Impact of insecure employment trajectories on employers' hiring decisions in Switzerland

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1. Introduction

Biographical trajectories showing precarious job experiences at an early career stage are often believed to entail later difficulties in the labour market such as a reduced likelihood of finding a job or wage penalties. There is a rich body of literature investigating the so-called scarring effects of precarious job experiences from either the demand side or the supply side perspective. Within the Horizon2020 project "NEGOTIATE – Overcoming early job-insecurity in Europe" (http://negotiate-research.eu) we ask how recruiters judge candidates' unemployment experience and how their evaluations vary depending on mediating factors such as the individual's education or the requirements of the advertised job. Further, facing changes in the labour market and the growing flexibility in employment conditions, we are investigating effects of other forms of precarious labour market experiences that could also impact the hiring chances. The second question we ask in this study is how job hopping experience affects individual's labour market outcomes. We are investigating these questions employing a factorial survey design, where longitudinal information on unemployment and job hopping are provided in hypothetical CVs. Our approach has the potential to identify the effects of the selection process, excluding effects of self-selection of the applicants.

2. Theoretical framework

In the literature hiring is often described as a situation of imperfect information, in which the recruiters try to predict the qualities of applicants. Because it is difficult and costly to find out the applicants' qualities, recruiters often draw on visible cues or the so-called signals, upon which they may derive needed information (Spence 1973). Applicant's features such as education credentials, school grades, previous job titles or gender and ethnicity can be used as signals. Further, information can also be drawn from more implicit cues such as gaps in the CV or frequent changes in jobs. Studies investigating the signalling value of unemployment have found that unemployment can be associated with low motivation, human capital deprivation, low productivity, undesirable personality traits (Atkinson et al 1996; Bonoli 2014), and lowered job finding rates can be the consequence (Eriksson, Lagerström 2006). Hence, unemployment is believed to cause scarring in regard of future job finding chances (Arulampalam et al., 2000; 2001).

When studying the effect of unemployment, one needs to be aware that the unemployed are by no means a homogeneous group with similar features and comparable biographies. Also, the reasons for unemployment and forms of unemployment are diverse. Most studies on unemployment account for the duration of unemployment, and findings indicate that recruiters may evaluate unemployment experiences differently depending on the duration. A Swiss study has found evidence that interestingly employers recruiting for administrative assistant prefer short-term unemployed over the currently employed applicants (Oberholzer-Gee 2008). The same effect could be found in an US study, and the results suggest that employers might prefer currently unemployed because they could start working immediately. Further, the authors found that the call back rate decreases with increasing length of unemployment, but the decline eventually flattens out at the point of eight months and the impact of additional months afterwards becomes insignificant (Kroft, Lange and Notowidigdo 2013). Taking ascriptive features of the applicants into account, van den Berg and van

Ours (1996, 1999) found evidence that the duration dependence varies for different ethnic groups and between women and men in France and in the US.

Considering recruiters as gate-keepers for the labour market entrance, the interpretation of unemployment heavily depends on the features of the recruiting organisations and the job characteristics. It is therefore important to account for the demand side features when analysing consequences of unemployment. In this vain, Eriksson and Rooth (2014) compared recruitment dynamics for jobs of different skill levels in Sweden and have found that contemporary unemployment of at least nine months have negative impact in medium and low skill jobs but the same effect did not hold true in high skill jobs. In a British study focusing on possible relations between the recruiting company's size and recruiting behaviour, Atkinson, Giles and Meager (1996) could identify that irrespectively of the turn over rate larger companies are more likely to hire unemployed applicants than smaller companies. In contrast to the UK findings, in a Swiss recruiter study Bonoli (2014) found that respondents in larger companies tend to associate long-term unemployment with negative attributes more pronounced than respondents from smaller companies.

