

Article

# Finding a job after unemployment—education as a moderator of unemployment scarring in Norway and German-speaking Switzerland

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## Abstract

Using data collected with a factorial survey experiment in Norway and Switzerland, we analyze how employers react to unemployment spells when screening job applications. Our focus is on whether unemployment scarring varies depending on the applicants' level of education and the duration and timing of the unemployment spell. We find unemployment scars of similar size in the two countries. Interestingly, education moderates the strength of unemployment scarring: in the Swiss context, graduates from vocational education and training (VET) programs are the most severely affected by unemployment, even years after regaining employment; this is not the case in Norway. We contribute to the unemployment scarring literature and to comparative scholarship on school-to-work transitions by exposing a trade-off of dual VET systems, which are known to provide a safety net from unemployment. Our findings show that these same systems can cause scars that are particularly long-lasting to VET graduates who fall into unemployment.

**Key words:** unemployment scarring, duration dependence, labor market, school-to-work transitions, factorial surveys, vocational education

**JEL classification:** J64/E24 Unemployment, M51 Firm Employment Decisions

## 1. Introduction

A decade after the Great Recession, the economies of most countries have been hit by another blow, with the global pandemic of COVID-19 causing mounting levels of unemployment and stalling economic growth. The bumpy career-start experienced by many young labor market entrants during economic downturns can have long-lasting 'scarring effects' on their future employment chances (Schmillen and Umkehrer, 2017). Lack of work

experience and less resourceful networks makes them especially vulnerable to unemployment (Bell and Blanchflower, 2011). In turn, spells of unemployment are associated with lower chances to re-enter employment, lower job quality after re-entry, lower wages or a combination of these outcomes (e.g. Gangl, 2004; Dieckhoff, 2011).

Among youth, the likelihood of being unemployed varies with educational attainment. In particular, vocational education and training (VET) facilitates the matching between qualifications and jobs, thus providing a safety net from unemployment, especially in countries where VET is standardized and targeted to specific occupations (Levels *et al.*, 2014; Bol *et al.*, 2019).<sup>1</sup> Positive labor market returns to vocational education are likely due to its effectiveness in providing students with occupation-specific skills and direct contacts with employers, although existing studies assume rather than directly test these mechanisms (see Blommaert *et al.*, 2020 for a review of this literature).

While the role of (vocational) education in enhancing youth employability has been studied extensively, its impact on the re-employment chances of youth who have experienced early-career job insecurity has received little attention. Similarly, from a policy perspective, national governments have preferred to focus on preventative measures to reduce the level of youth unemployment in a given country rather than on coping measures to deal with its long-term scarring effects. One such policy is the increase of funding for vocational education (Busemeyer *et al.*, 2018), under the assumption that youths equipped with occupation-specific skills are less likely to experience job insecurity in the first place (Chung *et al.*, 2012). At the same time, structuring vocational training with tight links to the occupational structure also ‘implicitly creates a system of winners and losers’ (Bol *et al.*, 2019, p. 300). As shown by Bol *et al.* in a country-comparative analysis, the earnings premium for graduates working in occupations that match their qualifications are especially large in countries with occupation-specific education systems, like Germany; equally large, however, are the penalties for mismatched graduates, who can be considered the economic losers of the system.

In our study, we extend this reasoning to unemployment scarring. We bridge two strands of literature that have developed in parallel—studies on unemployment scarring on the one hand, and studies on school-to-work transitions, on the other. We test whether unemployment scarring effects depend on the educational attainment of the applicant and the duration and timing of the unemployment spell. We compare two countries with markedly different skill-formation systems, Norway and the German-speaking region of Switzerland (henceforth referred to as Switzerland).<sup>2</sup> The Swiss education system is characterized by a highly

