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Rainer Eppel[†]
rainer.eppel@wifo.ac.at

Helmut Mahringer[‡]
helmut.mahringer@wifo.ac.at

Andrea Weber[§]
a.weber@uni-mannheim.de

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Abstract

We combine information from a job-seeker survey and two sources of administrative data to shed light on the job search behaviour and job search success of the unemployed. Our particular focus is on the way the Public Employment Service (PES) shapes job search effort and outcomes in terms of the exit rate to work and of post-unemployment job match quality. Job-seekers attach a high value to internet job search, but social networks are by far the most promising job search channel. The PES has a central role in the job search process of the unemployed, particularly for job-seekers with low education and long unemployment record. We find a positive link between the amount of PES counselling and job search effort. Our results indicate that the PES is effective in facilitating exit from unemployment to paid work – directly, through placing of jobs and increasing the efficiency of job search, as well as indirectly, by stimulating job search effort. The jobs placed by this intermediary do not significantly differ in job tenure from those generated by other channels, but they are rather poorly paid. After adjustment for differences in covariates, monthly starting wages are significantly lower for people placed via the PES compared with those successful with the internet and private employment agencies.

Key Words: Job search, Public employment service, Job match quality
JEL-Codes: J64, J68, J20

[†]Corresponding author. Austrian Institute of Economic Research (WIFO), Arsenal Object 20, A-1030 Vienna, Austria. Tel.: +43-1-7982601-217. Kiel Institute for the World Economy (IfW), Hindenburgufer 66, D-24105 Kiel, Germany.

[‡]Austrian Institute of Economic Research (WIFO), Arsenal Object 20, A-1030 Vienna, Austria.

[§]Department of Economics, University Mannheim, L 7, 3-5, D-68131 Mannheim. Austrian Institute of Economic Research (WIFO), Arsenal Object 20, A-1030 Vienna, Austria.

1 Introduction

Unemployed individuals have to make several choices when searching for a job. They need to decide how much effort to invest, which job search methods to use and jobs of which quality to accept. By making these decisions, they influence their chances of finding a job as well as the quality of job offers received. A successful job match is hampered by the fact that job-seekers have imperfect information about available jobs and associated wages. At the same time, employers face costs and uncertainty when filling vacancies, because they have limited knowledge of an applicant's productivity. Against the backdrop of these frictions, a number of labour market intermediaries (LMI) serve to increase transparency in the labour market and to facilitate the matching of workers and jobs (cf. Blau – Robins 1990, Walwei 1996).

In industrialised countries, the Public Employment Service (PES) plays a key role. This formal intermediary aims at facilitating labour exchange through its own placement of job-seekers to job vacancies. Alongside this job-broking activity, it provides comprehensive support in the form of information, counselling and training designed to increase the efficiency of the job-seekers' own search activities. This supply-side intervention is complemented by programmes for promoting labour demand.

Whereas previously public institutions had a monopoly, there is meanwhile a growing market of private employment agencies that are also authorised to provide placement services. They help unemployed individuals to find a job and employers to fill vacancies. Beyond this traditional role, they increasingly hire and train unemployed persons before placing them in regular jobs. Temporary work agencies, which also facilitate job placement, offer a probationary period that serves employers as a screening device (cf. De Koning 2007, Autor 2009).

Apart from using an employment service, unemployed individuals may look for a job through actively placing or responding to job advertisements in newspapers and the internet. Moreover, they can find out about employment opportunities through job boards at schools or in private companies. As an alternative to these formal job search channels, job-seekers may resort to their friends, family and other contacts to find out about potential jobs. With or without references, they may also search for a job by approaching employers directly.

A growing number of empirical studies assess the determinants of the choice of different job search strategies, such as the utilisation of social networks[1] or the internet[2], and their effects on job search success. Typically, they start from the assumption that job search methods differ in time and monetary cost and vary in productivity across individuals (cf. Addison – Portugal 2002). A common finding is that the search strategy is not random but depends on a number of socio-demographic characteristics[3] and other parameters, such as the duration of unemployment, the local labour market conditions (see Böheim – Taylor 2002 for the UK), and the business cycle (see Osberg 1993 for Canada). The choice of a particular search channel and the overall search effort are identified as important predictors of job-finding success in the empirical literature.[4]

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[1] See, e.g., Marmaros – Sacerdote 2002 and Datcher Loury 2006 for the US, Caliendo – Schmidl – Uhlendorf 2011, Weiss – Klein 2011, Dustmann – Glitz – Schönberg 2011 and Krug – Rebien 2012 for Germany; Pellizzari 2010 for 15 EU-countries; Cappelari – Tatsiramos 2010 for the UK.

[2] See, e.g., Kuhn – Skuterod 2004, Kuhn – Mansour 2012, Choi 2011 and Beard et al. 2012 for the US; Bagues – Labini 2009 for Italy.

[3] See, e.g., Holzer 1988 for Canada, Frijters – Shields – Price 2005 for the UK, Thomsen – Wittich 2012 for Germany, and Bachmann – Baumgarten 2013 for the EU.

[4] For research results indicating a positive relationship between job search intensity and the exit rate from unemployment see, e.g., Wielgosz – Carpenter 1987 and Holzer 1987, 1988 for the US; Gregg – Wadsworth 1996 for the UK; Koen et al. 2013 for the Netherlands.

Compared with the large number of studies evaluating active labour market policy programmes, micro-econometric studies on job search methods are relatively rare. The main reason is the lack of available data. In this paper, we combine information from an extensive job-seeker survey with two sources of administrative data to obtain insight into the job search behaviour and job search success of a representative group of unemployed job-seekers in Austria. We present evidence on individuals' choice of job search channels and the determinants of their overall job search effort. Moreover, we identify drivers of a successful job take-up, and we compare post-unemployment job match quality in terms of starting wages and job duration across job finding methods.

Our particular focus is on the role of the PES in shaping job search behaviour and job search success. We examine the quantitative importance of this institution as a job search route in comparison with other channels available, namely friends or relatives, newspaper advertisements, internet advertisements, job postings with firms or educational institutions, private employment agencies, and direct applications addressed to firms. Additionally, we explore the influence of the amount of PES counselling and the pressure that job-seekers receive from their caseworkers to take up a job on their job search effort and exit rate from unemployment to work. Lastly, we compare mean wages and job duration between previously unemployed job-seekers who found their job via the PES and those who were successful with other job search channels. In this way, we shed light on the quality of jobs placed by this public labour market institution.

We find that the PES, friends, newspaper and internet advertisements are the job search channels most frequently used. Job-seekers attach a high value to internet job search, but social networks are by far the most promising search engine: about one-third of all jobs are found through this channel. Our empirical findings underscore the central importance of the PES in the job search process of the unemployed, particularly for job-seekers with low education and long unemployment record. We find a positive link between the amount of PES counselling and job search effort as measured by the number of job search methods used. Our results indicate that the PES is effective in facilitating exit from unemployment to paid work – directly through placing jobs and increasing the overall efficiency of job search, and indirectly by stimulating job search effort. The jobs placed do not differ significantly from those generated by other job finding channels in terms of job tenure, but are rather poorly paid. After conditioning on observable characteristics, mean wages remain significantly lower compared with jobs found through the internet and private employment agencies.

2 The Austrian Public Employment Service

The Austrian PES has the key task of placing unemployed workers in vacant jobs and, thus, to match labour supply and demand. Alongside job placement, it offers a large variety of services to job-seekers that include information, counselling and career guidance, assistance and support with job search, as well as further education and training. These services are tailored to the needs of individual client segments, by way of a three-zone structure: (1) Clients primarily seeking general information about job opportunities and PES services are assigned to the "info zone". They are provided with vocational information, information on training options and the job market as a whole through self-service internet facilities or written documents and may retrieve all registered job vacancies. (2) Job-seekers ready for taking up work who are sufficiently qualified and have a clear idea of what they are searching for are offered job broking services and processing of benefit claims in the "service zone". In an initial meeting, a caseworker clarifies

and coordinates individual requirements and labour market conditions. If clients are deemed to need more counselling and guidance, they are referred to (3) the "counselling zone". There, they are provided with intensive counselling and individualised action plans and are offered access to the entire range of labour market programmes and subsidies. This clear classification of clients according to individual problems and needs largely explains why the contact intensity with the PES varies substantially across unemployed individuals (see Federal Ministry of Labour, Social Affairs and Consumer Protection 2012, 2014A, 2014B).

In contrast to other countries, the Austrian PES is in charge of both job placement and the provision of unemployment benefits. Given its different functions, the agency shapes individual job search behaviour and successful job search through several channels. First, it aligns and matches labour supply and demand by directly placing job-seekers to job vacancies. Second, it helps job-seekers with their own search activities. Empirical studies have shown that search intensity increases with the expected benefit of search.[5] Therefore, if counselling and support lead to higher job search efficiency, this could also raise job search efforts. Third, PES intermediation is likely to stimulate job search effort through monitoring compliance with job search requirements.

In Austria, there are two types of cash benefit accessible to the unemployed: first, eligible persons receive unemployment insurance benefits (*Arbeitslosengeld*), for a period of 20-52 weeks (depending on age and previous insurance record). Upon exhaustion, they can apply for unemployment assistance (*Notstandshilfe*), which is paid for an unlimited period of time, but subject to means-testing. To qualify for either benefit, applicants must meet the eligibility criteria.[6] They need to be able to work and willing to accept a job considered adequate. Caseworkers monitor the availability and search effort of unemployed workers by requiring participation in regular meetings and reports on job search activities. In addition, they can impose sanctions in the case of non-compliance with search requirements. If an acceptable job offer or training programme is rejected, unemployment benefits can be suspended for at least six weeks (eight weeks in repeated cases), and eligibility is reduced by the respective time period (see Federal Ministry of Labour, Social Affairs and Consumer Protection 2012, 2014A, 2014B).[7]

To protect unemployment benefit recipients from large wage losses, the Austrian system does not force them to accept job offers with a wage below a certain level relative to their pre-unemployment wage. However, unemployment assistance recipients (and long-term unemployed) are expected to accept low-wage jobs, as long as wages are conform with the collective bargaining agreements. Ensuring sustainable insertion into employment is among the objectives of Austrian labour market policy. Nevertheless, the emphasis of active and passive labour market policy is on early placement of job-seekers into jobs (see Federal Ministry of Labour, Social Affairs and Consumer Protection 2012, 2014A, 2014B).

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[5]See, e.g., Holzer 1988 for the US, Weber – Mahringer 2008 for Austria, Thomsen – Wittich 2010 and Caliendo – Cobb-Clark – Uhlendorff 2010 for Germany, Bachmann – Baumgarten 2013 for the EU, Barron – Mellow 1979 for the US, Krueger – Mueller 2012 for 14 countries, Koen et al. 2013 for the Netherlands.

[6]In order to qualify for unemployment insurance benefit, first-time applicants must have spent at least 52 weeks within the last 24 months in insurance-covered employment, re-applicants 28 weeks within the last 12 months. Young persons under 25 years of age need a minimum of 26 weeks of work within the 12 months for being eligible. The basic amount of the insurance benefit is 55% of previous net earnings. With family supplements, it can rise up to 80%. The basic level of unemployment assistance is 92%, in some cases 95% of the previous insurance benefit in the first six months (see Federal Ministry of Labour, Social Affairs and Consumer Protection 2012, 2014A, 2014B).

[7]Following Boeri – Van Ours (2008), a benefit sanction may have an ex-ante and an ex-post effect on unemployment duration. It is possible that unemployed workers intensify search in order to avoid being sanctioned. Once they are penalised, they have an incentive to search harder, because benefit reduction lowers the incentive for remaining unemployed and increases the expected payoff from accepting a job.

3   Data and sample

Our empirical analysis is based on a survey of unemployed job-seekers. To generate our sample, we identified all individuals of working age (men aged 15 to 64 years, women aged 15 to 59 years) who entered unemployment between November 2009 and May 2010 and remained so for more than 30 days. In the case of multiple spells per individual, we selected the last one. From this initial population, we drew a random sample, stratified by education, industry, and month of entry into unemployment.[8] In order to deal with survey drop-outs, we added four reserve samples. In the end, the survey generated 2,500 successful interviews.

Since individuals temporarily laid off and expecting to return to their previous job deviate significantly in their search behaviour from the rest of the unemployed, we exclude this type of job-seeker from our analysis. To be precise, we eliminate from the total of 2,500 surveyed job-seekers 642 men and women (25.7%) who were promised to be re-hired after entering unemployment. Additionally, we exclude 172 individuals (6.9%) who were re-hired by their previous employer after an unemployment spell without such promise recorded in the Austrian social security data. Discarding another 26 observations (1.0%) with inconsistencies in the data, we end up with a final estimation sample of 1,660 individuals.

The interviews were conducted in the end of 2010 via telephone, mainly between November 2010 and January 2011. Thus, the time lag between unemployment entry and interview varied between half a year and one year. The respondents gave details of their socio-economic background such as language proficiency, access to digital media, size of social networks, and attitude towards work. They were asked whether they face specific problems that they perceive as obstacles to work such as physical, mental or financial problems, mobility constraints (no car ownership, limited public transport connection), language problems, child care and other family obligations or constraints. Moreover, they provided information on their previous labour market experience and current employment situation. Most importantly, the sampled individuals provided information on job search activities and the utilisation of placement and counselling services offered by the PES.

We merge the data from the job-seekers survey with two administrative registers: the Austrian Unemployment Register (AUR) and the Austrian Social Security Database (ASSD). These data sources allow us to perform plausibility checks on answers to survey questions and provide valuable additional information on labour market outcomes.

There are two key features of the AUR: First, it contains a large number of relevant socioeconomic characteristics of the unemployed, including the place of residence. Second, it provides information on their participation in labour market programmes, transfer payments received and contact to the PES. We use the data to calculate the exact number of job-seekers' contacts with the PES as well as the number of placement offers they receive during the time between unemployment entry and exit to work or (in the case of no job take-up) the end of our observation period.

The Austrian Social Security Database (ASSD), our third data source, is a matched firm-worker register which records detailed labour market histories and earnings of all private-sector workers on a daily basis from 1972 onwards. We use these data to control for individuals'

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[8]The aim of this stratification was to obtain a higher representation of the small group of highly-qualified individuals and of industries with relatively few unemployment entries as well as to compensate for the higher frequency of inflows in December and January. Through weighting we ensure in the subsequent empirical analysis that the structure of interviewed job-seekers is a representative random sample of men and women of working age entering unemployment between November 2009 and May 2010.

previous employment and non-employment experiences in the regression analysis and to derive exact measures of the outcome variables. All measures of job match quality are constructed on the basis of individual information obtained from the ASSD because of the high accuracy and reliability.

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Table 1: Summary statistics

Variable	Data source	Mean	Sd
Independent variables			
Woman	AUR	0.451	0.498
Age (in years)	AUR	37.345	11.680
At most compulsory school	AUR	0.460	0.499
Intermediate vocational school	AUR	0.058	0.234
Apprenticeship	AUR	0.330	0.470
Higher academic or vocational school	AUR	0.100	0.300
Academic education	AUR	0.047	0.211
Disabled	AUR	0.130	0.336
German as mother tongue	Survey	0.727	0.446
German learnt from early age	Survey	0.081	0.273
German neither mother tongue nor learnt from early age	Survey	0.192	0.394
Large social network	Survey	0.811	0.391
Lack of access to PC	Survey	0.075	0.263
Child care problems perceived as search barrier	Survey	0.073	0.260
Other problems in the family perceived as search barrier	Survey	0.059	0.236
Physical problems perceived as search barrier	Survey	0.254	0.435
Psychological problems perceived as search barrier	Survey	0.147	0.354
Mobility constraints perceived as search barrier	Survey	0.158	0.365
Financial problems perceived as search barrier	Survey	0.199	0.400
Lack of language skills perceived as search barrier	Survey	0.059	0.235
Unemployment spell duration (time from unemployment entry to exit)	ASSD	190.541	147.530
Days unemployed in last 2 years	ASSD	193.515	219.079
Days unemployed in last 5 years	ASSD	395.010	440.634
Days employed in last 2 years	ASSD	365.523	273.283
Days employed in last 5 years	ASSD	914.393	609.647
Job search outcomes			
Job take-up according to survey (already realised or forthcoming)	ASSD	0.555	0.497
Job take-up according to both survey and ASSD	ASSD	0.498	0.500
Duration from unemployment entry to job take-up (in days)*	ASSD	163.000	115.000
Monthly starting wage (in €)*	ASSD	1,742.000	735.800
Job duration (in days)*	ASSD	254.000	211.100
Employment share in entire observation period*	ASSD	0.596	0.253
Observations			1,660

Sources: ASSD, AUR, and survey data. Notes: AUR: Austrian Unemployment Register. ASSD: Austrian Social Security Database. Entire observation period: From unemployment entry to the end of 2011. *Restricted sample of successful job-seekers with a job take-up (49.8%).