Duration dependence is an extensively studied subject investigated by supply as well as by demand side research. Most studies measure the effect of duration of unemployment typically on its own, or in varying combinations with timing of unemployment or with applicant's biological traits. However, there are other factors that might mediate the effect of unemployment experience that have been left out. Recruitment studies looking at the signalling effect of education have found evidence that recruiters draw on information about applicant's education as selection criteria (Arrow 1973; Di Stasio 2014). Although there are studies looking at how different types of education can be followed by higher or lower chances of later unemployment (Müller 2005; Shavit, Müller 2010), what remains largely unexplored is how the effect of unemployment experience on later employment chances is mediated by education. Only few studies have attempted to understand the role education in this context. In a field experiment Kroft, Lange and Notowidigdo (2013) varied the level of education of the fictious job candidates alongside their unemployment duration. What remains unexplored in their study is the mediating effect of the type of education.

In this paper we suggest to look at education more differentiated, and we measure not only how well the applicant's level of education but also the occupational specificity of education, which we will refer as the type of education in this article, matches the job characteristics and requirements. Depending on the fit of the match, we assume the effect of unemployment spells on later employment rate to vary. Further, previous job experiences are also considered as signals recruiters tend to draw on. Eriksson and Rooth (2014) have found that the effect of unemployment experience on job finding rate can be mediated by the individual's job experiences by controlling for the total duration of work experience. As a next step, it would be interesting to consider not only the duration of work experience but also the quality of previous jobs and to test how different types of job experiences may influence the effect of unemployment experience on hiring outcome. Analogously to the applicant's education, we differentiate between the level and the type of previous job experience. The level is proxied by employment experience in low, medium or high skilled occupations, and the type of job experience is the occupational specificity of job experience (c.f. section 3.3 "Experimental variables"). We measure how well the applicant's job experience matches the job's characteristics and requirements. In this study we test the effect of different durations and timings of unemployment on the assessment of CVs by recruiters while taking account of the candidate's level and type of both education and job experience as mediating factors:

H1a: Recruiters rate CVs showing unemployment experience lower if the applicant's *level* of education and *level* of job experience do not match the characteristics and requirements of the job than if the respective information in CVs do match the characteristics and requirements of the job.

H1b: Recruiters rate CVs showing unemployment experience lower if the applicant's *type* of education and *type* of job experience do not match the characteristics and requirements of the job than if the respective information in CVs do match the characteristics and requirements of the job.

The effect of forms of precarious labour market experiences other than unemployment on later job perspectives has drawn less attention in recruitment studies. Yet, facing developments in a broader social context such as globalisation or technological innovations in general, and changes in the labour market such as the processes of redistribution of workforce across sectors or the increase of flexibility in working hours and work places in particular, there is need to understand the changing qualities in employment conditions and its impact on the society. Instead of understanding the employment status in dichotomous terms as employed or unemployed it would more fruitful to investigate different forms of insecure employment and their consequences in regard of future employment possibilities. In debates about unemployment insurance regulations or about active labour market policies the issue about insecure employment conditions is indeed a hot topic. There are studies investigating post-unemployment job conditions and suggest that different forms of unemployment policies can impact the sustainability and quality of the subsequent jobs. Some unemployment measures may encourage the unemployed to take up the next best job, which might not match his or her previous education or employment experience, or which might involve fix term contracts, and the unemployed would be facing new unemployment again (Arni et al. 2012; Bonoli, Champion 2014; Duell, Tergeist 2010). Although insecure employment conditions as a consequence of earlier unemployment or of unemployment policies are well studied, studies investigating what consequences insecure employment experiences may themselves cause are rare. In this study we are addressing the issue of employment insecurity and focus on the effect of job hopping on later labour market outcome. Analogously to the unemployment hypotheses we assume:

H2a: Recruiters rate CVs showing job hopping experience lower if the applicant's *level* of education and *level* of job experience do not match the characteristics and requirements of the job than if the respective information in CVs do match the characteristics and requirements of the job.

H2b: Recruiters rate CVs showing job hopping experience lower if the applicant's *type* of education and *type* of job experience do not match the characteristics and requirements of the job than if the respective information in CVs do match the characteristics and requirements of the job.

