourg/2012/PDF-21-12.pdf> (last accessed on 22 December 2017).

Federation of Luxembourgish Industry (FEDIL) (2015): Les Qualifications de demain dans l'industrie, FEDIL: Luxembourg, https://www.fedil.lu/wp-content/uploads/2017/03/07141_FEDIL_HelloFuture_Brochure_Qualifications_Webppp.pdf (last accessed on 22 December 2017).

Frising, Armande (2013): Regards sur les internautes au Luxembourg et dans l'UE 27, Regards No. 8, STATEC, Luxembourg, <http://www.statistiques.public.lu/catalogue-publications/regards/2013/PDF-08-2013.pdf> (last accessed on 22 December 2017).

Genevois, Anne-Sophie (2011): Spécificités des performances des canaux de recrutement, Les Cahiers du CEPS/INSTEAD, Population & Emploi, No. 2011 (01),

<http://www.statistiques.public.lu/catalogue-publications/cahiers-CEPS/2011/01-recrutement.pdf>
(last accessed on 22 December 2017).

Genevois, Anne-Sophie (2010): La Prospection des candidats dans le processus de recrutement: les canaux utilisés par les entreprises, Les Cahiers du CEPS/INSTEAD, Population & Emploi, No. 2010 (22), <http://www.statistiques.public.lu/catalogue-publications/cahiers-CEPS/2010/22-prospection-candidat.pdf> (last accessed on 22 December 2017).

Ministère du travail, de l'emploi et de l'économie sociale et solidaire, rapport mars 2016, <http://www.adem.public.lu/fr/publications/adem/2017/rapport-activite-complet/index.html> (last accessed 16 January 2018).

OECD (2017): How Does Luxembourg compare? Employment Outlook 2017, <https://www.oecd.org/luxembourg/Employment-Outlook-Luxembourg-EN.pdf> (last accessed 22 March 2018).

Raizer, Thierry (2015): Avec Kliber, le CV passe en mode video, Paperjam News, 9 July 2015, <http://paperjam.lu/news/avec-kliber-le-cv-passe-en-mode-video> (last accessed on 22 December 2017).

Schinzel, U (2014) : Who Wants Digital HRM ? The Example of Luxembourg, Journal of Business and Economics, Volume 5, Np. 12, pp. 2374 – 2390.

Schinzel, U (2015) : E-Recruitment in Luxembourg ?, Journal of Strategic and International Studies, Volume X Number 1 2015, pp. 37-44. Zabatta, Jeremy (2017): Chômage en baisse: Les efforts de l'ADEM payent, Le Quotidien, 28 April 2017, <http://www.lequotidien.lu/economie/chomage-en-baisse-les-efforts-de-ladem-payent/> .

Expert Interviews

Name of organisation	Type of organisation	Expert's position	Interview date
Federation of Luxembourgish Industry (FEDIL), Business Luxembourg & FEDIL Employment Services	Organisation of industrial employers	General Secretary	15 May 2017
Union of Luxembourgish Companies (UEL)	Union employers	General Secretary	15 May 2017
Agence pour le développement de l'emploi (ADEM)	Public Employment Service (general)	Chief of Service	15 May 2017
Agence pour le développement de l'emploi (ADEM)	Public Employment Service and EURES	EURES adviser	28 September 2017
Service central de la statistique et des études économiques (STATEC)	National Statistical Office	Advisor	16 May 2017
ADEM (Agence pour le développement de l'emploi)	Public Employment Service (EURES service)	Chief of Service	19 May 2017
Private online job-portal	Labour market intermediary	CEO	19 May 2017