Summary statistics of all variables used in the regression analysis are provided in Table 10 in the Appendix. The most relevant ones are presented in Table 1. As for the independent variables, we distinguish between five groups: socio-demographic characteristics, variables related to individuals' labour market histories, attributes of the last job, characteristics of the job-seekers' region of residence (Federal State and regional labour market features), and regional labour market conditions. The tables present the data source for each variable.

Persons with low or no formal qualification account for nearly half of our total sample: 46.0% have finished compulsory schooling or less; one-third (33.0%) has completed an apprenticeship, and only 4.7% are academics. These figures reflect the education bias typical for the structure of unemployment in Austria: low-qualified individuals are the prime group at risk of experiencing unemployment. With regard to previous labour market history, our sample of unemployed is quite

heterogeneous. We observe a wide variation in both incidence and duration of unemployment in the preceding years. Two-thirds of the job-seekers (65.8%) experienced at least one day of unemployment in the last two years before the observed entry. Among individuals with unemployment experience, one-fifth (20.0%) were unemployed for no longer than three months, 18.0% accumulated between three and six months, 27.6% between six and 12 months and 34.5% more than 12 months. 80.7% of the individuals in our sample were employed for at least one day in the last two years. On average, 194 days were spent in unemployment and 366 days in employment.

The job search outcome measures are also presented in Table 1. Our first indicator of search success is the exit from unemployment to work. We investigate the influence of job search effort and PES counselling on the probability of taking up a job within the time between unemployment entry and the interview. According to the survey, 55.5% of our population of job-seekers were successful in the sense that they had already taken up a job or were about to do so. This percentage share is substantially lower than it would be if unemployment entrants with a recruitment promise were not excluded from our sample. At the time of the interview, some of the successful job-seekers had already lost their job. 42.5% were currently employed and 57.5% jobless.

These findings from the survey are not perfectly consistent with the information obtained from the administrative registers. For 10.3% of the respondents who reported a job take-up, employment is not confirmed by the ASSD. The likely reason for this discrepancy is that while job-seekers themselves take into account any type of employment, we gather from the ASSD only transitions into regular dependent employment above the marginal earnings threshold (€ 366.33 per month in 2010, € 374.02 in 2011). Self-employment, marginal employment, and atypical employment in the form of contract-based work and freelance status activities are not included. In our empirical analysis, we consider a job-seeker as being successful only if we can identify a job take-up according to both the survey and the ASSD. This holds true for a population share of 49.8%. Among these successful job-seekers, the mean duration between unemployment entry and job start is about 5.5 months (163 days). The median duration is roughly 4.5 months (134 days).

After analysing determinants of the exit rate from unemployment to work, we compare the quality of job matches across job finding methods. In this part, we restrict the sample to all successful job-seekers with a job take-up according to both the survey and the ASSD. Our main job match quality indicators are log monthly starting wage and log job duration, because these are arguably the ones most immediately affected by the job search and finding process. Given that we are able to follow individual labour market trajectories from unemployment entry (between November 2009 and May 2010) up to the end of 2011 in the administrative records, the length of our observation period ranges from 19 to 26 months. Income data are available only until the end of 2010. Hence, in this case the length of the follow-up period is between 7 and 14 months. Wages correspond to the base for the assessment for social security contributions which is subject to a ceiling under social insurance law. They are defined as gross monthly wages and include annual premia and occasional bonus payments. Among all successful job-seekers in our sample that includes all cases where information on the job finding channel and income was available, the mean monthly starting wage is € 1,742 (median € 1,675).

Job duration can be measured on a daily basis in the administrative records. If employment spells do not end before December 31st 2011, the end of our observation period, we record them as censored. 28.6% of the observed employment episodes are right-censored. The total average job duration is 254 days or approximately 8.5 months (median 183 days).

A short job duration does not necessarily imply a bad match, but may also be the result of a favourable job-to-job move. Restricting the focus to employment with a single employer could therefore be misleading. For this reason, we use as additional search outcome and employment stability indicator the number of days employed as a proportion of all calendar days in the time period between unemployment entry and the end of our observation period. On average, the successful job-seekers spent 59.6% of the time in employment (median duration 64.2%).

Table 2 presents information on job search methods form the survey. In particular, we have information on all search methods the individuals used during job search and on the ones they considered to be the most important. In addition, the successful job-seekers specified the job finding channel that was responsible for their search success and gave further details of the application process and the quality of the job found.

Altogether, 13 job search methods were specified in the survey. We collapse the list into eight categories: (i) search with the help of placement offers or lists of job vacancies provided by the Public Employment Service (PES)[9], (ii) use of (printed) newspaper advertisements, (iii) use of internet advertisements, (iv) use of job bulletins in educational institutions or firms, (v) use of private employment agencies (recruitment agencies or personnel consultants), (vi) asking friends or relatives, (vii) direct applications to firms (in the absence of any job posting), and (viii) a residual category of other methods.[10] The first (double-)column of Table 2 presents the share of job-seekers using each of these methods. The numbers reveal that four channels are most relevant in individual job search: the PES, personal contacts, newspaper advertisements, and internet advertisements. The PES is the most frequently used search method among the unemployed, with a utilisation rate of 74.2%.[11] This high proportion of users indicates that the service of this institution is important not only for selected groups, but for the population of job-seekers at large. With 72.2%, a slightly lower proportion of job-seekers ask friends or relatives when looking for a job. Newspaper (68.2%) and internet advertisements (67.4%) are each used by about two-thirds of the job-seekers. In both cases, individuals typically respond to job postings (newspaper 67.3%, internet 67.0%) rather than actively placing advertisements (newspaper 6.0%, internet 19.0%). Every second job-seeker (54.1%) directly applies to firms to find a job. The remaining job search channels – job bulletins in firms or educational institutions, private agencies, and others – are used markedly less frequently.

Most individuals use a search channel more or less from the start of unemployment. For instance, 86.4% of those who search with the help of placement offers by the PES and 90.5% of those who respond to jobs posted with the PES reported having searched this way from the start.[12] Job-seekers typically use more than one channel: on average, an individual employs four job search methods. The most frequent combination consists of PES, friends, newspaper, internet, and direct applications. 10.3% of the job-seekers in our sample do not exploit any search channel at all.

The second and third columns in Table 2 report information on the search channel, which the job-seekers identify as most important during search and on the channel which led to the job match for successful searchers. Obviously, job seekers attach a high value to online job

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[9]Information on vacant jobs is provided in printed and electronic form – through lists available at PES, self-service PCs, an online job exchange platform ("eJob-Room"), and a web search engine designed to search for jobs posted on Austrian company websites ("AMS jobroboter").

[10]This residual category contains a miscellany of responses such as "temporary employment agency", "former employer", and "start-up service".

[11]66.4% of the job-seekers use placement offers, 54.9% use job openings listed with the PES.

[12]Note that these figures are not included in Table 2.

Table 2: Job search channel use and job finding success

	(1) Channel used		(2) Most important channel	(3) Job finding channel	(4) Success rate
	N	%	%	%	%
Formal job search channels					
PES	1,231	74.2	15.7	18.4	11.4
Newspaper	1,132	68.2	18.8	11	7.5
Internet	1,119	67.4	29.7	14.6	10
Bulletin	453	27.3	1.4	1.7	1.8
Private agency	223	13.4	1.6	4.3	13
Informal job search channels					
Friends and relatives	1,198	72.2	19.2	33.6	20.4
Direct application	898	54.1	12.1	9.6	7.2
Other channels	47	2.8	1.5	6.8	
No search	170	10.3			
Total sample	1,660	100.0	100.0	100.0	
Mean nr. of search channels used					3.8
Mean nr. of formal search channels used					2.5
% share using informal search channels					79.8

Sources: ASSD, AUR, and survey data. Notes: Success rate: number of individuals reporting to be successful with the respective channel as a proportion of all those who use it. Other job finding channels include a miscellany of responses. 44.2% of successful job-seekers start their own business; 13.3% are rehired by their former employer; 15.1% are approached directly by a company they had no contact to before; 7.6% find their job through a temporary employment agency.

search. With a share of 29.7% of all responses, the internet is cited most frequently as the most important job search channel (the share is 37.6% among all individuals who use the internet for job search). Friends or relatives (19.2%), newspaper advertisements (18.8%), and the PES (15.7%) clearly rank behind. However, as column 3 indicates, it is not the internet, but social networks that are the most promising vehicle for finding a job. Only every seventh job-seeker with successful transition to employment (14.6%) identified the internet as the responsible job finding channel. One-third of all successful job-seekers (33.6%) find their jobs by asking friends or relatives. About one-fifth of all jobs (18.4%) are found with the help of the PES, 11.0% through newspaper advertisements.

These findings on successful search channels are broadly in line with earlier evidence on job search methods used by successful job seekers in the Austrian province of Styria. As in our study, asking friends and relatives and the use of media advertisements were identified as the most successful job search methods. Weber and Mahringer (2008) found that almost half of all jobs (46.3%) were acquired through personal contacts and 20.6% via print or internet media. Our results differ, however, with respect to the quantitative importance of the PES: Weber and Mahringer (2008) assessed the share of job matches generated by this labour market intermediary at around 7.8%, which is not even half of the proportion we find in our analysis. This is probably due to differences in the population considered, as the sample in Weber and Mahringer (2008) also includes non-unemployed individuals who search on the job. A comparison further reveals that the utilisation rates of all job search channels and particularly the PES are higher among unemployed job seekers than all successful job-seekers in Weber and Mahringer (2008).

The final column four in Table 2 presents the success rate of job search methods, computed as the ratio of the number of persons reporting to be successful with a particular channel over all those who use it. Also in this comparison, asking friends and relatives appears to be the most promising job search method, with a success rate of 20.4%. PES (11.4%) and internet (10.0%) follow in second and third place. Only few jobs are found through private employment agencies (4.3%), but this is also because of the low frequency of their use (13.4% of all job-seekers). Once

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people charge private recruitment agencies or personnel consultants, their chances of finding a job via that method are higher compared with most other methods: The success rate is 13.0%.

Next, we focus on the contact intensity with the PES. Since all job-seekers in our sample were registered as unemployed, each of them should have some contact to the Public Employment Service. Indeed, 99.6% of all persons interviewed reported that they had at least once a personal meeting or contact with the PES via telephone, e-mail or some other means of communication. 70.1% stated that they received placement offers by the PES during their search – 11.6% once, 58.6% more than once. These numbers are highly consistent with the information we obtain from the administrative records. For 99.1% of the job-seekers, at least one PES contact is recorded in the Austrian Unemployment Register (AUR), compared with 99.6% in the survey. Among those who reported searching via the PES in the survey, 99.2% had at least one PES contact, according to the AUR. The share of individuals receiving placement offers is slightly higher according to the unemployment register (75.4%) compared with the survey information (70.1%). 48.2% of the individuals in our sample received up to one placement offer per month in unemployment, 27.2% received more. This difference is plausible, because in the case of the AUR we count all offers received during the entire unemployment spell, not only those received up to the time of the interview.

Since they are more accurate, we use the data from the AUR to construct two measures for the amount of PES counselling. Based on the number of contacts per day in unemployment, we generate a variable denoted as PES_1 that distinguishes between a low, medium and high contact frequency with the PES. The detailed definition of the variable is summarised in Table 3. Individuals with low contact frequency have contacts with the PES less often than every 5-6 weeks (40 days). Medium contact frequency is defined as having at least one contact every 5-6 weeks (40 days), whereas high contact frequency corresponds to having one contact to the PES at least every 3-4 weeks. On average, unemployed individuals have about 11 contacts with the PES during their unemployment spell. This corresponds to contact intervals of about 25 days.

Based on the number of placement offers per day in unemployment, we similarly construct a second counselling variable labelled PES_2. In this case we distinguish between individuals with no, few and many offers. Individuals with few offers we define as being those who receive at most 1 offer per month in unemployment. Job-seekers with many placement offers receive more than 1 placement offer per month. The mean number of placement offers received is just under 6, which corresponds to slightly below 1 offer per month. As shown in Table 3, 28.2% of our population of job-seekers have a low contact frequency (less than every 5-6 weeks), 29.5% a medium contact frequency and 42.3% a high contact frequency with the PES (at least one contact every 3-4 weeks).

In addition to the two PES counselling measures PES_1 and PES_2, we use a survey variable for perceived pressure to take up a job (PES_3), when we examine the influence of PES intervention on job search effort and job search success. All surveyed job-seekers who received placement offers were asked whether they felt pressure to take up a job. The answer options were "no", "yes, a little", "yes, much" and "yes, with a threat of a benefit suspension". 17.0% of the job-seekers in our sample reported some sort of pressure perceived when receiving placement offers by the PES. 6.5% felt a little pressure, 3.1% much, and 7.5% reported threat of having their benefit suspended. We exploit this survey question on perceived pressure in our analysis to test whether job-seekers devote more effort to job search and have a higher probability of taking up a job, when their caseworker takes a more demanding stance.

Table 3: Measures of PES counselling

Variable	Data source	Freq.	In %
PES$_1$: Contact frequency with the PES	AUR		
Low (less often than every 40 days)		468	28.2
Medium (at least every 40 days, but less often than every 25 days)		489	29.5
High (at least every 25 days)		703	42.3
Mean nr. of contacts: 10.58 in total, 0.04 per day in unemployment			
PES$_2$: Number of PES placement offers	AUR		
None (during entire unemployment spell)		409	24.6
Few ($\leq$1 per month in unemployment)		800	48.2
Many (>1 per month in unemployment)		451	27.2
Mean nr. of placement offers: 5.88 in total, 0.03 per day in unemployment			
PES$_3$: Perceived pressure at placement offer receipt	Survey		
No placement offer (in time until interview)		496	29.9
No pressure (or no clear response)		882	53.1
Low pressure		107	6.4
High pressure		51	3.1
Pressure with threat of a benefit sanction		125	7.5
Total		1,660	100.0

Sources: ASSD, AUR, and survey data. Notes: AUR: Austrian Unemployment Register. Maximum for contact frequency with PES set to 1 contact per week. Low contact frequency: <0.025 contacts per day in unemployment. Medium contact frequency: $\geq$0.025 and <0.04 contacts per day in unemployment. High contact frequency: $\geq$0.04 contacts per day in unemployment. Maximum for number of placement offers set to 1 contact per week. Few placement offers: >0 and $\leq$0.033333 placement offers per day in unemployment. Many placement offers: >0.033333 offers per day in unemployment.

4 Empirical analysis

Our empirical analysis is structured in two parts. First, we investigate the job search behaviour of the unemployed, namely the determinants for the choice of a particular job search channel, the receipt of PES counselling and job search effort. Thereafter, we examine job search success: We explore the determinants of exit from unemployment to paid work as well as the link between job finding channel and job match quality.

4.1 Job search behaviour

4.1.1 Choice of job search channels

In order to shed light on the choice of job search channels, we examine the correlation of detailed personal characteristics with the probability of using a certain method in a set of binary logistic regressions. We restrict our attention to individuals who use at least one search channel in order to separate the choice of a certain method from differences in search effort. We consider the seven search channels specified above (neglecting the residual category of "other" methods). Additionally, we highlight the characteristics of "inactive" job-seekers who do not use any search channel at all.