3. Methods

3.1 Methodological design

The use of longitudinal data is widespread in labour market studies when investigating individual career trajectories. Longitudinal data provide rich information about the individuals' socio economic backgrounds, allow for observations of micro level changes within the individuals' biographies (Bäckman, Nilsson 2016; Gregory, Jukes 2001) as well as of macro level changes such as policy revisions, demographic shifts or economic cycles (Blanchard, Wolfers 2000; Burgess et al. 2003; De Vreyer et al. 2000). Despite the many advantages of longitudinal data, it is difficult to draw causal conclusions about the earlier job market experiences and later job market outcomes, because longitudinal data on employment trajectories alone does not allow to properly distinguish between the effects of applicants' self-selection and of recruiters' selection, since recruiters and the employing organisations are left out of the picture, and different job search behaviour (Blau, Robins 1990) or job accepting behaviour (Abraham et al. 2013) are not accounted for. Many researchers have suggested that understanding the selection process in organisational recruitments can contribute to better comprehension of individuals' trajectories and the related employment outcomes (Devins, Hogarth 2005; Salognon 2007).

Recruiter surveys in contrast allow researchers to collect rich information about the recruiters and organisational recruitment process. In order to understand recruiters' attitude toward the unemployed, Atkinson et al. (1996) have collected detailed information of about 800 recruiters in UK and interviewed them about their recruitment practices and their perception of the unemployed. Similarly, Bonoli (2014) questioned employers about their view on the long-term unemployed and interpreted the results against the features of the hiring organisations. Despite the advantages of recruiter surveys, they are vulnerable in terms of social desirabilty bias, especially when it comes to scarring effects. Further, recruiter surveys may easily collect recruiters *opinions* on applicants with given characteristics, whereas, in practice, it is hardly possible to gather data of 'real' applicants pools and recruiter decisions across a representative range of organisations with vacant positions. Hence, survey based models of recruiting are expected to suffer from desirabilty and omitted variable bias.

A factorial survey experiment allows to circumvent some of these methodogical challenges. In particular, it enables us to collect detailed data about recruiting organisations and vacant positions and, at the same time, to conduct a field experiment based on fictional applications and selected real-world vacancies. The advantage of sampling for real-world vacancies is twofold: First, they provide information about the job characteristics and about the recruiting organisations. Second, working with real recruiters hiring for current positions increases the validity of the design. With this design, we minimise desirability bias and unobserved heterogeneity both on the supply and the demand side. A factorial survey, first introduced by Rossi (1951), is a multidimensional experiment design with implemented vignettes representing hypothetical cases (Auspurg, Hinz 2015; Jasso 2006; Rossi, Anderson 1982). This method has been applied in labour market research investigating job search and job accepting behaviour (Abraham et al. 2013; Auspurg, Gundert 2015) or evaluating wage models of organisations (Weibel et al. 2010). In recruitment research factorial survey is however not yet an established method and has only recently gained attention (Di Stasio 2014; Di Stasio, Gërxhani 2015; Humburg, van der Velden 2015). One of the main advantages of field experiments in general is that compared to pure experiment, the respondents are in their natural surrounding rather than in a laboratorial setting. In particular, in contrast to other more popular forms of field experiments applied in recruiter studies, such as conjoint or audit studies, in which researchers usually vary only one or few applicant's characteristics as the experiment variable(s), in factorial survey experiments it is possible to vary multiple applicant features. This allows to measure the main effect and interaction effects of variables and to create a pool of hypothetical candidates with different combinations of individual characteristics. Real vacancies across the five occupational fields of mechanics, finance, gastronomy, nursing and information technology (IT) in German-speaking Switzerland are sampled for this study.