- 1 VET is typically provided as part of secondary or post-secondary education. Although its specific form, financing and organization differ across countries, its defining characteristic is the provision of applied, practical training geared towards specific occupations.
- 2 Switzerland has four official languages. We restricted our focus to the German-speaking region of Switzerland, which is also the largest one, accounting for 63.5% of the Swiss population (Bundesamt für Statistik, 2020). The workforce of the German-speaking region is larger than that of the other three language regions (French, Italian and Romansh) combined. More importantly for our argument, the German-style dual VET is more predominant in the German-speaking region of Switzerland than in the rest of the country (SERI, 2016). Note that the same factorial survey was also administered in Bulgaria and Greece. We only focus on Norway and Switzerland in this study because this comparison provides a cleaner test of our hypotheses. In Greece and Bulgaria, the very high NEET rate amongst young persons at the time of the data collection (22.4% and 22.2% respectively; NEET rate for the same age group in Norway was 7.1% and in Switzerland 7.5%) could have led employers to

standardized and occupationally-focused VET system at the upper-secondary level that alternates learning in school with practical training at the workplace (also called a dual system). By comparison, the Norwegian education system is less strongly tracked and offers a more balanced mix of general and vocational education (Bol and Van de Werfhorst, 2013; Reisel, 2013). Norway and Switzerland are similar in many other respects: they are small-sized economies, have experienced a similar level of educational expansion (OECD, 2016), and relatively low youth unemployment rates by international standards (EUROSTAT, 2019).

We expect spells of unemployment to be especially scarring for Swiss VET graduates: we reason that, because in Switzerland vocational education is known to have a protective effect against unemployment, VET graduates who do experience a spell of unemployment are likely to be perceived by employers as the economic losers of the system and face relatively high barriers to re-enter employment. Furthermore, VET training in Switzerland is highly occupation-specific and might expose those who fall into unemployment to a higher risk of skills obsolescence compared to VET graduates trained in Norway, where VET programs are relatively more geared to providing students with general skills.

We use data gathered from a cross-national factorial survey experiment (FSE) administered to recruiters who were advertising job openings at the time of the study. FSEs use vignettes to elicit respondents' judgments on a situation of interest. In the vignettes, we varied characteristics of hypothetical job applicants, including their level of education, experience of unemployment and the duration and timing of the unemployment spell. Employers were asked to state their intended hiring preferences for each of the hypothetical candidates. With this design, we can focus on demand-side scarring effects resulting from employers' screening preferences, and rule out supply-side scarring effects due to job seekers' search behavior.

Our findings reveal interesting cross-national differences in scarring effects. While, on average, unemployment scars are of comparable size in the two countries, education moderates unemployment scarring in line with our expectations: those expected to be the most employable are also the ones most scarred by a spell of unemployment, namely, upper-secondary VET graduates in Switzerland. The scars they bear are both severe and long-lasting, as we show they were penalized even for unemployment spells that occurred in the past and were followed by re-entry into the labor market. These findings contribute to the policy debate on youth employability by pointing to an important trade-off of dual VET systems: While these are often praised for facilitating smooth school-to-work transitions, we show that the same systems are also particularly rigid toward youth experiencing early-career job insecurity.

### 1.1 Theoretical framework: employer-driven unemployment scarring

Sociological studies have found evidence that employers use information on unemployment as a negative filter when screening job applications (Bills, 1990; Van Belle *et al.*, 2018). In particular, employers are suspicious of lengthy periods of time that are unaccounted for and often disqualify job candidates with a patchy employment record. Two theoretical perspectives, human capital and signaling theory, provide different explanations as to why

use stricter hiring criteria given the excess supply of labor (Eurostat, 2019). Moreover, the different labor market institutions of the two Southeastern European countries and their greater reliance on informal recruitment would likely muddle the cross-national comparison of the results.

employers may be reluctant to hire applicants who ever experienced a spell of unemployment. According to human capital theory (Becker, 1964), work is an opportunity to gain knowledge and skills (i.e. human capital). Being unemployed is thus a foregone chance to gain human capital. During times of inactivity, previously learned skills could even atrophy or lose labor market value and become obsolete (Acemoglu, 1995; Van Loo *et al.*, 2001). From the perspective of signaling theory (Spence, 1973), employers face a situation of information asymmetry in the hiring process and rely on observable cues, or signals, to infer the productivity of applicants and select the most promising ones. Employers are often reluctant to hire people with interrupted employment trajectories as they consider unemployment a signal of low ability or low motivation (Lockwood, 1991; Van Belle *et al.*, 2018). Both, human capital theory and signaling theory lead to the hypothesis.