Table 4 presents the estimation results in the form of the sign and significance of the estimated parameters. We see that job search choices vary significantly by individual characteristics. Women are significantly more likely to use the channels newspaper, internet, and job bulletins than men. Young people search with higher probability via internet and private employment agencies than older ones. Conversely, the propensity to resort to newspaper advertisements when looking for a job increases with age. Apart from being rather young, internet users are likely to be of higher education: Individuals with secondary education and especially those with

Table 4: Determinants of the use of job search channels
Estimates from binary logistic regressions of search channels for all active job-seekers

	PES (1)	Newspaper (2)	Internet (3)	Bulletin (4)	Private agency (5)	Friends (6)	Direct appl. (7)	No search (8)
Woman		+	+	+				
Age (years)		+	-		–			+
Education								
(ref.: at most compulsory school)								
Intermediate vocational school		+	+					
Apprenticeship	–							
Higher academic or vocational school			+					
Academic education	–		+			+		–
Austrian citizenship								–
Language skills								
(ref.: neither of both)								
German as mother tongue		+	+					
German learnt from early age		+						
High work motivation								–
Large social network	–	+				+		
Lack of PC-access		–	–			–		+
Financial problems	+					+	+	–
Unemployment spell duration	+				+	+	+	
Unemployment in last 2 years								
(ref.: 0 days)								
1-183 days								–
184-366 days								–
>366 days	+		+		+		+	
Days of sickness benefit								
receipt in last 2 years				+				+
Involuntary job loss								–
Regional unemployment rate						-		+
Mean dependent variable	0.833	0.766	0.757	0.306	0.151	0.811	0.608	0.103
Observations	1,490	1,490	1,490	1,490	1,490	1,490	1,490	1,660
Pseudo R^2	0.109	0.114	0.221	0.0823	0.115	0.0913	0.0629	0.234

ASSD, AUR, and survey data. Notes: Regression of using no search channel is run for the total sample of job-seekers. Constant included in the regressions. Covariates contain socio-demographics as well as details of the observed unemployment spell, the last job, previous labour market history, the job-seeker's home region, and the local labour market conditions. Plus sign indicates significant positive relationship, minus sign significant negative relationship (at a 10%-significance level). Robust standard errors.

an academic degree have a significantly higher probability of searching online than those with no more than compulsory education. Men and women, whose mother tongue is not German and who have not learned the language from an early age, use newspaper advertisements and job postings on the internet substantially less often than those with better language skills.

The PES seems to be used as an alternative means of job search by individuals with limited access to other avenues. We find that the probability of searching with the help of the PES is higher for individuals with only a small social network. Likewise, job-seekers who report having financial problems likely to hamper their job search, notably via more costly means, are more inclined to use the PES. Furthermore, persons with characteristics carrying a labour market disadvantage tend to resort to the PES to a higher degree, such as the lower-educated (individuals with at most compulsory education) compared with the better-educated, particularly the academics. Finally, reliance on the PES increases with the duration of the observed unemployment spell and the extent of unemployment in the last two years preceding unemployment entry.[13]

The odds of not using any search method increase with age and the number of previous sickness absences. They are also positively influenced by a low work motivation, a lack of access to a personal computer, and the unemployment rate in the home region. Being Austrian, having an academic degree, having financial problems or being in involuntary unemployment (the last job was not quit on own initiative) reduces the odds of not searching at all. Whereas for men having

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[13]Estimates of a multinomial logit model of the job finding channel underscore the particular importance of the PES as job search channel for low-educated individuals. Those with high education (academics) and, thus, more favourable labour market attributes, find their jobs significantly more often through other modes of search, especially through the internet and direct application addressed to firms.

children makes no difference, a small child aged up to 3 years raises a woman's probability of not searching at all substantially. Children aged 4-6 years have the opposite effect: They reduce the probability of not searching.[14] This result may reflect mothers' increased efforts to return into employment, once children are growing older.

A comparison of pseudo-R^2-values across columns in Table 4 reveals pronounced differences in the extent to which individual characteristics can explain variation in the utilisation of each search method. Internet users and non-searchers seem to be distinct groups that can be more easily identified. By contrast, much of the variation in the utilisation of other search channels is unexplained. In particular, we observe that a high number of job-seekers search via PES, newspaper advertisements, friends and direct applications, while at the same time the pseudo-R^2-values for regressions of these outcomes are low.

4.1.2 Selection into PES counselling

Apart from the role of the PES as a job search channel, we examine the influence of the PES as a provider of counselling and support services. For this purpose we use the two counselling measures PES_1 and PES_2 as well as the variable PES_3 on perceived pressure to take up a job. In line with our findings on the utilisation of the PES as a job search channel, estimates from logistic regressions of the three counselling measures (see Table 14 in the Appendix) point to a "negative" selection of job-seekers with particular difficulties on the labour market into PES-counselling. Having spent more time in unemployment in the past two years and receiving unemployment assistance is associated with a larger amount of counselling in terms of both contact frequency with the PES and the number of placement offers received. Unemployment assistance recipients are also more likely to feel pressure to take up a job when receiving placement offers. In particular, they face a higher probability of being exposed to benefit sanctions. Another group with a higher amount of counselling received are individuals with language problems. They have more contact to the PES and tend to receive more placement offers.

4.1.3 Job search effort

We define three proxy variables to measure job search effort. First, we define search effort by the total number of job search methods an individual uses (on a scale from 0 to 8^{15}). The other two measures of search effort focus on search along formal (PES, newspaper advertisements, internet advertisements, job bulletins, and private employment agencies) and informal channels (asking friends or applying directly to firms). In particular, we restrict the measure of search effort to the number of formal search channels used for the second proxy. Our third measure of search effort is an indicator equal to one for individuals using one of the informal search methods. In order to investigate the determinants of job search effort, we run linear regressions with the proxies of search effort as dependent variables.

The full estimation results are presented in Appendix Table 13. We see that both formal and informal search effort varies with personal characteristics of job-seekers. In particular, workers with a high level of education, for whom search is potentially more productive, use several formal and informal search channels with a higher probability than low-educated ones. At the same time, individuals who have become involuntarily unemployed, workers with a long

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[14]These results are shown in Appendix Table 11.

[15]This includes the channels PES, newspaper, internet, job bulletin, private agency, friends, direct contact to firms, and the residual category of other search methods.

unemployment history and individuals with particular problems that they perceive as barriers to work (physical problems, financial problems, mobility constraints and individuals reporting child care obligations) exploit a broader range of search channels, as well. Probably, these groups face particular difficulties in finding a (suitable) job or liquidity constraints and therefore take more effort to search for a job.

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Table 5: Determinants of job search effort
Estimates from least squares and binary logistic regressions

	Overall search effort OLS		Formal search OLS		Informal search Logit	
	(1)	(2)	(3)	(4)	(5)	(6)
Contact frequency with PES (ref.: low)						
Medium	0.374***	0.328**	0.200**	0.177*	0.088***	0.085***
	(0.144)	(0.131)	(0.101)	(0.092)	(0.029)	(0.029)
High	0.632***	0.532***	0.406***	0.344***	0.124***	0.116***
	(0.145)	(0.131)	(0.102)	(0.093)	(0.030)	(0.028)
Number of PES placement offers (ref.: none)						
Few	0.710***		0.542***		0.085***	
	(0.140)		(0.098)		(0.027)	
Many	1.007***		0.782***		0.141***	
	(0.159)		(0.114)		(0.032)	
Pressure at placement offer receipt						
No offer		-1.594***		-1.181***		-0.180***
		(0.121)		(0.088)		(0.027)
Little pressure		-0.079		-0.158		0.085***
		(0.150)		(0.111)		(0.027)
Much pressure		0.001		-0.025		0.040
		(0.232)		(0.151)		(0.060)
Threat of a benefit sanction		0.139		0.025		0.035
		(0.191)		(0.131)		(0.041)
Observations	1,660	1,660	1,660	1,660	1,660	1,660
R^2	0.221	0.318	0.227	0.322		
Adj. R^2	0.181	0.282	0.187	0.287		
Pseudo R^2					0.174	0.211

Sources: ASSD, AUR, and survey data. Notes: Average marginal effects reported. (1) and (2): Total number of job search channels used (0-8). (3) and (4): Number of formal job search channels used. (5) and (6): Dummy for informal search (asking friends or directly applying to firms). Constant included in the regressions. Covariates contain socio-demographics as well as details of the observed unemployment spell, the last job, previous labour market history, the job-seeker's home region, and the local labour market conditions. For complete regression output see Table 13 in the Appendix. Robust standard errors in parentheses. *** $p<0.01$, ** $p<0.05$, * $p<0.1$.

Women tend to use a larger number of formal search methods than men. For them, small children aged up to 3 years dampen job search effort, while having children aged 4-6 years induces them to use a greater variety of search methods. It may be that mothers are less keen to work as long as they have young children. Once children have grown older, returning to the labour market could turn out to be difficult and women may feel the need to exploit various sorts of job search channels to find a job.

People lacking language skills use formal search methods such as newspaper and internet ads less frequently. The absence of access to a personal computer decreases both formal and informal job search. Thus, overall, the use of job search methods seems to be determined by a mixture of their accessibility and expected (relative) productivity and costs. Moreover, neighbourhood effects apparently play a role: People living in a region with a relatively higher unemployment rate exploit a smaller number of job search channels.

Our specific interest is to examine the link between PES counselling and job search effort, results summarised in Table 5. As expected, we find clear evidence of a positive correlation

between the amount of PES intervention and job search effort. The higher the contact frequency with the PES, the higher is the number of job search channels used. Likewise, job search effort increases with the number of placement offers received. As regards the character of counselling, we find no clear evidence for a significant correlation between pressure exerted by the caseworker when delivering placement offers and the number of job search methods used.

We distinguish between formal and informal search channels in order to test for a possible substitution of formal for informal search as a result of PES counselling. Van den Berg – Van der Klaauw (2006) predict such a substitution effect based on a stationary job search model with endogenous search effort along two distinct search channels. They assume that counselling increases the efficiency of formal job search only. Consequently, counselling should raise formal job search effort and the rate at which individuals leave unemployment by way of the formal channel, while at the same time reducing informal job search effort and the rate at which they exit through the informal channel. In contrast to this prediction, our empirical results indicate that a higher amount of PES counselling is not only associated with a higher formal job search effort, but also carries a higher probability of engaging in informal search. In other words, PES counselling positively influences the efficiency of search via all types of channels. Intuitively, this is plausible, because assistance with drafting job application letters, for example, can be expected to facilitate not only formal job search, but also the direct application to firms.

Table 6: Job search effort by PES-use as job search channel

	Total sample			Only "active" searchers		
	Total	PES-users	Non- users	Total	PES-users	Non- users
Mean nr. of search channels used (0-8)	3.8	4.6	1.6	4.2	4.6	2.6
Mean nr. of formal search channels used	2.5	3.1	0.8	2.8	3.1	1.3
Share using newspaper ads (in %)	68.2	81.6	29.6	76	81.6	49.1
Share using internet ads (in %)	67.4	78.7	35.2	75.1	78.7	58.4
Share using bulletins (in %)	27.3	33.6	9.1	30.4	33.6	15.1
Share using private agencies (in %)	13.4	16.3	5.3	15.0	16.3	8.7
Share using informal search channels (in %)	79.8	90.2	49.9	88.9	90.2	82.7
Share using friends (in %)	72.2	82.4	42.8	80.4	82.4	70.9
Share using direct applications to firms (in %)	54.1	62.9	28.8	60.3	62.9	47.7
Share using not a single channel (in %)	10.3	0.0	39.7	0.0	0.0	0.0
Observations	1,660	1,231	441	1,490	1,231	429

Sources: ASSD, AUR, and survey data. Notes: "Active" searchers include all job-seekers with use of at least one job search channel.

To explore this issue further, we estimate the same set of regression models of job search effort again, for measures of search outcome that exclude the PES channel. The results confirm that PES counselling stimulates not only search via PES, but search activities in general.[16] In Table 6, we compare job search effort of individuals who report using the PES as search channel and those who do not. No matter if we consider the total sample or only "active" job-seekers who use at least one job search method, we find that PES-users are far more likely to use a range of different job search methods than non-users. This finding holds in a multivariate model, in which other characteristics are held constant. Thus, the results of several exercises suggest that PES support stimulates the use of both formal and informal search channels in Austria. Most job-seekers use a comprehensive mix of formal and informal job search methods in which the PES is an integral part (see Table 12 in the Appendix).

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[16]Results are available on request.

4.2 Job search success

4.2.1 Exit rate to work

Having investigated job search behaviour, we now turn to job search success. Table 7 presents the parameter estimates of binary logistic regression models in which we analyse the influence of job search effort, PES counselling and personal characteristics on the probability of finding a job.[17] In particular, the dependent variable is a dummy that equals one, if an individual takes up a job within the time period between unemployment entry and the survey date.

Table 7: Determinants of the exit from unemployment to work
Binary logistic regressions of the exit to paid work until the survey date

	(1)	(2)	(3)
Search effort	0.017**	0.005	0.001
	(0.007)	(0.006)	(0.007)
Contact frequency with PES (ref.: Low)			
Medium		0.220***	0.218***
		(0.033)	(0.033)
High		0.367***	0.397***
		(0.034)	(0.033)
Number of PES placement offers (ref.: Few)			
No placement offer		0.130***	
		(0.028)	
Many		0.136***	
		(0.032)	
Pressure at placement offer receipt (ref.: no pressure)			
No offer			-0.020
			(0.030)
Little pressure			-0.026
			(0.055)
Much pressure			-0.035
			(0.052)
Threat of a benefit sanction			0.068
			(0.045)
Observations	1,660	1,660	1,660
Pseudo R^2	0.208	0.307	0.293

Sources: ASSD, AUR, and survey data. Notes: Average marginal effects reported. Constant included in the regressions. Covariates contain socio-demographics as well as details of the observed unemployment spell, the last job, previous labour market history, the job-seeker's home region, and the local labour market conditions. For complete regression output see Table 15 in the Appendix. Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

We find a significant positive association between job search effort and job search success: The higher the number of job search channels used, the higher is the chance of exiting to paid work. Once we integrate our measures of PES counselling into the model, the coefficient for job search effort turns insignificant. This reflects the strong correlation between the contact frequency with the PES and the number of search methods used. The contact intensity with the PES clearly has a positive influence on the exit rate to work. Job-seekers with a medium contact frequency have a higher chance of finding a job than those with a low contact frequency. Those with a high contact frequency stand the best chance of succeeding with such transition. Compared with those with few placement offers, both individuals who did not receive any placement offer and individuals who received many offers exhibit a higher likelihood of exit to work. Potentially, those without any placement offers do not receive this kind of assistance because they (are anticipated to) find a job (quickly) without. Among all individuals who receive this kind of support, those who receive

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[17]See Appendix Table 15 for the full estimation results.

more placement offers have a higher chance of exiting to work. We do not find evidence for a significant correlation (at a 10% significance level) between pressure exerted by the caseworker and the transition to employment.

4.2.2 Job match quality

In the final part of our analysis, we examine the link between job finding method and job match quality. The sample for this comparison consists of all successful job-seekers who have taken up a job by the time of the interview. We further restrict the sample to individuals for whom a job is recorded in both, the survey and the ASSD, and who report the search channel by which they found the job. Table 8 presents descriptive statistics of job search outcomes by the main job finding channels (job bulletins are included in the residual category of "other" channels). The comparison indicates that jobs found through the PES are of above-average duration and rather low pay. The mean log job duration is higher only for jobs found through the residual category of "other" methods.[18] This finding holds, if we restrict our sample to all successful job-seekers whose employment spell ends within the observation period.[19] In contrast, the share of employment during the time between unemployment entry and the end of our observation period is below average for individuals successful with the PES. In particular, it is considerably lower than for those who found their job via internet or private agencies. Monthly starting wages are lowest for jobs found through the PES among all job finding methods. Again, the highest mean values are observed for individuals who were successful through internet and private employment agencies.