In our design recruiters are asked to rate the short CVs of ten hypothetical applicants – the vignettes – on a scale from 0 to 10 in regard of their chances to be hired for the position he or she is currently recruiting for. Each vignette contains an intuitively accessible graphical representation of one fictional short CVs (example vignette in appendix). All hypothetical applicants are Swiss natives and have completed their formal education five years ago, whereas other characteristics systematically vary according to the experimental design (see 3.3). The vignette experiment is embedded in a questionnaire, in which we ask questions about the job characteristics, the features of the hiring organisation, information about the recruitment practice and details about the recruiter.

3.2. Sampling

Aiming to achieve high internal and external validity we chose to sample for recruiters currently staffing for open vacancies in German-speaking Switzerland. The recruiters were asked to evaluate the vignettes and to answer the survey questions always with reference to the specific job position they are currently recruiting for. The five the occupational fields mechanics, finance, gastronomy, nursing and IT, within which vacancies were sampled, provide low, middle and high skill jobs, gender

neutral and gender biased occupations. Based on the four-digit ISCO codes we have developed sampling criteria for each occupational field in order to narrow down the occupation titles aiming to avoid implausible matches with the vignettes. Depending on the fit with the vignette features, the sampled occupation titles are rated with a number – the fitting index – which can be used as a variable in the data analysis when evaluating the vignette ratings. The selected job advertisement communication channels are general online job portals, which altogether reach a coverage of at least 95 per cent of the total number of all general online job portals. Also, vacancies from company websites that are published on the local unemployment agencies websites are included in the sampling. The main sampling was carried out on one day by the Swiss Job Market Monitor, and all advertised jobs in German-speaking Switzerland that have been posted within the previous 14 days in preselected job portals were collected. A second sampling was carried out two weeks later, in which all job advertisements that have been posted within the previous seven days were collected. Based on this sampling we contacted 2'118 respondents, out of which 739 (35%) respondents started surveys and 580 (27%) respondents completed the survey. With this sampling strategy a representative sample of vacancies reflecting the Swiss labour market situation is supposed to be achieved. Table 1 summarises some company-level features of the sample.

Table 1 • Frequencies of features of the recruiting organizations (experimental variables)*

Features of recruiting organizations	Frequencies	Percent
Occupational field		
Mechanic	129	17.46
Finance	126	17.05
Nursing	205	27.74
Gastronomy	115	15.56
IT	164	22.19
Firm size (number of employees)		
Less than 50	82	13.97
50 to 249	248	42.25
250 to 999	113	19.25
1'000 or more	130	22.15
External recruitment agency		
Recruitment agency	174	25.14
No agency	501	72.40
Other	17	2.46
Sector		
Public	120	20.41
Private	438	74.49
Other	26	4.42

* The percentages of single variables may not add up to 100% due to missing cases.

3.3 Experimental variables

Aiming to measure the signalling effect of precarious labour market experiences and mediating effects of education and employment experiences we created a seven dimensions experimental design with the experimental variables *type of education, level of education, employment experience, duration of unemployment experience, timing of unemployment experience, job hopping experience* and *gender*. Age, nationality as well as the total time spent in the labour market (employed or unemployed) are held constant. The variable *type of education* reflects whether the applicant is trained in one of the five defined occupations or in an unrelated occupational field. The variable has therefore the two levels *education matching the occupational field* of the sampled job and *education not matching the occupational field*. In order to find suitable education credentials for the level *Education matching the occupational field* for each of the five occupational fields we used a Swiss

career counselling webpage, which provides detailed information about the required education and skills for occupations in Switzerland. The level *Education not matching the occupational field*s is operationalised by education credentials of the retail trade sector, which we apply across all occupational fields. The variable *level of education* has the three levels lower secondary, *upper secondary* and *tertiary degree*. In order to reduce implausibility within the applicants' trajectories we have linked the variable *employment experience* with *type of education* and *level of education*. In other words, if the *type of education* is *matching the occupational field*, the *employment experience* is also *matching the occupational field,* and *education not matching the occupational field* is followed by *employment experience not matching the occupational field.* Accordingly, the skill level of *employment experience* reflects the *level of education* of the vignette. For example, a candidate with a BA degree (*tertiary degree*) in mechanical education (*education matching the occupational field)* would show job experience as a leading mechanic (*high skill level job matching the occupational field*). In addition, we add *call centre agent* as an extra level for the dimension *employment experience* to proxy precarious job experience, whereby all vignettes with *call centre* experience have *education matching the occupational field*. To test the impact of different unemployment durations, we proxy short unemployment with *10 months* and long unemployment with *20 months*. To measure whether timing of unemployment matters, our vignettes show unemployment experience either *directly after graduation*, *between jobs* or *currently (at the moment of application)*. Further, the candidates can either have *job hopping* experience or not. Finally, our design is gender sensitive.