*Hypothesis 1: In Norway and Switzerland, applicants who have experienced a spell of unemployment in their career have lower employment chances compared to those who have had uninterrupted employment records.*

## 1.2 Education as a moderator of unemployment scarring

Education can moderate the severity of unemployment scarring for at least two reasons. First, because different types of skills deteriorate at a different pace. Second, because the signal of educational credentials can interact with the signal of unemployment. These explanations correspond to human capital theory and signaling theory, respectively.

Human capital theory describes skills depending on their specificity (Becker, 1964): while general skills, such as literacy, math and information, communication and technology (ICT) skills, are not tied to any given workplace and can be used in a variety of firms, specific skills are much less transferable. As specific human capital is less attractive for other firms, investment in specific skills exposes workers to higher labor market risks: in the event of job loss, skill specificity makes them vulnerable to long spells of unemployment.

Compared to general education, vocational education provides relatively more specific skills, either in dual programs that alternate learning in school with workplace-based training (like in Switzerland) or in school-based vocational programs (like in Norway). One additional risk associated with specific skills is that of skill obsolescence: specific skills typically wear or deteriorate faster than general skills and are more easily affected by technological innovations, changes in occupational demands or in the organization of work (Van Loo *et al.*, 2001; Krueger and Kumar, 2004). VET graduates trained in workplace-based systems, like the Swiss one, should be exposed to a relatively higher risk of skill obsolescence compared to VET graduates trained in school-based systems, where the mix between specific and general skills is more balanced (Mincer and Ofek, 1982; Hanushek *et al.*, 2017). General skills, for their very nature, are more transferable and more durable, allowing workers to adapt to fluctuations in skill demands and technological change. However, the empirical evidence on the relationship between skill specificity and employees' vulnerability to skill obsolescence, and its cross-national variation, is mixed (cf. Forster *et al.*, 2016; Hanushek *et al.*, 2017; Rözer and Bol, 2019).

Drawing on the political science literature, we observe that a dichotomous distinction between general and specific skills might be too simplistic to gage the real portability of skills across firms (Busemeyer, 2009). In some countries, such as Germany, Austria and

Switzerland, employers jointly coordinate dual VET systems and actively take part in the design of VET curricula and the provision of training. In these systems of collective skill formation, VET graduates obtain occupation-specific skills that are certified in nationally standardized occupational profiles, agreed upon with the tripartite involvement of employers, trade unions and the government. As a result, vocational qualifications obtained in dual VET systems are a reliable signal for future employers and are widely portable across firms within a given industry (Busemeyer, 2009; Di Stasio and Van de Werfhorst, 2016). VET graduates trained in dual systems are expected to hit the ground running upon graduation, avoiding unemployment and unskilled jobs (Shavit and Müller, 2000). In comparative studies on school-to-work transitions, indeed, patterns of labor market entry tend to be smoother in vocationally oriented education systems, with the dual VET showing more efficiency than the school-based option (Breen, 2005; Müller, 2005; Levels *et al.* 2014). A recent meta-analysis confirmed that vocational specificity positively affects labor market integration, especially when considering job search and avoidance of unemployment as the outcome variables (Blommaert *et al.*, 2020). Following the signaling explanation, in systems with high vocational specificity VET graduates who fall into unemployment may be perceived as especially lacking in productivity, motivation, trainability or some other unobservable trait that is important to the employer (Van Belle *et al.*, 2017).

Both Norway and Switzerland have well-developed VET systems at the upper-secondary level (OECD, 2018), but with markedly different structures. In Switzerland, the dominant form is the dual VET system organized around apprenticeship schemes in which students work 2–3 days a week at one firm besides attending classroom education. Compared to Switzerland, enrollment rates in the Norwegian dual VET are lower (50% and 17%, respectively; OECD, 2018), employers are less involved in training upper-secondary VET students, and pathways from vocational tracks to specific occupations are less strongly institutionalized. Compared to countries in continental Europe more generally, the Nordic countries invest more heavily in public education, which is associated with a higher level of general skills (Iversen and Stephens, 2008).