Table 8: Job match quality by job finding channel

	Log job duration (in days)				Employment share (in %)				Starting wage (in €)			
	Mean	Median	Sd	N	Mean	Median	Sd	N	Mean	Median	Sd	N
PES	5.06	5.36	1.29	142	58.4	64.2	26.3	142	7.28	7.34	0.41	128
Internet	4.92	5.30	1.59	113	64.8	70.3	23.0	113	7.45	7.58	0.51	101
Newspaper	4.93	5.23	1.49	85	60.3	62.8	26.4	85	7.42	7.46	0.42	79
Direct contact	4.74	4.76	1.24	74	56.4	53.5	26.4	74	7.42	7.42	0.37	63
Friends	5.01	5.20	1.18	259	58.6	62.4	25.2	259	7.34	7.38	0.44	228
Private agency	4.74	5.15	1.63	33	68.5	64.6	16.8	33	7.56	7.58	0.37	32
Others	5.18	5.37	1.24	66	55.1	61.0	26.9	66	7.32	7.36	0.54	56
Total	4.97	5.21	1.33	772	59.6	64.2	25.3	772	7.37	7.42	0.45	687

Sources: ASSD, AUR, and survey data. Notes: Sd: Standard deviation. Employment share measured over the individual-specific observation period from unemployment entry to December 31st 2011 (19-26 months). Job bulletins are subsumed under the residual category of other job finding channels.

In order to account for compositional differences of job seekers who are successful with the different methods, we apply multivariate-least-squares regressions of each of the outcome measures. In these regressions, we use the PES as reference and compare outcomes across the other job finding methods. The estimation results are shown in Table 9. Quantitatively, the regression results confirm the descriptive analysis. However, the differences in outcomes by job finding channel are mostly insignificant. Jobs found via the PES do not significantly differ in job tenure from those found through other channels. Neither are there any significant differences with respect to the employment share. Most differences in mean earnings are insignificant at a 10% significance level, when we condition on an array of personal characteristics. However, monthly

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[18]We control for the starting month of unemployment to cope with right-censoring.
[19]Results are available on request.

starting wages are significantly lower for people who were successful with the PES compared with those successful with the internet and private employment agencies.

Table 9: Job finding channel and job match quality
Estimates from least squares regressions of the job match quality on the job finding channel

	(1) Log job duration (in days)	(2) Employment share (in %)	(3) Log monthly wage (in €)
Friends	0.109	-0.030	0.002
	(0.157)	(0.026)	(0.047)
Internet	-0.231	0.003	0.125**
	(0.209)	(0.028)	(0.055)
Newspaper	-0.121	-0.035	0.070
	(0.226)	(0.035)	(0.055)
Private agency	-0.367	0.035	0.130*
	(0.316)	(0.033)	(0.077)
Direct contact	-0.174	-0.007	0.083
	(0.201)	(0.034)	(0.052)
Others	0.231	-0.025	0.039
	(0.199)	(0.039)	(0.068)
Observations	772	772	687
R^2	0.218	0.424	0.462
Adj. R^2	0.123	0.354	0.387

Sources: ASSD, AUR, and survey data. Notes: Constant included in the regressions. Job bulletins are subsumed under the residual category of other job finding channels. Covariates contain socio-demographics as well as details of the observed unemployment spell, the last job, previous labour market history, the job-seeker's home region, and the local labour market conditions. Smaller number of observations in (3) due to missing information on wages. Robust standard errors in parentheses. *** $p<0.01$, ** $p<0.05$, * $p<0.1$.

5 Discussion and concluding remarks

In this article, we provide insights into the job search process of the unemployed. Combining rich information from a job-seeker survey and two sources of administrative data, we show which search strategies job-seekers choose and what determines their job search effort and job search success. In particular, we are able to shed some light on the role of the Public Employment Service in shaping job search strategies, the exit rate to paid work, and post-unemployment job match quality.

We find that the PES, friends, newspaper and internet advertisements are the job search channels most frequently used. Job-seekers attach a high value to internet job search, and a lack of PC-access is identified as a major barrier to job search. Promoting easy access to online search tools is therefore an important task of the PES. However, rather than internet job search, asking friends or relatives is by far the most promising search strategy for employment take-up. One-third of all successful job-seekers (33.6%) obtain their jobs through personal contacts.

The importance of this search channel has been highlighted by a number of earlier studies.[20] It is less costly and apparently more productive than other methods. Through informal social networks job-seekers may find out about work opportunities they would not have known about otherwise, and they obtain detailed information on the available jobs from someone who works in the firm or field of interest in question. On the employer's side, informal references may reduce uncertainty about the productivity of an applicant, because present employees can provide

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[20]For theoretical analyses see Rees 1966, Montgomery 1991, Ioannides – Datcher Loury 2004, and Calvó-Armengol – Jackson 2004, 2007. For empirical investigations see Pellizzari 2008 for Italy, Caliendo – Schmidl – Uhlendorf 2011 for Germany, Cappellari – Tatsiramos 2010 for the UK, and Cingano – Rosolia 2012 for Italy.

additional information, they will tend to refer people with similar qualities as themselves and will consider that their own reputation is affected by the quality of their reference (cf. Rees 1966, Holzer 1988, Montgomery 1991, Datcher Loury 2006, and Kramarz 2011). These advantages may explain the big role that personal contacts are playing.

Our findings underscore the central importance of the PES in the job search process of the unemployed. It is used as a job search channel by three-fourths of all job-seekers (74.2%) and is responsible for one-fifth (18.4%) of all job take-ups. The counselling and placement services that the PES provides are not equally important for all individuals but are used primarily by individuals with relatively poor labour market prospects, namely those with low education, long unemployment record, and low wage profiles. This main clientele searches and finds work more often through the PES and receives a higher amount of counselling. The role of the PES as a formal intermediary can be seen as complementary to the informal search through personal contacts. Our results suggest that it serves as an alternative means of job search for individuals with only a small social network and for those who have limited access to other search channels due to financial or language problems.

There are several channels through which PES intermediation possibly influences individual job search behaviour and success: First, it facilitates labour exchange through its own placement of job-seekers to job vacancies. Second, it provides comprehensive counselling and support aimed at increasing the efficiency of job-seekers' own search activities. Third, it shapes job search effort by influencing the productivity of search and monitoring compliance with job search requirements.

We find clear evidence for a positive link between the amount of PES counselling that job-seekers receive and their job search effort: The higher the contact frequency with the PES, the higher is the number of job search channels they use. Likewise, job search effort increases with the number of placement offers received. Whereas theoretical research predicts a substitution of formal for informal job search, our results suggest that job search assistance increases the efficiency and, thus, effort devoted to both search via the PES and search through other formal and informal channels.

Job search effort and job search success are positively correlated: The higher the number of job search channels used, the higher is the chance of finding a job. The amount of PES counselling has a favourable impact, as well. Job-seekers with a higher contact frequency with the PES or a higher number of placement offers received stand a better chance of re-entering employment. Hence, it seems that the PES positively influences job- seekers' chances of finding a job – directly, through placing them into vacancies and increasing the general efficiency of their job search, as well as indirectly, by stimulating their job search effort.

Previous evidence on the effectiveness of search via the PES is mixed. Most studies rest on a reduced-form analysis of job search. Whereas some of them find a positive impact on the job-finding probability[21], others do not[22] or only to a limited extent.[23] Fougère – Pradel – Roger (2009) use a structural approach and find for France that an increase in the arrival rate of job vacancies through the PES is associated with an increase in the exit rate from unemployment, especially for low-educated and unskilled workers. A similarly positive picture emerges from micro-econometric evaluations of particular job search assistance programmes. The majority finds job search assistance programmes to be effective in boosting job finding rates, especially if

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[21]See Holzer 1988 for Canada, and Gregg – Wadsworth 1996 for the UK.
[22]See, e.g., Böheim – Taylor 2002 for the UK, and Addison – Portugal 2002 for Portugal.
[23]See Wielgosz – Carpenter 1987 for the US, and Osberg 1993 for Canada.

combined with intensive counselling and short-term training measures.[24] Our results are in line with these findings.

Positive effects found for PES counselling can be the result of an improved matching of job-seekers to jobs. Alternatively, they may arise from an increase in job search effort induced by counselling and monitoring (cf. Thomsen 2009). The recent empirical literature that focuses specifically on the impact of benefit sanctions indicates, with few exceptions[25], positive short-term effects on the exit rate from unemployment.[26] In our analysis, we find no clear evidence for unemployed individuals devoting more effort to job search and having a higher probability of taking up a job when being put under pressure of sanctions.

Only few studies compare the job match quality between persons who found their job via the PES with those successful using another job search method.[27] The evidence is inconclusive. We find that jobs found with the help of the PES are, on average, not significantly different from those generated by other job search channels in terms of job tenure, although being rather poorly paid. In a purely descriptive comparison across all job finding methods, the monthly gross pay is lowest for jobs found through the PES. When conditioning on an array of personal characteristics in wage regressions, most of the differences are insignificant. This implies that the low outcomes for jobs placed by the PES are attributable to the "negative" selection of job-seekers into search via the PES, rather than a matter of the quality of its service. However, after accounting for compositional differences, mean wages remain significantly lower compared with jobs found through the internet and private employment agencies. This result may be explained by several factors:

1. One is the dual responsibility of the PES for job placement and the provision of wage-compensation benefits on the one hand, and the institutional priority to keep periods of unemployment short, on the other. The requirement to accept a job considered reasonable and the threat of benefit sanction in case of non-compliance provide an incentive for job-seekers to take up a job more quickly, because of the increased cost of being unemployed. If individuals are pushed towards exiting unemployment as early as possible, this could lower their reservation wage and favour a faster exit to work at lower wages.[28] We do not find

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[24]For a review see Thomsen 2009, for a meta-analysis of recent micro-econometric evaluations see Card – Kluve – Weber 2010. Examples of studies are Graversen – Ours 2008 for Denmark, Weber – Hofer 2004 for Austria, and Behaghel – Crépon – Gurgand 2012 for France. Two further examinations suggest for Denmark that the intensity of treatment in terms of the frequency of meetings between unemployed workers and caseworkers has a significant positive influence on employment rates (see Van den Berg – Kjaersgaard – Rosholm 2012 and Pedersen – Rosholm – Svarer 2012). Finally, some other studies indicate that lower caseloads for caseworkers result in higher employment chances at least for some subgroups of the unemployed (see Koning 2009 for the Netherlands and Hofmann et al. 2012 for Germany).

[25]See Kastoryano – Van der Klauuw 2011 and Van den Berg – Van der Klaauw 2006 for the Netherlands.

[26]See, e.g., Van den Berg – Van der Klauuw – Van Ours 2004, Abbring – Van den Berg – Van Ours 2005, Boone – Sadrieh – Van Ours 2009, Van der Klauuw – Van Ours 2013 and Lammers – Bloemen – Hochguertel 2013 for the Netherlands; Jensen – Rosholm – Svarer 2005 and Svarer 2011 for Denmark, Hofmann 2008 for West Germany, Van den Berg – Vikström 2009 for Sweden, Boockmann – Thomsen – Walter 2009 for Germany, Lalive – Van Ours – Zweimüller 2005 and Behncke – Frölich – Lechner 2010 for Switzerland.

[27]See Wielgosz – Carpenter 1987 and Datcher Loury 2006 for the US, Addison – Portugal 2002 for Portugal, Weber – Mahringer 2008 for Austria, Thomsen – Wittich 2010 for Germany and Mang 2012 for Portugal.

[28]This idea is supported, for example, by an empirical investigation of Arni – Lalive – Van Ours (2012) who found for Switzerland that both a warning and an actual reduction of unemployment benefits increases the rate of leaving unemployment, but at the same time reduces post-unemployment earnings. See also Van den Berg – Vikström 2009 for Sweden. Other empirical studies show that receiving (more generous) unemployment benefits increases unemployment duration, while improving job matching quality in return (see, e.g., Gaure – Roed – Westlie 2008 for Norway and Tatsiramos 2009 for 8 EU-countries).

proof of a significant association between pressure and the exit rate to work, but a bias towards a fast exit from unemployment is clearly inherent in the Austrian unemployment insurance system.

2. Another explanation could be that internet and private employment agencies are more effective in reducing information asymmetry between job applicants and employers. Internet search channels such as online job boards, employment portal websites for major corporations, streamlined online application systems, and online social networks could make job search and recruitment processes more efficient. They lower job search costs for both workers and firms, enable them to consider more potential matches more quickly, provide more detailed information than traditional newspaper ads and offer sophisticated search and filter options to find suitable vacancies. These advantages could result in a higher quality of job matches, because workers and employers have the opportunity to learn more about each other and, thus, to make more informed decisions. Furthermore, the ability to maintain many more connections through online platforms and to consider a larger number of potential matches may induce workers and employers to be choosier and, thus, to raise their reservation match quality (cf. Autor 2001, Freeman 2002, Kuhn 2003, Stevenson 2009, Choi 2011, Mang 2012, and Kroft – Pope 2014). Private employment agencies are possibly better able than the PES to assure good matches through a specialised, person-specific screening and matching process.

3. The services of the PES are used predominantly by individuals with lower levels of skills, resources and employment prospects. At the same time, many firms do not report their vacancies to the PES and post high-level jobs through other channels (Weber – Mahringer 2008). Firms could possibly perceive PES-support as a negative signal of workers' productivity and therefore offer lower wages. Moreover, it is plausible that they pay lower wages simply because, in comparison with recruitment through internet or private employment agencies, they are more uncertain about an applicant's work capacity. Whereas the PES targets the disadvantaged and long-term unemployed, private service providers often focus on the more privileged and white-collar workers (Kluve 2010).

4. Based on rich information from three merged data sources, we are able to control for a large variety of covariates that may influence the probability of using the PES. Nevertheless, unobserved heterogeneity cannot be ruled out. It is possible that remaining differences in mean wages are explained by a "negative" selection of workers into PES-based search that is not fully captured in our empirical model.

Concerning the policy relevance of our findings, we note that the role of the PES among the search channels is important and that it succeeds in facilitating exit from unemployment to work. As stipulated by governmental guidelines, the emphasis of counselling is currently on a rapid job placement. Even if effort has already been increased, the PES could attach more weight to improving the quality of matches. Encouraging more firms to report higher-level job vacancies is part of a possible solution.