4. Data analysis and preliminary results

We analysed the experimental vignette variables employing random effects multi-level linear regression models. Every respondent rated multiple vignettes, hence we have to account for clustering at the level of respondents. Our analytical strategy accounts for this by modelling the nested nature of our data and employing cluster robust standard errors. In the Model 1 we regress vignette evaluations on unemployment and gender. The results show that the negative impact of (any) unemployment experience on vignette rating is significant on average (Table 2), while there is no evidence for an effect of the applicant's gender on the vignette rating. In Model 2 we test for the effect of different unemployment durations on the vignettes ratings. The negative coefficient is slightly stronger for longer unemployment spells. But when testing for the difference between the effects of short and long unemployment, the results are found to be insignificant. In Model 3 we add the timing of unemployment. In accordance with Eriksson and Rooth's (2014) findings we could find no significant negative effect of unemployment directly after graduation independent of the duration of the unemployment spell. Also, no significant negative impact of short current unemployment could be found. But if the current unemployment spell lasts as long as 20 months, recruiters tend to assign lower ratings. The lowest ratings can be observed in trajectories where unemployment spells occur *between* jobs. So far our results are more or less consistent with findings of previous studies. In Model 4, we add the level of education and job experience of the hypothetical candidate. All negative effects of unemployment become insignificant except for unemployment spells that occur between jobs, where short as well as long unemployment are still associated with lower ratings, but the negative effects tend to be smaller than in the previous models. It becomes obvious that the level of education and whether the candidate has worked accordingly in low, middle or high skill jobs plays a crucial role in the vignette rating: Education and job experience on the middle and higher level are assessed more positively compared to low level education and job experience. H1a was corroborated. Finally, we add type of education and work experience and their match with the level and type of the advertised job in the regression (Model 5). All effects associated with unemployment become insignificant. *Call centre agent* vignettes are rated significantly lower than the reference group, although the former also show education matching to the job requirements. Work experience seems to be an important signal in the recruiters' eyes. Our results suggest that relevant type of education and work experience can compensate the negative effect of unemployment to a great degree. H1b is thus supported

Table 2* [1]

	Model 1	Model 2	Model 3	Model 4	Model 5
Constant	2.241	2.242	2.236	1.960	2.440
Unemployment (ref.: no unempl)					
Unemployment experience	-0.236 (0.002)***				
Gender (ref. female)					
Male	0.064 (0.307)	0.065 (0.299)	0.066 (0.288)	0 .080 (0.203)	0.072 (0.246)
Duration of unemployment (UE) (Ref.: No unemployment)					
10 months of UE		-0.198 (0.018)**			
20 months of UE		-0.276 (0.001)***			
Duration and type of unemployment (Ref.: No unemployment)					
10 months of UE after graduation			-0.083 (0.461)	-0.033 (0.771)	0.050 (0.662)
20 months of UE after graduation			-0.204 (0.074)	-0.172 (0.131)	-0.030 (0.800)
10 months of UE between jobs			-0.361 (0.001)***	-0.312 (0.005)***	-0.216 (0.051)
20 months of UE between jobs			-0.329 (0.003)***	-0.271 (0.014)**	-0.126 (0.261)
10 months of current UE			-0.127 (0.263)	-0.070 (0.537)	0.047 (0.681)
20 months of current UE			-0.270 (0.016)**	-0.205 (0.070)	-0.034 (0.770)
Level of education and job experience (Ref.: Lower secondary, low skill job)					
Upper second educ., middle skill job				0.350 (0.000)***	
Tertiary education, high skill job				0.304 (0.000)***	
Type of education and job experience (ref.: Education and job experience matches job requirement**)**					
Education and job experience does not match job requirement					-0.688106 (0.000)***
Education matches job requirement, job experience as call centre agent					-0.460257 (0.000)***
Number of vignettes	6 338	6 338	6 338	6 338	6 338

* R-Square in parentheses.