Combining findings from the school-to-work transition literature and the unemployment scarring literature, we expect that education moderates the severity of unemployment scarring. From a signaling perspective, assuming that Swiss employers are aware of the high employability of upper-secondary VET graduates, unemployment should be a particularly negative signal for this group. Compared to VET graduates, a bumpy career start may be perceived as less of a red flag for tertiary graduates, as their transition into the labor market is known to be relatively less smooth (Imdorf *et al.*, 2017). From a human capital perspective too, VET graduates in Switzerland, with their highly occupation-specific skill set, are the most vulnerable to the risk of skills obsolescence. In the Norwegian context, in contrast, unemployment is less of a negative signal for VET graduates, and the more balanced mix of general and specific skills should offer VET graduates more flexibility in adapting to changing skill demands and workplace contexts. Both signaling and human capital theories lead us to expect that:

Hypothesis 2a: *In both countries, unemployment scarring is stronger for upper-secondary VET degree holders than for tertiary degree holders.*

Hypothesis 2b: *In Norway, unemployment scarring for VET degree holders, compared to tertiary degree holders, is less severe than it is in Switzerland.*

### 1.3 The duration of unemployment spells

Next, we examine whether education groups are affected differently by unemployment spells of varying duration. Several studies in labor economics have shown that the exit rate from unemployment decreases the longer the unemployment spell—a phenomenon known as negative duration dependence (Blanchard and Diamond, 1994). However, there is little agreement regarding the threshold, exceeding which, the chances of finding a job would start dropping sharply. Findings vary from a minimum of 8 and 9 months in the USA (Kroft *et al.*, 2013) and Sweden (Eriksson and Rooth, 2014) to spells of at least 18 months in Switzerland (Oberholzer-Gee, 2008). In the USA, Nunley *et al.* (2017) and Farber *et al.* (2016) found no relationship between call-back rates and unemployment duration, using spells of at most 12 months in their design.

Longer periods of unemployment may coincide with periods of technological innovations, changes in skills demands and work structures. From a human capital perspective, people with general skills can more flexibly adapt to such changes than people with specific skills. Therefore, we should find stronger duration dependence for Swiss upper-secondary VET graduates than for tertiary degree holders. In Norway, human capital depreciation for VET graduates should be less problematic, given the more balanced mix between occupation-specific and general skills within upper-secondary vocational education. We hypothesize that:

*Hypothesis 3: Only in Switzerland, negative duration dependence is more pronounced for upper-secondary VET degree holders than for tertiary degree holders.*

Again, this hypothesis could also be derived from a signaling perspective: the higher portability of occupation-specific qualifications in the Swiss context should facilitate re-entry into employment after job loss, thus reducing the length of the unemployment spells. In this context, the long-term unemployed may be perceived as negatively selected.

### 1.4 The timing of unemployment

Lastly, we examine the timing of unemployment. The importance employers attach to unemployment when making hiring decisions can vary depending on the point in time when the unemployment spell occurs. Drawing on both human capital theory and signaling theory, we expect earlier unemployment to have a weaker effect than a more current episode of unemployment. From a human capital perspective, previously lost human capital can be regained during post-unemployment work. From a signaling perspective, employers can also find reassurance in the fact that other employers have hired a previously unemployed candidate (Oberholzer-Gee, 2008). Consistent with this argument, Eriksson and Rooth (2014) show that 1 year of subsequent work experience can undo the negative effect of 1 year of unemployment.

We then test the difference between the scarring effect of past and current unemployment spells across education groups. In Switzerland, due to the expectation of uninterrupted career trajectories for VET graduates, unemployment scarring should persist even for workers who have had a chance to regain skills in post-unemployment jobs. This should not be the case for tertiary graduates, as the same degree of career continuity is not expected of them. In Norway, given the less institutionalized paths from VET programs to specific

occupations, past unemployment can be considered a noisier signal than current unemployment, for both upper-secondary VET and tertiary degree holders. We hypothesize that:

*Hypothesis 4: Only in Switzerland, past unemployment has a stronger scarring effect on VET degree holders than on tertiary degree holders.*

### 1.5 Data and method: an FSE with employers and real job ads

To collect data on employers' preferences, we conducted an FSE (Rossi and Nock, 1982) targeting human resource professionals (employers) who, at the time of the survey, were hiring in one of the following sectors: mechanics, financial services, health, hospitality and ICT. Factorial surveys are a widely used method in the social sciences to study how individuals make multidimensional choices. In an FSE, respondents are asked to state their attitudes toward a series of hypothetical scenarios described in vignettes. A small but growing body of literature has used FSEs to understand the factors driving employers' hiring preferences (e.g. Damelang and Abraham, 2016; Di Stasio and Van de Werfhorst, 2016; Liechti *et al.*, 2017), also with a focus on unemployment scarring (Van Belle *et al.*, 2018; Shi *et al.*, 2018).