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Appendix

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Table 10: Summary statistics

Variable	Data source	Mean	Sd
Socio-demographic characteristics			
Woman	AUR	0.451	0.498
Age (years)	AUR	37.345	11.680
At most compulsory school	AUR	0.460	0.499
Intermediate vocational school	AUR	0.058	0.234
Apprenticeship	AUR	0.330	0.470
Higher academic or vocational school	AUR	0.100	0.300
Academic education	AUR	0.047	0.211
Single	AUR	0.393	0.489
Youngest child aged ≤ 3 years	AUR	0.087	0.282
Youngest child aged 4-6 years	AUR	0.082	0.275
Youngest child aged 7-12 years	AUR	0.142	0.349
Disabled	AUR	0.130	0.336
Austrian citizenship	AUR	0.814	0.390
Turkish citizenship	AUR	0.023	0.149
Former Yugoslavia citizenship	AUR	0.066	0.249
EU27 citizenship	AUR	0.059	0.236
Other foreign citizenship	AUR	0.038	0.192
German as mother tongue	Survey	0.727	0.446
German learnt from early age	Survey	0.081	0.273
German neither mother tongue nor learnt from early age	Survey	0.192	0.394
Large social network	Survey	0.811	0.391
Large occupational network	Survey	0.804	0.397
Use of occupational online networks	Survey	0.168	0.374
High work motivation ("Work is an essential life component I don't want to do without")	Survey	0.845	0.362
Lack of access to PC	Survey	0.075	0.263
Child care problems perceived as search barrier	Survey	0.073	0.260
Other problems in the family perceived as search barrier	Survey	0.059	0.236
Physical problems perceived as search barrier	Survey	0.254	0.435
Psychological problems perceived as search barrier	Survey	0.147	0.354
Mobility constraints perceived as search barrier	Survey	0.158	0.365
Financial problems perceived as search barrier	Survey	0.199	0.400
Lack of language skills perceived as search barrier	Survey	0.059	0.235
Characteristics of unemployment episode			
Unemployment duration	ASSD	190.541	147.530
Unemployment entry in January	ASSD	0.151	0.359
Unemployment entry in February	ASSD	0.126	0.331
Unemployment entry in March	ASSD	0.156	0.363
Unemployment entry in April	ASSD	0.164	0.370
Unemployment entry in May	ASSD	0.134	0.340
Unemployment entry in November	ASSD	0.136	0.343
Unemployment entry in December	ASSD	0.134	0.341
Receipt of no benefit	AUR	0.136	0.343
Receipt of unemploment insurance	AUR	0.562	0.496
Receipt of unemploment assistance	AUR	0.206	0.405
Receipt of both benefit types	AUR	0.095	0.294
Labour market history			
Days unemployed in last 2 years	ASSD	193.515	219.079
Days unemployed in last 5 years	ASSD	395.010	440.634

Variable	Data source	Mean	Sd
Days employed in last 2 years	ASSD	365.523	273.283
Days employed in last 5 years	ASSD	914.393	609.647
Days of sickness benefit receipt in last 2 years	ASSD	29.955	70.625
Days of sickness benefit receipt in last 5 years	ASSD	48.137	102.609
Days out of labour-force in last 2 years	ASSD	59.336	157.479
Days out of labour-force in last 5 years	ASSD	145.725	332.064
Main employment status before unemployment entry			
Last job in 2009	ASSD	0.357	0.479
Last job in 2010	ASSD	0.365	0.481
Involuntary job loss	Survey	0.459	0.498
Labour market entrant	Survey	0.042	0.201
Attributes of last job			
Previously in permanent employment	Survey	0.671	0.470
Previously in atypical employment	Survey	0.115	0.320
Previously in part-time employment	Survey	0.207	0.405
Previously working over-time frequently	Survey	0.506	0.500
Last monthly wage (if job in 2009 or 2010)	ASSD	1,950.475	1,050.19
Manufacturing	AUR	0.130	0.337
Construction	AUR	0.069	0.253
Trade	AUR	0.185	0.389
Tourism	AUR	0.126	0.331
Communication, insurance, properties	AUR	0.040	0.196
Freelance, academic and technical services	AUR	0.031	0.174
Other economic services	AUR	0.151	0.358
Public services	AUR	0.098	0.300
Other services	AUR	0.044	0.205
Agriculture, forestry, energy, water, transport, missing	AUR	0.125	0.331
Regional characteristics			
Province of Burgenland	AUR	0.024	0.153
Province of Carinthia	AUR	0.054	0.226
Province of Lower Austria	AUR	0.175	0.380
Province of Upper Austria	AUR	0.155	0.362
Province of Salzburg	AUR	0.061	0.239
Province of Styria	AUR	0.139	0.346
Province of Tyrol	AUR	0.074	0.262
Province of Vorarlberg	AUR	0.038	0.191
Province of Vienna	AUR	0.280	0.449
Human capital-intensive region (labour market district)	AUR	0.669	0.471
Real capital-intensive region (labour market district)	AUR	0.164	0.370
Rural region (labour market district)	AUR	0.167	0.373
Regional labour market conditions (labour market district)			
Regional unemployment rate in unemployment entry year	AUR	0.748	0.213
Regional share of long-term unemployed 0-1%	AUR	0.378	0.485
Regional share of long-term unemployed 1-3%	AUR	0.320	0.467
Regional share of long-term unemployed 3-5%	AUR	0.151	0.358
Regional share of long-term unemployed >5%	AUR	0.151	0.358
Job search outcomes			
Job take-up according to survey (already realised or forthcoming)	ASSD	0.555	0.497
Job take-up according to both survey and ASSD	ASSD	0.498	0.500
Duration from unemployment entry to job take-up (in days)*	ASSD	163.000	115.000
Monthly starting wage (in €)*	ASSD	1,742.000	735.800
Job duration (in days)*	ASSD	254.000	211.100
Employment share in entire observation period*	ASSD	0.596	0.253
Observations			1,660

Sources: ASSD, AUR, and survey data. Notes: AUR: Austrian Unemployment Register. ASSD: Austrian Social Security Database. Entire observation period: From unemployment entry to the end of 2011. *Restricted sample of successful job-seekers with a job take-up (49.8%).

Table 11: Determinants of the use of job search channels

Estimates from binary logistic regressions of search channels for all active job-seekers

	PES	Newspaper	Internet	Bulletin	Private agency	Friends	Direct appl.	No search
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Woman	-0.000	0.109***	0.047*	0.118***	-0.021	-0.015	0.042	-0.030
	(0.023)	(0.027)	(0.026)	(0.031)	(0.024)	(0.027)	(0.032)	(0.018)
Age (years)	-0.001	0.003**	-0.003***	-0.001	-0.002*	0.002	0.001	0.002*
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Education (ref.: At most compulsory school)								
Intermediate vocational school	-0.033	0.107**	0.084**	-0.050	0.001	0.042	-0.008	-0.059*
	(0.047)	(0.051)	(0.043)	(0.053)	(0.045)	(0.053)	(0.066)	(0.033)
Apprenticeship	-0.056*	-0.033	0.044	0.057	0.002	-0.003	0.024	-0.000
	(0.030)	(0.034)	(0.030)	(0.035)	(0.028)	(0.030)	(0.038)	(0.023)
Higher academic or vocational school	-0.027	0.010	0.083**	-0.040	0.045	0.012	-0.050	-0.037
	(0.032)	(0.038)	(0.037)	(0.040)	(0.036)	(0.037)	(0.047)	(0.023)
Academic education	-0.084**	0.017	0.124***	0.072	0.050	0.068**	-0.030	-0.055**
	(0.039)	(0.040)	(0.036)	(0.047)	(0.040)	(0.033)	(0.048)	(0.024)
Austrian citizenship	0.059	-0.047	-0.026	-0.003	-0.022	-0.029	-0.074	-0.069**
	(0.038)	(0.038)	(0.039)	(0.044)	(0.040)	(0.040)	(0.048)	(0.032)
Single	-0.035	-0.017	-0.024	-0.055**	0.006	-0.053**	-0.014	-0.018
	(0.023)	(0.026)	(0.025)	(0.028)	(0.023)	(0.026)	(0.031)	(0.017)
Youngest child aged ?3 years	-0.039	-0.046	-0.001	-0.055	0.044	-0.044	-0.112**	0.051
	(0.042)	(0.051)	(0.050)	(0.049)	(0.051)	(0.051)	(0.057)	(0.040)
Youngest child aged 4-6 years	0.053	0.069	0.082*	0.017	0.003	-0.030	0.119**	-0.059**
	(0.035)	(0.043)	(0.048)	(0.058)	(0.045)	(0.049)	(0.056)	(0.024)
Youngest child aged 7-12 years	0.030	-0.016	0.030	0.043	0.011	0.009	-0.041	-0.008
	(0.031)	(0.039)	(0.035)	(0.041)	(0.036)	(0.035)	(0.046)	(0.027)
Disabled	0.030	-0.059	-0.018	-0.064	0.062	-0.091**	0.045	0.013
	(0.037)	(0.047)	(0.036)	(0.042)	(0.044)	(0.044)	(0.046)	(0.027)
Language skills (ref.: neither of both)								
German as mother tongue	-0.027	0.167***	0.096**	0.048	-0.002	-0.002	0.035	0.008
	(0.037)	(0.048)	(0.044)	(0.045)	(0.036)	(0.045)	(0.052)	(0.027)
German learnt from early age	0.046	0.160***	0.079	0.060	-0.013	0.012	0.067	-0.018
	(0.038)	(0.059)	(0.061)	(0.063)	(0.048)	(0.054)	(0.067)	(0.033)
High work motivation	0.033	-0.012	-0.037	0.042	-0.017	0.036	0.022	-0.037
	(0.032)	(0.032)	(0.032)	(0.039)	(0.032)	(0.037)	(0.041)	(0.024)
Large social network	-0.057**	0.075**	0.037	-0.017	-0.002	0.077**	-0.009	0.034*
	(0.027)	(0.037)	(0.033)	(0.040)	(0.032)	(0.036)	(0.040)	(0.019)
Large occupational network	0.003	-0.043	-0.002	0.019	-0.017	-0.012	0.046	-0.003
	(0.030)	(0.032)	(0.030)	(0.035)	(0.030)	(0.030)	(0.040)	(0.020)
Use of occupational online networks	-0.009	0.019	0.179***	0.071*	0.065**	-0.003	0.050	0.005
	(0.027)	(0.034)	(0.023)	(0.037)	(0.030)	(0.031)	(0.036)	(0.024)
Lack of access to personal computer	-0.000	-0.011	-0.354***	0.092	0.011	-0.111*	0.005	0.120***
	(0.042)	(0.055)	(0.062)	(0.060)	(0.045)	(0.057)	(0.061)	(0.044)
Child care problems as search barrier	-0.028	0.088**	-0.202***	0.033	-0.054	0.082**	0.064	-0.005
	(0.048)	(0.043)	(0.060)	(0.053)	(0.038)	(0.039)	(0.058)	(0.034)
Other problems in the family	0.020	-0.018	0.020	-0.016	-0.029	0.054	-0.058	-0.047**
	(0.044)	(0.054)	(0.042)	(0.052)	(0.039)	(0.044)	(0.066)	(0.024)
Physical problems	-0.012	0.052	0.034	0.088**	-0.011	0.005	0.003	0.004
	(0.033)	(0.035)	(0.030)	(0.040)	(0.029)	(0.033)	(0.041)	(0.023)
Psychological problems	-0.021	-0.025	-0.018	-0.029	0.004	0.014	-0.033	0.046*
	(0.037)	(0.041)	(0.038)	(0.043)	(0.037)	(0.037)	(0.049)	(0.028)
Mobility constraints	0.060*	0.046	-0.028	0.033	-0.036	-0.034	-0.049	-0.072***
	(0.031)	(0.033)	(0.032)	(0.041)	(0.030)	(0.035)	(0.042)	(0.017)
Financial problems	0.060**	-0.017	0.024	0.022	-0.034	0.054*	0.073*	-0.067***
	(0.027)	(0.033)	(0.029)	(0.038)	(0.026)	(0.030)	(0.040)	(0.016)
Unemployment spell duration	0.000**	0.000	0.000	0.000	0.000***	0.000*	0.000*	-0.000
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Month of unempl. entry (ref.: January)								
February	-0.020	0.001	-0.010	-0.047	-0.005	0.004	0.073	-0.033
	(0.038)	(0.047)	(0.041)	(0.052)	(0.045)	(0.047)	(0.057)	(0.028)
March	-0.090**	0.051	-0.084**	-0.085*	-0.039	0.019	0.057	-0.013
	(0.041)	(0.044)	(0.042)	(0.050)	(0.040)	(0.042)	(0.055)	(0.029)
April	-0.069	0.010	-0.041	-0.064	0.014	-0.033	0.017	0.020
	(0.042)	(0.049)	(0.044)	(0.052)	(0.046)	(0.047)	(0.059)	(0.032)
May	-0.055	0.058	-0.068	-0.031	-0.003	-0.039	0.018	-0.064**
	(0.041)	(0.044)	(0.042)	(0.051)	(0.044)	(0.045)	(0.056)	(0.025)
November	-0.076*	-0.082	-0.058	-0.051	-0.053	0.044	0.022	0.005
	(0.044)	(0.055)	(0.046)	(0.055)	(0.044)	(0.042)	(0.061)	(0.032)
December	-0.009	-0.013	-0.080	-0.016	-0.066	-0.018	0.168***	-0.014
	(0.045)	(0.060)	(0.051)	(0.065)	(0.042)	(0.056)	(0.062)	(0.031)
Benefit receipt (ref.: No benefit)								

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	PES	Newspaper	Internet	Bulletin	Private agency	Friends	Direct appl.	No search
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Unemployment insurance (UI)	0.008	-0.055	-0.007	-0.017	-0.065	-0.047	-0.074	-0.022
	(0.042)	(0.042)	(0.043)	(0.052)	(0.046)	(0.042)	(0.055)	(0.044)
Unemployment assistance (UA)	0.057	-0.109**	0.026	-0.040	-0.005	0.031	-0.042	-0.009
	(0.045)	(0.050)	(0.044)	(0.056)	(0.054)	(0.043)	(0.059)	(0.041)
Both UI and UA	0.077	0.050	0.051	0.014	-0.046	0.038	0.046	-0.049
	(0.047)	(0.050)	(0.053)	(0.066)	(0.053)	(0.050)	(0.066)	(0.047)
Unemployment in last 2 years (ref.: 0 years)								
1-183 days	0.002	0.044	-0.006	-0.003	0.014	-0.044	0.021	-0.056**
	(0.033)	(0.035)	(0.036)	(0.037)	(0.025)	(0.035)	(0.042)	(0.026)
184-366 days	0.044	0.016	0.067	-0.029	0.038	0.030	0.084	-0.097***
	(0.044)	(0.052)	(0.046)	(0.052)	(0.041)	(0.047)	(0.056)	(0.035)
>366 days	0.125***	0.053	0.142***	-0.018	0.119*	0.053	0.147*	-0.077
	(0.048)	(0.069)	(0.055)	(0.074)	(0.069)	(0.060)	(0.076)	(0.049)
Days unemployed in last 5 years	-0.000	0.000	-0.000**	0.000	-0.000	-0.000	-0.000	0.000
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Days employed in last 2 years	-0.000	-0.000	0.000*	-0.000**	0.000	0.000	0.000	0.000
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Days employed in last 5 years	0.000	0.000*	-0.000*	0.000*	0.000	0.000	-0.000	0.000
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Days of sickness benefit receipt in last 2 years	0.000	0.000	0.000	0.001*	-0.001	-0.001	-0.000	0.001***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Days of sickness benefit receipt in last 5 years	-0.000	-0.000	-0.000**	-0.001	-0.000	0.001**	0.000	-0.000
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Days out of labour-force in last 2 years	0.000	-0.000	0.000**	0.000	0.000	0.000	0.001***	-0.000
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Days out of labour-force in last 5 years	-0.000	0.000	-0.000	0.000	-0.000	-0.000	-0.000***	0.000
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Last wage	-0.000	0.000	0.000	-0.000***	0.000	-0.000	0.000*	0.000
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Last job in 2009	0.034	0.036	-0.004	0.103*	-0.002	0.049	0.045	0.004
	(0.044)	(0.050)	(0.048)	(0.056)	(0.045)	(0.046)	(0.059)	(0.036)
Last job in 2010	0.056	0.017	0.053	0.142**	-0.016	0.104**	0.027	-0.034
	(0.047)	(0.055)	(0.051)	(0.056)	(0.044)	(0.046)	(0.063)	(0.035)
Labour market entrant	0.017	0.031	0.085*	0.098	-0.044	0.048	0.022	-0.023
	(0.049)	(0.062)	(0.051)	(0.076)	(0.047)	(0.049)	(0.077)	(0.034)
Previously in permanent employment	0.021	0.009	0.025	-0.043	-0.035	0.005	-0.018	-0.042**
	(0.026)	(0.030)	(0.029)	(0.033)	(0.026)	(0.028)	(0.035)	(0.020)
Previously in atypical employment	-0.000	-0.097**	0.010	-0.051	0.092**	0.020	-0.033	-0.055**
	(0.033)	(0.040)	(0.036)	(0.042)	(0.038)	(0.036)	(0.045)	(0.025)
Previously in part-time employment	0.011	-0.005	-0.004	-0.016	0.032	-0.019	0.008	0.007
	(0.030)	(0.035)	(0.031)	(0.036)	(0.032)	(0.032)	(0.041)	(0.024)
Previously working over time	0.002	0.001	0.007	0.063**	0.062***	0.037	0.050*	0.006
	(0.021)	(0.026)	(0.024)	(0.028)	(0.022)	(0.025)	(0.030)	(0.017)
Involuntary job loss	0.010	0.032	0.035	0.021	0.020	0.032	0.002	-0.057***
	(0.022)	(0.025)	(0.029)	(0.029)	(0.022)	(0.025)	(0.030)	(0.016)
Industry affiliation (ref.: trade, agriculture, forestry, energy, water, transport, missing)								
Manufacturing	0.007	0.034	-0.013	0.095*	-0.011	-0.011	-0.018	-0.027
	(0.036)	(0.041)	(0.042)	(0.053)	(0.037)	(0.042)	(0.053)	(0.026)
Construction	-0.037	0.004	-0.116*	-0.007	-0.006	-0.031	-0.056	0.024
	(0.059)	(0.059)	(0.066)	(0.078)	(0.055)	(0.063)	(0.078)	(0.038)
Tourism	0.030	0.011	0.004	-0.014	0.004	0.043	-0.148**	-0.004
	(0.045)	(0.052)	(0.051)	(0.059)	(0.046)	(0.042)	(0.063)	(0.030)
Communication, insurance, properties	-0.068	0.011	-0.041	0.058	-0.007	0.073*	0.007	-0.060**
	(0.055)	(0.058)	(0.057)	(0.070)	(0.039)	(0.040)	(0.064)	(0.029)
Freelance, academic and technical services	0.047	0.005	0.043	-0.018	0.023	-0.042	-0.074	-0.033
	(0.038)	(0.055)	(0.061)	(0.066)	(0.052)	(0.059)	(0.072)	(0.039)
Other economic services	-0.014	0.039	-0.031	0.145**	0.038	-0.002	-0.084	-0.049*
	(0.045)	(0.047)	(0.047)	(0.059)	(0.045)	(0.046)	(0.060)	(0.025)
Public services	0.010	-0.017	-0.016	0.012	0.017	0.035	-0.012	-0.028
	(0.039)	(0.048)	(0.045)	(0.054)	(0.041)	(0.040)	(0.056)	(0.028)
Other services	0.037	0.004	-0.078	0.060	-0.032	0.024	-0.028	0.004
	(0.042)	(0.063)	(0.060)	(0.067)	(0.046)	(0.051)	(0.068)	(0.042)
Others	-0.016	0.016	-0.025	0.075	-0.015	0.088***	-0.039	0.022
	(0.041)	(0.045)	(0.044)	(0.055)	(0.040)	(0.032)	(0.055)	(0.030)
Province (ref.: Vienna)								
Burgenland	0.199**	-0.009	-0.116	-0.030	-0.207**	0.023	0.174	0.108
	(0.078)	(0.116)	(0.089)	(0.110)	(0.081)	(0.071)	(0.110)	(0.067)
Carinthia	0.142**	0.096	-0.085	-0.001	-0.090	0.028	0.076	0.098*
	(0.071)	(0.084)	(0.075)	(0.097)	(0.085)	(0.061)	(0.097)	(0.052)
Lower Austria	0.144*	0.014	-0.163**	-0.004	-0.143	-0.070	0.156	0.114**
	(0.085)	(0.099)	(0.083)	(0.103)	(0.094)	(0.083)	(0.106)	(0.056)
Upper Austria	0.078	0.071	-0.082	-0.098	0.000	-0.203**	0.013	0.114**
	(0.102)	(0.090)	(0.073)	(0.092)	(0.121)	(0.101)	(0.116)	(0.056)