** $p < 0.05$. *** $p < 0.01$.

[1]

In the next set of models, we test how job hopping impacts recruiters' ratings (Table 3). First, we regress the vignette rating on *job hopping* and *gender* (Model 6). In line with our assumption, frequent change of jobs is evaluated negatively while gender has no significant effect on vignette ratings. Second, when we control for unemployment experience in Model 7, the negative effect of job hopping becomes less strong but is still significant. When we control for *level of education and job* (Model 8) job hopping coefficient is reduced from -0,171 (Model 6) to -0,150 but remains significant. The level of education and the level of job play a significant role as mediating factors when assessing candidates with job hopping experience. In a separate calculation (not shown), where we have included both *unemployment* and *level of education and job* in the regression, the *job hopping* coefficient becomes insignificant (p=0.052). Our results provide evidence for H2a. At last, the negative effect of job hopping becomes insignificant, when *type of education and job* are added in Model 9. The results show that job-adequate education and job experience plays an important role when recruiters are assessing candidates with CVs showing frequent job changes. This supports H2a.

Table 3*

	Model 6	Model 7	Model 8	Model 9
Constant	2.141	2.277	1.886	2.440
Job hopping (ref.: no job hopping) Job hopping experience	-0.171 (0.007)***	-0.137 (0.033)**	-0.150 (0.017)**	-0.086 (0.179)
Gender (ref.: female) Male	0.055 (0.381)	0.061 (0.326)	0.070 (0.276)	0.066 (0.287)
Unemployment (ref.: no unemployment) Unemployment experience		-0.201 (0.010)**		
Level of education and job experience (Ref.: Lower secondary, low skill job) Upper secondary educ., middle skill job Tertiary education, high skill job			0.364 (0.000)*** 0.316 (0.000)***	
Type of education and job experience (ref.: Education and job experience matches job requirement**)** Education and job experience does not match job requirement Education matches job requirement, job experience as call-centre agent				-0.689 (0.000)*** -0.458 (0.000)***
Number of vignettes	6338	6338	6338	6338

* R-Square in parentheses.

** $p < 0.05$. *** $p < 0.01$.

5. Outlook

In the models presented in this paper we have included vignette variables to explain the recruiters assessment of CVs. We have proxied the fit between the vignette profiles and the job profiles with the vignette variables *level of education and job* and *type of education and job* in Model 5 and Model 9. However, with *level of education and job* we can only test how the rating is affected by the candidate's education and skill level, without considering the actually required education and job experience, hence, we were not able to test how the rating is affected by the fit between the candidates' CV and the real job profile. In future analyses, we will draw on the survey items that provide information about the required education and work experience for the advertised position as well as on the above mentioned fitting index, which we have generated during the sampling process.

A possible criticism addressing our data set could be raised when considering that we do not have data about the applicants pools of the recruiting organisations. One could argue that some of the differences in vignette ratings between organisations could result from organisation specific differences between the overall quality of the applicants pool of each organisation and the qualities of our vignettes. Hence, unobservable heterogeneity can occur at this level, for which we cannot control. This problem is alleviated to a certain degree given that we created a hypothetical applicants pool of ten job candidates for each recruiter, in which every vignette stands in a competitive relation to the others. Also, one could assume that with higher job requirements the quality of the applicant pool increases. Since we have information on the education and job experience requirements, we are able to control for some of the unobservable heterogeneity.

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