	PES	Newspaper	Internet	Bulletin	Private agency	Friends	Direct appl.	No search
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Salzburg	0.210***	0.197***	-0.056	0.018	-0.139	-0.106	0.113	0.173**
	(0.074)	(0.076)	(0.078)	(0.111)	(0.101)	(0.104)	(0.117)	(0.072)
Styria	0.132*	0.039	-0.113*	0.002	-0.121	-0.006	0.070	0.093***
	(0.069)	(0.075)	(0.059)	(0.078)	(0.078)	(0.053)	(0.083)	(0.035)
Tirol	0.102	0.060	-0.171**	-0.031	-0.164*	-0.079	0.043	0.103**
	(0.083)	(0.089)	(0.077)	(0.100)	(0.090)	(0.083)	(0.109)	(0.049)
Vorarlberg	0.120	0.140*	-0.161*	0.048	-0.033	-0.070	0.114	0.103
	(0.089)	(0.085)	(0.097)	(0.114)	(0.117)	(0.090)	(0.114)	(0.067)
Type of region (ref.: human capital-intensive)								
Real capital-intensive region	0.022	-0.104**	-0.052	-0.040	0.007	-0.019	0.025	-0.001
	(0.034)	(0.044)	(0.036)	(0.041)	(0.034)	(0.039)	(0.043)	(0.024)
Rural region	0.051	0.004	-0.052	-0.047	0.018	-0.009	-0.074	-0.013
	(0.031)	(0.037)	(0.038)	(0.041)	(0.032)	(0.036)	(0.048)	(0.024)
Regional unemployment rate	0.009	0.003	-0.006	-0.018	-0.014	-0.034**	0.007	0.020**
	(0.013)	(0.014)	(0.014)	(0.017)	(0.015)	(0.015)	(0.019)	(0.009)
Regional share of long-term unemployed (ref.: 0-1%)								
Regional share of long-term unemployed 1-3%	-0.054	0.048	-0.011	-0.007	0.116***	-0.064	-0.012	-0.015
	(0.044)	(0.050)	(0.047)	(0.057)	(0.042)	(0.044)	(0.057)	(0.037)
Regional share of long-term unemployed 3-5%	-0.053	-0.019	0.042	-0.050	0.092	-0.153**	-0.051	-0.025
	(0.056)	(0.074)	(0.057)	(0.073)	(0.060)	(0.071)	(0.080)	(0.045)
Regional share of long-term unemployed >5%	-0.096	-0.054	-0.039	-0.054	0.074	-0.020	-0.126	-0.037
	(0.064)	(0.080)	(0.070)	(0.078)	(0.063)	(0.062)	(0.087)	(0.046)
Mean dependent variable	0.833	0.766	0.757	0.306	0.151	0.811	0.608	0.103
Observations	1,504	1,504	1,504	1,504	1,504	1,504	1,504	1,660
Pseudo R^2	0.109	0.114	0.221	0.0823	0.115	0.0913	0.0629	0.234

Sources: ASSD, AUR, and survey data. Notes: Average marginal effects reported. Regression of using no search channel is run for the total sample of job-seekers. Constant included in the regressions. Covariates contain socio-demographics as well as details of the observed unemployment spell, the last job, previous labour market history, the job-seeker's region of residence, and the local labour market conditions. Robust standard errors.

Table 12: Search bundles by number of search channels used

	Freq.	In %
1 search method		
Friends	35	37.0
PES	34	35.1
Internet	13	13.6
Direct contact	7	7.5
Newspaper	4	4.6
Private agency	1	1.5
Bulletin	1	0.8
Total	96	100.0
2 search methods		
PES & Friends	18	16.2
PES & Newspaper	17	15.1
PES & Internet	13	11.9
Friends & Newspaper	12	10.7
Friends & Direct contact	11	9.8
Newspaper & Internet	9	8.1
Internet & Direct contact	9	8.0
Friends & Internet	9	7.9
PES & Direct contact	7	6.4
Bulletin & Direct contact	4	3.7
Newspaper & Direct contact	1	1.1
Friends & Private agency	1	1.1
Internet & Bulletin	0	0.2
Total	111	100.0
3 search methods		
PES & Friends & Internet	39	19.1
PES & Friends & Newspaper	38	18.9
PES & Newspaper & Internet	36	17.6
Friends & Newspaper & Internet	21	10.4
Friends & Internet & Direct contact	11	5.6
PES & Friends & Direct contact	11	5.6
Friends & Newspaper & Direct contact	7	3.2
PES & Internet & Direct contact	6	3.1
PES & Newspaper & Direct contact	5	2.6
Newspaper & Internet & Direct contact	4	1.9
Friends & Internet & Private agency	3	1.7
Newspaper & Internet & Private agency	3	1.4
PES & Newspaper & Bulletin	3	1.4
Friends & Bulletin & Direct contact	2	1.2
PES & Internet & Private agency	2	1.1
PES & Friends & Private agency	2	0.9
Internet & Bulletin & Direct contact	2	0.9
PES & Internet & Bulletin	2	0.9
PES & Bulletin & Direct contact	1	0.7
Friends & Internet & Bulletin	1	0.5
Friends & Newspaper & Private agency	1	0.4
PES & Newspaper & Private agency	1	0.4
PES & Private agency & Direct contact	1	0.3
Newspaper & Internet & Bulletin	0	0.1
Internet & Bulletin & Private agency	0	0.1
Total	203	100.0
4 search methods		
PES & Friends & Newspaper & Internet	128	37.5
PES & Friends & Newspaper & Direct contact	45	13.1
PES & Newspaper & Internet & Direct contact	34	10.0
PES & Friends & Internet & Direct contact	32	9.4
Friends & Newspaper & Internet & Direct contact	29	8.4
PES & Friends & Newspaper & Bulletin	20	5.9
PES & Newspaper & Internet & Bulletin	5	1.6
PES & Friends & Internet & Bulletin	5	1.5
PES & Internet & Private agency & Direct contact	5	1.5
Friends & Newspaper & Bulletin & Direct contact	5	1.4
PES & Newspaper & Internet & Private agency	5	1.3
PES & Newspaper & Bulletin & Direct contact	4	1.2
Friends & Newspaper & Internet & Bulletin	4	1.2
PES & Internet & Private agency & Friends	4	1.1
PES & Internet & Bulletin & Direct contact	4	1.1
PES & Bulletin & Friends & Direct contact	3	1.0
PES & Friends & Newspaper & Private agency	3	0.8

	Freq.	In %
Friends & Internet & Bulletin & Direct contact	2	0.7
Friends & Internet & Private agency & Direct contact	2	0.5
Newspaper & Internet & Bulletin & Direct contact	1	0.4
PES & Friends & Private agency & Direct contact	1	0.3
Newspaper & Internet & Private agency & Direct contact	1	0.2
Friends & Newspaper & Internet & Private agency	0	0.1
Total	342	100.0
5 search methods		
PES & Friends & Newspaper & Internet & Direct contact	230	54.4
PES & Newspaper & Internet & Bulletin & Friends	42	9.8
PES & Newspaper & Bulletin & Friends & Direct contact	32	7.7
PES & Friends & Newspaper & Internet & Private agency	27	6.3
PES & Friends & Internet & Bulletin & Direct contact	20	4.8
PES & Newspaper & Internet & Bulletin & Direct contact	18	4.3
Friends & Newspaper & Internet & Bulletin & Direct contact	15	3.6
PES & Friends & Internet & Private agency & Direct contact	9	2.1
Friends & Newspaper & Internet & Private agency & Direct contact	9	2.1
PES & Newspaper & Internet & Private agency & Direct contact	8	1.8
PES & Friends & Newspaper & Private agency & Direct contact	6	1.5
PES & Friends & Bulletin & Private agency & Direct contact	2	0.5
PES & Friends & Internet & Bulletin & Private agency	1	0.3
PES & Newspaper & Bulletin & Private agency & Direct contact	1	0.3
PES & Newspaper & Internet & Bulletin & Private agency	1	0.3
PES & Internet & Bulletin & Private agency & Direct contact	0	0.1
Newspaper & Internet & Bulletin & Private agency & Direct contact	0	0.1
Total	423	100.0
6 search methods		
PES & Friends & Newspaper & Internet & Bulletin & Direct contact	198	69.4
PES & Friends & Newspaper & Internet & Private agency & Direct contact	63	22.0
PES & Friends & Newspaper & Internet & Bulletin & Private agency	14	5.0
PES & Friends & Newspaper & Bulletin & Private agency & Direct contact	6	2.1
PES & Friends & Internet & Bulletin & Private agency & Direct contact	2	0.6
PES & Newspaper & Internet & Bulletin & Private agency & Direct contact	2	0.6
Friends & Newspaper & Internet & Bulletin & Private agency -& Direct contact	1	0.3
Total	285	100.0
7 search methods		
PES & Friends & Newspaper & Internet & Bulletin & Private agency & Direct contact	44	100.0
Total	44	100.0

Sources: ASSD, AUR, and survey data.

Table 13: Determinants of job search effort
Estimates from least squares and binary logistic regressions

	Overall search effort OLS		Formal search OLS		Informal search Logit	
	(1)	(2)	(3)	(4)	(5)	(6)
Contact frequency with PES (ref.: low)						
Medium	0.374***	0.328**	0.200**	0.177*	0.088***	0.085***
	(0.144)	(0.131)	(0.101)	(0.092)	(0.029)	(0.029)
High	0.632***	0.532***	0.406***	0.344***	0.124***	0.116***
	(0.145)	(0.131)	(0.102)	(0.093)	(0.030)	(0.028)
Number of PES placement offers (ref.: none)						
Few	0.710***		0.542***		0.085***	
	(0.140)		(0.098)		(0.027)	
Many	1.007***		0.782***		0.141***	
	(0.159)		(0.114)		(0.032)	
Pressure at placement offer receipt						
No offer		-1.594***		-1.181***		-0.180***
		(0.121)		(0.088)		(0.027)
Little		-0.079		-0.158		0.085***
		(0.150)		(0.111)		(0.027)
Much		0.001		-0.025		0.040
		(0.232)		(0.151)		(0.060)
Threat of a benefit sanction		0.139		0.025		0.035
		(0.191)		(0.131)		(0.041)
Personal characteristics						
Woman	0.413***	0.520***	0.338***	0.413***	0.028	0.047**
	(0.116)	(0.108)	(0.083)	(0.076)	(0.023)	(0.022)
Age (years)	-0.003	-0.004	-0.005	-0.005	-0.000	-0.000
	(0.005)	(0.005)	(0.004)	(0.003)	(0.001)	(0.001)
Education (ref.: at most compulsory school)						
Intermediate vocational school	0.383*	0.212	0.246	0.121	0.082*	0.065
	(0.217)	(0.214)	(0.155)	(0.152)	(0.043)	(0.043)
Apprenticeship	0.050	0.056	0.003	0.011	0.001	0.001
	(0.136)	(0.127)	(0.097)	(0.092)	(0.029)	(0.029)
Higher academic or vocational school	0.234	0.175	0.174	0.130	0.022	0.014
	(0.158)	(0.145)	(0.115)	(0.105)	(0.033)	(0.033)
Academic education	0.510***	0.600***	0.335***	0.400***	0.089***	0.095***
	(0.162)	(0.159)	(0.119)	(0.118)	(0.032)	(0.030)
Austrian citizenship	0.015	0.030	0.058	0.073	-0.011	-0.012
	(0.171)	(0.155)	(0.120)	(0.107)	(0.034)	(0.032)
Single	-0.085	-0.055	-0.056	-0.038	0.016	0.021
	(0.110)	(0.103)	(0.079)	(0.074)	(0.023)	(0.022)
Youngest child aged ≤3 years	-0.220	-0.266	-0.103	-0.133	-0.082*	-0.091**
	(0.212)	(0.198)	(0.151)	(0.142)	(0.044)	(0.045)
Youngest child aged 4-6 years	0.547***	0.434**	0.378***	0.295**	0.031	0.011
	(0.195)	(0.173)	(0.136)	(0.122)	(0.042)	(0.042)
Youngest child aged 7-12 years	0.086	0.147	0.131	0.169	0.030	0.038
	(0.159)	(0.147)	(0.114)	(0.107)	(0.033)	(0.031)
Disabled	-0.077	-0.145	-0.045	-0.097	-0.024	-0.036
	(0.175)	(0.159)	(0.123)	(0.111)	(0.036)	(0.036)
Language skills (ref.: neither of both)						
German as mother tongue	0.281	0.180	0.268**	0.192	0.004	-0.009
	(0.172)	(0.166)	(0.123)	(0.119)	(0.039)	(0.037)
German learnt from early age	0.411*	0.280	0.334**	0.234	-0.024	-0.042
	(0.242)	(0.229)	(0.168)	(0.157)	(0.055)	(0.054)
High work motivation	0.173	0.121	0.082	0.043	0.036	0.025
	(0.141)	(0.134)	(0.103)	(0.100)	(0.030)	(0.030)
Large social network	-0.003	0.035	-0.019	0.005	0.042	0.051*
	(0.141)	(0.135)	(0.099)	(0.096)	(0.032)	(0.031)
Large occupational network	0.007	0.047	-0.017	0.012	-0.012	-0.005
	(0.130)	(0.125)	(0.093)	(0.090)	(0.027)	(0.027)
Use of occupational online networks	0.412***	0.359***	0.317***	0.278***	-0.003	-0.007
	(0.135)	(0.123)	(0.098)	(0.090)	(0.029)	(0.028)
Lack of access to personal computer	-0.714***	-0.456**	-0.498***	-0.310**	-0.152***	-0.104**
	(0.220)	(0.202)	(0.147)	(0.136)	(0.054)	(0.048)
Child care problems as search barrier	0.011	-0.064	-0.125	-0.180	0.087**	0.079*
	(0.201)	(0.186)	(0.146)	(0.136)	(0.038)	(0.040)
Other problems in the family as search barrier	0.057	0.032	0.036	0.017	0.005	0.000
	(0.191)	(0.183)	(0.130)	(0.123)	(0.051)	(0.048)
Physical problems as search barrier	0.290**	0.224	0.237**	0.186*	0.030	0.027
	(0.147)	(0.137)	(0.105)	(0.099)	(0.029)	(0.028)
Psychological problems as search barrier	-0.096	-0.097	-0.063	-0.061	0.007	0.007
	(0.155)	(0.148)	(0.109)	(0.106)	(0.032)	(0.031)

	Overall search effort OLS		Formal search OLS		Informal search Logit	
	(1)	(2)	(3)	(4)	(5)	(6)
Mobility constraints as search barrier	0.255*	0.151	0.245**	0.172*	0.070**	0.049
	(0.140)	(0.135)	(0.101)	(0.100)	(0.028)	(0.030)
Financial problems as search barrier	0.357***	0.295**	0.176*	0.135	0.074***	0.062**
	(0.130)	(0.126)	(0.093)	(0.093)	(0.025)	(0.026)
Unemployment spell duration	0.001**	0.001**	0.001**	0.000*	0.000**	0.000*
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Month of unemployment entry (ref.: January)						
Unemployment entry in February	0.107	-0.036	-0.023	-0.133	0.007	-0.003
	(0.192)	(0.176)	(0.138)	(0.127)	(0.042)	(0.039)
Unemployment entry in March	-0.058	-0.159	-0.158	-0.237*	0.032	0.018
	(0.192)	(0.177)	(0.139)	(0.129)	(0.039)	(0.037)
Unemployment entry in April	-0.116	-0.198	-0.109	-0.173	-0.057	-0.061
	(0.192)	(0.181)	(0.138)	(0.131)	(0.043)	(0.041)
Unemployment entry in May	0.245	0.069	0.140	0.005	0.033	0.005
	(0.191)	(0.177)	(0.139)	(0.130)	(0.041)	(0.040)
Unemployment entry in November	-0.079	-0.230	-0.169	-0.286**	0.047	0.033
	(0.212)	(0.199)	(0.151)	(0.143)	(0.039)	(0.037)
Unemployment entry in December	0.101	-0.130	-0.050	-0.223	0.068*	0.039
	(0.236)	(0.222)	(0.169)	(0.159)	(0.041)	(0.042)
Benefit receipt (ref.: no benefit receipt)						
Receipt of unemployment insurance	-0.356*	-0.230	-0.214	-0.118	-0.033	-0.021
	(0.205)	(0.206)	(0.143)	(0.142)	(0.043)	(0.043)
Receipt of unemployment assistance	-0.306	-0.248	-0.233	-0.185	0.009	0.013
	(0.212)	(0.206)	(0.149)	(0.144)	(0.044)	(0.044)
Receipt of both unemployment insurance and assistance	0.096	0.181	0.040	0.117	0.008	0.014
	(0.251)	(0.244)	(0.175)	(0.169)	(0.052)	(0.051)
Unemployment in last 2 years (ref.: 0 years)						
1-183 days unemployed in last 2 years	0.096	0.135	0.081	0.114	-0.010	-0.001
	(0.144)	(0.134)	(0.106)	(0.098)	(0.030)	(0.030)
184-366 days unemployed in last 2 years	0.399*	0.315	0.232	0.176	0.069*	0.065
	(0.213)	(0.194)	(0.154)	(0.140)	(0.040)	(0.040)
>366 days unemployed in last 2 years	0.587**	0.520*	0.383*	0.337*	-0.014	-0.017
	(0.295)	(0.272)	(0.213)	(0.196)	(0.064)	(0.062)
Days unemployed in last 5 years	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Days employed in last 2 years	-0.001	-0.001	-0.001	-0.001*	-0.000*	-0.000
	(0.001)	(0.001)	(0.000)	(0.000)	(0.000)	(0.000)
Days employed in last 5 years	0.000	0.000	0.000	0.000	0.000	0.000
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Days of sickness benefit receipt in last 2 years	-0.002	-0.002	-0.000	-0.000	-0.001**	-0.001**
	(0.001)	(0.001)	(0.001)	(0.001)	(0.000)	(0.000)
Days of sickness benefit receipt in last 5 years	-0.001	-0.000	-0.001*	-0.001	0.000	0.000
	(0.001)	(0.001)	(0.001)	(0.001)	(0.000)	(0.000)
Days out of labour-force in last 2 years	0.001	0.001	0.000	0.000	0.000	0.000
	(0.001)	(0.001)	(0.000)	(0.000)	(0.000)	(0.000)
Days out of labour-force in last 5 years	-0.000	-0.000	-0.000	0.000	-0.000	-0.000
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Last wage	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Last job in 2009	0.187	0.261	0.111	0.167	0.048	0.045
	(0.218)	(0.207)	(0.155)	(0.148)	(0.042)	(0.042)
Last job in 2010	0.415*	0.498**	0.267	0.335**	0.110**	0.107**
	(0.217)	(0.212)	(0.157)	(0.153)	(0.043)	(0.043)
Labour market entrant	0.266	0.178	0.173	0.103	0.016	-0.001
	(0.276)	(0.253)	(0.193)	(0.174)	(0.053)	(0.054)
Previously in permanent employment	0.129	0.100	0.088	0.068	0.042	0.035
	(0.129)	(0.117)	(0.094)	(0.084)	(0.026)	(0.026)
Previously in atypical employment	0.103	0.147	0.037	0.075	0.076**	0.074**
	(0.151)	(0.152)	(0.117)	(0.120)	(0.031)	(0.033)
Previously in part-time employment	-0.071	-0.130	-0.047	-0.088	-0.053	-0.062*
	(0.139)	(0.133)	(0.099)	(0.093)	(0.034)	(0.033)
Previously working over time	0.169	0.128	0.096	0.064	0.011	0.006
	(0.108)	(0.101)	(0.077)	(0.072)	(0.022)	(0.022)
Involuntary job loss	0.315***	0.294***	0.222***	0.207***	0.071***	0.066***
	(0.107)	(0.101)	(0.076)	(0.073)	(0.023)	(0.022)
Industry affiliation (ref.: trade, agriculture, forestry, energy, water, transport, missing)						
Manufacturing	0.330*	0.257	0.271**	0.218*	0.026	0.018
	(0.184)	(0.165)	(0.131)	(0.119)	(0.035)	(0.035)
Construction	-0.242	-0.148	-0.141	-0.074	-0.073	-0.064
	(0.301)	(0.256)	(0.216)	(0.188)	(0.059)	(0.056)
Tourism	-0.040	-0.152	0.050	-0.026	-0.013	-0.028
	(0.226)	(0.216)	(0.160)	(0.152)	(0.046)	(0.046)
Communication, insurance, properties	0.260	0.294	0.137	0.160	0.083**	0.081**

	Overall search effort OLS		Formal search OLS		Informal search Logit	
	(1)	(2)	(3)	(4)	(5)	(6)
	(0.214)	(0.201)	(0.157)	(0.147)	(0.040)	(0.038)
Freelance, academic and technical services	0.194	0.010	0.252	0.118	-0.038	-0.071
	(0.225)	(0.193)	(0.159)	(0.141)	(0.059)	(0.059)
Other economic services	0.279	0.178	0.306**	0.230*	0.017	0.005
	(0.197)	(0.185)	(0.142)	(0.133)	(0.042)	(0.042)
Public services	0.283	0.118	0.203	0.080	0.061*	0.040
	(0.193)	(0.173)	(0.138)	(0.125)	(0.035)	(0.036)
Other services	0.262	0.158	0.201	0.122	0.036	0.020
	(0.243)	(0.223)	(0.174)	(0.157)	(0.043)	(0.045)
Others	0.045	0.040	0.038	0.037	0.035	0.032
	(0.193)	(0.174)	(0.138)	(0.125)	(0.034)	(0.032)
Province (ref.: Vienna)						
Burgenland	-0.732*	-0.865**	-0.646**	-0.743***	-0.126	-0.150*
	(0.425)	(0.398)	(0.295)	(0.277)	(0.079)	(0.080)
Carinthia	-0.405	-0.526	-0.302	-0.387	-0.085	-0.092*
	(0.392)	(0.368)	(0.270)	(0.253)	(0.053)	(0.055)
Lower Austria	-0.884**	-0.886**	-0.670**	-0.669**	-0.183***	-0.180***
	(0.406)	(0.387)	(0.291)	(0.276)	(0.064)	(0.064)
Upper Austria	-0.945**	-0.862**	-0.548**	-0.488**	-0.338***	-0.319***
	(0.383)	(0.355)	(0.271)	(0.248)	(0.074)	(0.074)
Salzburg	-0.624	-0.703*	-0.339	-0.386	-0.260***	-0.269***
	(0.415)	(0.398)	(0.292)	(0.280)	(0.074)	(0.074)
Styria	-0.542*	-0.699**	-0.409*	-0.519**	-0.134***	-0.154***
	(0.301)	(0.286)	(0.213)	(0.202)	(0.042)	(0.043)
Tirol	-0.908**	-0.876**	-0.621**	-0.585**	-0.172***	-0.175***
	(0.415)	(0.418)	(0.291)	(0.292)	(0.062)	(0.064)
Vorarlberg	-0.594	-0.661	-0.403	-0.451	-0.189**	-0.200**
	(0.487)	(0.456)	(0.344)	(0.323)	(0.076)	(0.079)
Type of region (ref.: Human capital-intensive region)						
Real capital-intensive region	-0.282*	-0.211	-0.248**	-0.203*	-0.044	-0.031
	(0.164)	(0.154)	(0.119)	(0.112)	(0.033)	(0.032)
Rural region	-0.079	-0.019	-0.010	0.036	-0.019	-0.012
	(0.159)	(0.146)	(0.112)	(0.102)	(0.033)	(0.032)
Regional unemployment rate	-0.141**	-0.140**	-0.086*	-0.086**	-0.049***	-0.049***
	(0.065)	(0.061)	(0.046)	(0.042)	(0.012)	(0.012)
Regional share of long-term unemployed (ref.: 0-1%)						
Regional share of long-term unemployed 1-3%	0.039	0.205	0.100	0.217	-0.051	-0.027
	(0.228)	(0.217)	(0.162)	(0.152)	(0.044)	(0.043)
Regional share of long-term unemployed 3-5%	0.009	0.069	0.139	0.176	-0.100	-0.086
	(0.317)	(0.306)	(0.222)	(0.213)	(0.064)	(0.065)
Regional share of long-term unemployed >5%	0.071	0.175	0.096	0.169	0.012	0.024
	(0.333)	(0.322)	(0.237)	(0.227)	(0.055)	(0.057)
Constant	3.221***	4.517***	2.087***	3.086***		
	(0.812)	(0.749)	(0.571)	(0.518)		
Observations	1,660	1,660	1,660	1,660	1,660	1,660
R^2	0.221	0.318	0.227	0.322		
Pseudo R^2					0.174	0.211

Sources: ASSD, AUR, and survey data. Notes: Average marginal effects reported. (1) and (2): Total number of job search channels used (0-8). (3) and (4): Number of formal job search channels used. (5) and (6): Dummy for informal search (asking friends or directly applying to firms). Robust standard errors in parentheses. *** $p<0.01$, ** $p<0.05$, * $p<0.1$.

Table 14: Selection into PES-counselling
Estimates from logistic regressions of PES counselling measures

	(1) Ologit Contact frequency with PES	(2) Mlogit Number of PES placement offers None	(2) Mlogit Number of PES placement offers Many	(3) Binary logit Pressure
Woman	-0.068	0.011	0.104	-0.418**
	(0.128)	(0.173)	(0.185)	(0.197)
Age (in years)	-0.033***	0.015*	-0.013	-0.024**
	(0.006)	(0.008)	(0.008)	(0.010)
Education (ref.: At most compulsory school)				
Intermediate vocational school	-0.232	0.254	0.681**	-0.563
	(0.285)	(0.351)	(0.343)	(0.452)
Apprenticeship	-0.075	0.103	0.607***	0.026
	(0.152)	(0.202)	(0.212)	(0.227)
Higher academic or voc. school	-0.110	0.120	0.701***	-0.386
	(0.182)	(0.238)	(0.253)	(0.300)
Academic education	-0.189	0.070	-0.175	-0.221
	(0.185)	(0.246)	(0.302)	(0.325)
Austrian citizenship	0.400**	-0.204	0.039	0.604**
	(0.196)	(0.250)	(0.279)	(0.294)
Single	0.116	0.156	0.158	-0.460**
	(0.131)	(0.166)	(0.172)	(0.190)
Youngest child aged ≤3 years	-0.039	0.290	-0.343	0.636**
	(0.245)	(0.280)	(0.298)	(0.320)
Youngest child aged 4-6 years	0.192	-0.082	0.129	-0.150
	(0.243)	(0.309)	(0.318)	(0.351)
Youngest child aged 7-12 years	0.108	0.275	0.216	-0.573*
	(0.183)	(0.224)	(0.268)	(0.295)
Disabled	-0.003	0.226	-0.338	-0.133
	(0.204)	(0.231)	(0.267)	(0.275)
Language skills (ref.: neither of both)				
German as mother tongue	-0.473**	0.207	-0.548*	-0.107
	(0.201)	(0.257)	(0.287)	(0.305)
German learnt from early age	-0.092	0.252	-0.172	-0.310
	(0.255)	(0.331)	(0.348)	(0.406)
High work motivation	0.066	-0.432**	-0.073	-0.336
	(0.162)	(0.199)	(0.231)	(0.238)
Large social network	0.058	-0.120	-0.232	-0.287
	(0.174)	(0.203)	(0.226)	(0.242)
Large occupational network	0.271*	0.293	0.127	0.163
	(0.156)	(0.199)	(0.214)	(0.234)
Use uf occup. online networks	-0.457***	0.326*	-0.037	-0.072
	(0.151)	(0.188)	(0.220)	(0.239)
Lack of PC-access	-0.546**	-0.029	0.103	-0.437
	(0.259)	(0.298)	(0.340)	(0.431)
Child care problems	-0.216	0.300	-0.364	0.194
	(0.242)	(0.291)	(0.366)	(0.405)
Other problems in the family	0.097	0.133	0.026	0.027
	(0.228)	(0.305)	(0.371)	(0.378)
Physical problems	-0.567***	0.070	-0.417*	-0.168
	(0.158)	(0.209)	(0.232)	(0.236)
Psychological problems	-0.009	0.395*	-0.199	0.506*
	(0.188)	(0.235)	(0.294)	(0.278)
Mobility constraints	0.065	-0.035	0.146	0.269
	(0.176)	(0.238)	(0.238)	(0.246)
Financial problems	0.055	-0.703***	-0.307	0.470**
	(0.174)	(0.228)	(0.241)	(0.234)
Unemployment spell duration	-0.001	-0.003***	-0.003***	-0.000
	(0.000)	(0.001)	(0.001)	(0.001)
Month of unemployment entry (ref.: January)				
Unemployment entry in February	0.117	0.239	-0.042	-0.215
	(0.225)	(0.305)	(0.300)	(0.346)
Unemployment entry in March	-0.275	0.100	-0.318	-0.165
	(0.217)	(0.289)	(0.301)	(0.342)
Unemployment entry in April	-0.448**	0.292	-0.189	-0.075
	(0.225)	(0.298)	(0.307)	(0.360)
Unemployment entry in May	-0.466**	0.167	-0.470	-0.256
	(0.220)	(0.291)	(0.301)	(0.352)
Unemployment entry in November	-0.331	0.256	-0.383	-0.343
	(0.242)	(0.318)	(0.318)	(0.349)
Unemployment entry in December	-0.112	0.195	-0.826**	0.279
	(0.254)	(0.325)	(0.361)	(0.380)
Benefit receipt (ref.: no benefit receipt)				

	(1) Ologit Contact frequency with PES	(2) Mlogit Number of PES placement offers None	Many	(3) Binary logit Pressure
Unemployment insurance	0.696***	-0.477*	0.511	0.183
	(0.229)	(0.282)	(0.354)	(0.354)
Unemployment assistance	0.879***	-0.489	0.589	0.386
	(0.239)	(0.305)	(0.387)	(0.359)
Both types of benefits	0.738***	-1.199***	0.899**	0.737*
	(0.283)	(0.403)	(0.424)	(0.409)
Unemployment in last 2 years (ref.: 0 days)				
1-183 days unemployed	0.337**	0.214	0.730***	0.290
	(0.166)	(0.213)	(0.222)	(0.259)
184-366 days unemployed	0.792***	0.358	1.188***	0.262
	(0.236)	(0.311)	(0.311)	(0.364)
>366 days unemployed	1.190***	0.181	1.330***	0.071
	(0.337)	(0.439)	(0.453)	(0.550)
Days unemployed in last 5 years	-0.000	-0.000	-0.000	0.000
	(0.000)	(0.000)	(0.000)	(0.000)
Days employed in last 2 years	0.002***	0.001*	0.001	0.000
	(0.001)	(0.001)	(0.001)	(0.001)
Days employed in last 5 years	-0.000	-0.000	-0.000	-0.000
	(0.000)	(0.000)	(0.000)	(0.000)
Days of sickness benefit receipt in last 2 years	-0.002	-0.001	-0.007**	-0.001
	(0.002)	(0.002)	(0.003)	(0.003)
Days of sickness benefit receipt in last 5 years	0.001	0.002	0.002	0.001
	(0.001)	(0.002)	(0.002)	(0.002)
OLF-days in last 2 years	0.002**	0.000	0.002*	-0.001
	(0.001)	(0.001)	(0.001)	(0.001)
OLF-days in last 5 years	-0.001**	-0.001	-0.001**	0.000
	(0.000)	(0.000)	(0.000)	(0.001)
Last wage	-0.000	-0.000	-0.000	0.000
	(0.000)	(0.000)	(0.000)	(0.000)
Last job in 2009	-0.023	-0.517*	0.154	-0.275
	(0.251)	(0.300)	(0.339)	(0.348)
Last job in 2010	0.182	-0.451	0.620*	0.111
	(0.279)	(0.319)	(0.366)	(0.394)
Labour market entrant	0.752**	0.032	0.188	-0.837
	(0.337)	(0.390)	(0.487)	(0.585)
Previously in permanent employment	-0.065	0.062	0.220	0.024
	(0.140)	(0.185)	(0.194)	(0.201)
Previously in atypical employment	0.118	0.081	0.435*	0.215
	(0.183)	(0.251)	(0.257)	(0.267)
Previously in part-time employment	0.160	-0.079	0.058	0.189
	(0.162)	(0.201)	(0.227)	(0.243)
Previously working over time	0.061	0.135	-0.161	-0.019
	(0.126)	(0.166)	(0.172)	(0.180)
Involuntary job loss	0.081	-0.236	-0.029	0.004
	(0.121)	(0.161)	(0.165)	(0.179)
Industry affiliation (ref.: trade, agriculture, forestry, energy, water, transport, missing)				
Manufacturing	-0.221	0.230	-0.295	0.259
	(0.199)	(0.279)	(0.268)	(0.311)
Construction	0.038	0.321	-0.193	0.226
	(0.327)	(0.451)	(0.411)	(0.452)
Tourism	0.218	0.734**	0.902***	0.321
	(0.268)	(0.344)	(0.316)	(0.350)
Communication, insurance, properties	-0.010	0.328	-0.087	-0.233
	(0.228)	(0.342)	(0.365)	(0.437)
Freelance, academic and technical services	-0.183	0.737**	-0.023	0.600
	(0.266)	(0.368)	(0.380)	(0.417)
Other economic services	0.201	0.316	0.186	-0.180
	(0.224)	(0.317)	(0.293)	(0.346)
Public services	-0.119	0.438	-0.763**	0.222
	(0.206)	(0.273)	(0.328)	(0.323)
Other services	-0.519*	0.696**	-0.524	0.054
	(0.295)	(0.339)	(0.411)	(0.422)
Others	-0.205	0.521*	0.304	0.238
	(0.205)	(0.290)	(0.288)	(0.347)
Federal state (ref.: Vienna)				
Burgenland	0.487	-1.782**	-0.798	-0.257
	(0.532)	(0.704)	(0.692)	(0.838)
Carinthia	0.540	-0.715	-0.877	0.747
	(0.409)	(0.501)	(0.580)	(0.556)
Lower Austria	0.292	-1.469**	-0.345	0.285
	(0.453)	(0.613)	(0.615)	(0.661)
Upper Austria	0.273	-0.593	0.565	-0.353

	(1) Ologit Contact frequency with PES	(2) Mlogit Number of PES placement offers		(3) Binary logit Pressure
		None	Many	
	(0.430)	(0.578)	(0.584)	(0.603)
Salzburg	0.053	-0.186	0.155	1.028
	(0.513)	(0.619)	(0.640)	(0.666)
Styria	0.059	-0.422	-0.046	0.411
	(0.328)	(0.436)	(0.472)	(0.505)
Tyrol	0.155	-0.956*	-0.022	1.012
	(0.438)	(0.562)	(0.599)	(0.619)
Vorarlberg	-0.231	-1.716***	-1.870***	0.106
	(0.489)	(0.658)	(0.724)	(0.750)
Type of region (ref.: Rural region)				
Human capital-intensive region	0.279	-0.119	-0.147	-0.763***
	(0.182)	(0.236)	(0.242)	(0.277)
Real capital-intensive region	-0.215	-0.261	0.059	0.130
	(0.196)	(0.251)	(0.236)	(0.263)
Regional unemployment rate	-0.017	-0.146	-0.186*	-0.071
	(0.076)	(0.099)	(0.096)	(0.104)
Regional share of long-term unemployed (ref.: 0-1%)				
Regional share of long-term unemployed 1-3%	0.312	0.203	0.607*	-0.612*
	(0.244)	(0.300)	(0.346)	(0.346)
Regional share of long-term unemployed 3-5%	-0.004	0.948**	0.750*	-0.535
	(0.329)	(0.398)	(0.446)	(0.441)
Regional share of long-term unemployed >5%	0.028	1.421***	0.650	-0.314
	(0.359)	(0.458)	(0.494)	(0.501)
Constant	-1.140	0.707	0.774	0.115
	(0.917)	(1.213)	(1.201)	(1.334)
Observations	1,660	1,660		1,660
Pseudo R^2	0.777	0.794		0.780

Sources: ASSD, AUR, and survey data. Notes: Contact frequency with PES: low/medium/high. Robust standard errors in parentheses. *** $p<0.01$, ** $p<0.05$, * $p<0.1$.

Table 15: Determinants of the exit from unemployment to work
Binary logistic regressions of the exit to paid work until the survey date

	(1)	(2)	(3)
Search effort	0.017**	0.005	0.001
	(0.007)	(0.006)	(0.007)
Contact frequency with PES (ref.: low)			
Medium		0.220***	0.218***
		(0.033)	(0.033)
High		0.367***	0.397***
		(0.034)	(0.033)
Number of PES placement offers (ref.: few)			
No placement offer		0.130***	
		(0.028)	
Many		0.136***	
		(0.032)	
Pressure at placement offer receipt (ref.: no pressure)			
No offer			-0.020
			(0.030)
Little pressure			-0.026
			(0.055)
Much pressure			-0.035
			(0.052)
Threat of a benefit sanction			0.068
			(0.045)
Personal characteristics			
Woman	-0.020	-0.013	-0.006
	(0.029)	(0.027)	(0.027)
Age (years)	-0.004***	-0.002*	-0.002
	(0.001)	(0.001)	(0.001)
Education (ref.: at most compulsory school)			
Intermediate vocational school	-0.003	0.002	0.014
	(0.058)	(0.057)	(0.057)
Apprenticeship	-0.016	-0.015	-0.012
	(0.033)	(0.030)	(0.030)
Higher academic or vocational school	0.008	0.014	0.021
	(0.040)	(0.035)	(0.036)
Academic education	0.024	0.051	0.053
	(0.041)	(0.036)	(0.037)
Austrian citizenship	0.028	-0.004	-0.010
	(0.044)	(0.040)	(0.040)
Single	0.006	-0.009	-0.004
	(0.027)	(0.025)	(0.026)
Youngest child aged ≤3 years	0.029	0.024	0.025
	(0.046)	(0.043)	(0.042)
Youngest child aged 4-6 years	0.001	-0.007	-0.010
	(0.048)	(0.048)	(0.048)
Youngest child aged 7-12 years	0.083**	0.067*	0.076**
	(0.039)	(0.035)	(0.035)
Disabled	0.033	0.027	0.031
	(0.045)	(0.039)	(0.040)
Language skills (ref.: neither of both)			
German as mother tongue	-0.005	0.042	0.044
	(0.048)	(0.044)	(0.043)
German learnt from early age	0.011	0.028	0.028
	(0.056)	(0.053)	(0.053)
High work motivation	0.030	0.039	0.034
	(0.035)	(0.033)	(0.034)
Large social network	-0.030	-0.032	-0.038
	(0.037)	(0.034)	(0.035)
Large occupational network	0.173***	0.142***	0.153***
	(0.034)	(0.035)	(0.035)
Use of occupational online networks	-0.112***	-0.074***	-0.067**
	(0.032)	(0.028)	(0.029)
Lack of access to personal computer	-0.079	-0.048	-0.042
	(0.056)	(0.059)	(0.057)
Child care problems as search barrier	-0.067	-0.044	-0.045
	(0.053)	(0.047)	(0.049)
Other problems in the family as search barrier	0.058	0.051	0.059
	(0.054)	(0.052)	(0.050)
Physical problems as search barrier	-0.208***	-0.147***	-0.155***
	(0.036)	(0.034)	(0.035)

	(1)	(2)	(3)
Psychological problems as search barrier	-0.019	-0.029	-0.025
	(0.041)	(0.038)	(0.038)
Mobility constraints as search barrier	-0.043	-0.047	-0.045
	(0.039)	(0.036)	(0.037)
Financial problems as search barrier	-0.005	0.013	-0.003
	(0.036)	(0.032)	(0.033)
Month of unemployment entry (ref.: January)			
Unemployment entry in February	-0.061	-0.060	-0.066
	(0.049)	(0.046)	(0.047)
Unemployment entry in March	-0.048	-0.027	-0.034
	(0.046)	(0.044)	(0.046)
Unemployment entry in April	-0.113**	-0.082*	-0.081*
	(0.049)	(0.047)	(0.048)
Unemployment entry in May	-0.117**	-0.077*	-0.085*
	(0.046)	(0.044)	(0.046)
Unemployment entry in November	-0.057	-0.013	-0.025
	(0.050)	(0.046)	(0.047)
Unemployment entry in December	0.012	0.038	0.024
	(0.051)	(0.048)	(0.049)
Unemployment in last 2 years (ref.: 0 years)			
1-183 days unemployed in last 2 years	0.128***	0.086***	0.100***
	(0.032)	(0.032)	(0.032)
184-366 days unemployed in last 2 years	0.149***	0.074	0.091*
	(0.045)	(0.047)	(0.047)
>366 days unemployed in last 2 years	0.054	-0.051	-0.036
	(0.070)	(0.069)	(0.070)
Days unemployed in last 5 years	-0.000***	-0.000***	-0.000***
	(0.000)	(0.000)	(0.000)
Days employed in last 2 years	-0.000	-0.000	-0.000
	(0.000)	(0.000)	(0.000)
Days employed in last 5 years	0.000*	0.000***	0.000**
	(0.000)	(0.000)	(0.000)
Days of sickness benefit receipt in last 2 years	-0.001***	-0.001***	-0.001***
	(0.000)	(0.000)	(0.000)
Days of sickness benefit receipt in last 5 years	0.001***	0.001***	0.001***
	(0.000)	(0.000)	(0.000)
Days out of labour-force in last 2 years	0.000	-0.000	-0.000
	(0.000)	(0.000)	(0.000)
Days out of labour-force in last 5 years	-0.000	0.000	0.000
	(0.000)	(0.000)	(0.000)
Last wage	-0.000	-0.000	-0.000
	(0.000)	(0.000)	(0.000)
Last job in 2009	0.098**	0.102**	0.110**
	(0.049)	(0.047)	(0.047)
Last job in 2010	0.181***	0.167***	0.186***
	(0.055)	(0.055)	(0.055)
Labour market entrant	0.036	0.008	0.011
	(0.070)	(0.061)	(0.064)
Previously in permanent employment	-0.062**	-0.063**	-0.061**
	(0.031)	(0.029)	(0.030)
Previously in atypical employment	0.014	-0.006	0.000
	(0.038)	(0.038)	(0.038)
Previously in part-time employment	-0.028	-0.030	-0.038
	(0.036)	(0.033)	(0.034)
Previously working over time	-0.012	-0.018	-0.020
	(0.027)	(0.025)	(0.026)
Involuntary job loss	-0.061**	-0.062**	-0.064**
	(0.027)	(0.025)	(0.025)
Industry affiliation (ref.: trade, agriculture, forestry, energy, water, transport, missing)			
Manufacturing	-0.046	-0.027	-0.023
	(0.043)	(0.038)	(0.039)
Construction	0.156***	0.159**	0.167***
	(0.061)	(0.062)	(0.061)
Tourism	0.052	0.014	0.036
	(0.052)	(0.046)	(0.045)
Communication, insurance, properties	0.059	0.064	0.069
	(0.055)	(0.047)	(0.048)
Freelance, academic and technical services	0.037	0.043	0.050
	(0.059)	(0.049)	(0.049)
Other economic services	0.063	0.042	0.048
	(0.047)	(0.045)	(0.046)
Public services	-0.002	0.017	0.016

	(1)	(2)	(3)
	(0.047)	(0.041)	(0.044)
Other services	0.031	0.055	0.061
	(0.060)	(0.052)	(0.052)
Others	0.051	0.062	0.071*
	(0.047)	(0.042)	(0.043)
Province (ref.: Vienna)			
Burgenland	0.129	0.122	0.080
	(0.104)	(0.092)	(0.096)
Carinthia	-0.009	-0.046	-0.071
	(0.086)	(0.080)	(0.080)
Lower Austria	-0.026	-0.031	-0.059
	(0.091)	(0.085)	(0.087)
Upper Austria	0.132	0.108	0.096
	(0.088)	(0.078)	(0.080)
Salzburg	0.154	0.130	0.114
	(0.097)	(0.096)	(0.097)
Styria	0.018	0.011	0.000
	(0.068)	(0.064)	(0.064)
Tirol	0.043	0.027	0.006
	(0.086)	(0.081)	(0.083)
Vorarlberg	-0.021	0.005	-0.028
	(0.101)	(0.098)	(0.098)
Type of region (ref.: human capital-intensive region)			
Real capital-intensive region	0.064*	0.052	0.042
	(0.036)	(0.034)	(0.035)
Rural region	0.017	0.038	0.031
	(0.039)	(0.034)	(0.035)
Regional unemployment rate	0.005	0.012	0.005
	(0.015)	(0.013)	(0.013)
Regional share of long-term unemployed (ref.: 0-1%)			
Regional share of long-term unemployed 1-3%	0.078	0.045	0.051
	(0.048)	(0.046)	(0.047)
Regional share of long-term unemployed 3-5%	0.085	0.076	0.087
	(0.063)	(0.059)	(0.060)
Regional share of long-term unemployed >5%	0.066	0.050	0.068
	(0.070)	(0.065)	(0.066)
Observations	1,660	1,660	1,660
Pseudo R^2	0.208	0.307	0.293

Sources: ASSD, AUR, and survey data. Notes: Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1.