This method has several advantages (Auspurg and Hinz, 2014). First, while looking at concrete scenarios, respondents are more engaged in the survey and better able to indicate the factors influencing their decision-making than if questioned in more general terms. Second, vignettes vary from one another in a number of characteristics and it is difficult for the respondents to detect the aim of the study and give socially desirable answers. Finally, a crucial feature of FSEs that makes them an ideal method for our research goals is that correlations between vignette dimensions can be kept to a minimum level. The fact that the unemployment spells are uncorrelated with other vignette dimensions allows us to identify the causal effect of unemployment scarring.

The fieldwork took place from May to July 2016 in Norway and the German-speaking part of Switzerland. Within each sector, we selected occupations that cover various skill levels, and are both gender-typed and gender-neutral jobs. The occupations are cross-nationally comparable in terms of qualification requirements, job tasks and number of available vacancies and were selected based on the four-digit level International Standard Classification of Occupations (see Table 1 for the number of sampled job advertisements, and Supplementary Appendix for the selected International Standard Classification of Occupations [ISCO] classifications).

### 1.6 Sampling frame and response rates

To obtain our sampling frame, we compiled a database of employers using information that was publicly available on online job portals. In Norway, job ads were collected from

**Table 1.** Number of sampled job advertisements per sector and country

Countries	Sectors					Total
	Health	Restaurant	IT	Mechanics	Finance	
Switzerland	422	399	389	461	447	2118
Norway	1188	705	367	466	474	3200
Total	1610	1104	756	927	971	5381

**Table 2.** Characteristics of recruiters and their organizations

Recruiter characteristics	Switzerland N (%)	Norway N (%)
Sectors		
Mechanics	114 (17.90)	62 (11.72)
Financial Services	102 (16.01)	87 (16.45)
Health	181 (28.41)	262 (49.53)
Hospitality	98 (15.38)	50 (9.45)
ICT	142 (22.29)	68 (12.85)
Public or private sector		
Public	119 (18.68)	270 (51.04)
Private	438 (68.76)	188 (35.54)
Other	26 (4.08)	6 (1.13)
Number of employees		
Small (up to 49 employees)	81 (12.72)	61 (11.53)
Medium (between 50 and 249 employees)	248 (38.93)	190 (35.92)
Large (250 or more employees)	243 (38.15)	206 (38.94)
Gender of the recruiter		
Male	313 (49.14)	287 (54.25)
Female	268 (42.07)	174 (32.89)
Recruiter completed formal HR training		
Yes	297 (46.62)	243 (45.94)
No	286 (44.90)	219 (41.40)
Total	637 (100)	529 (100)

Note: The numbers include discontinued surveys as long as the vignette experiment section was completed. Hence totals may not add up to 100% due to missing answers in discontinued surveys.

*finn.no*, the largest national website for classified advertisements, and *nav.no*, the Norwegian Labor and Welfare Administration online portal. In Switzerland, we relied on the Swiss Market Monitor, which compiles a representative sample of job ads drawn from all formal advertising channels. For each advertised job that met a series of search criteria (e.g. targeted sector and occupation), we identified the person in charge for filling the vacancy and invited them to participate in the survey. We sent the invitations by email, which included the link to the survey. A screenshot of each posted advertisement was saved and shown in the survey in order to remind the respondent of the job position they should be referring to when answering the survey questions and evaluating the hypothetical CV. More detailed information on the sampling strategy and the design of the experiment can be found in (Hyggen, *et al.*, 2016).

In Switzerland, of the 2118 employers we invited, 580 (27%) completed the survey (see Table 2 for descriptive characteristics of the responding firms). Note that this response rate is much higher than that of previous factorial surveys conducted with Swiss (Liechti *et al.*, 2017) or German (Damelang and Abraham, 2016) employers (12% and 12.5%, respectively). The response rate of 14% in Norway (457 employers) is consistent with the above-



mentioned studies. Overall, 11 563 vignettes were rated, 6338 in Switzerland and 5225 in Norway.

The vignette experiment was integrated in a survey which collected information on the advertised jobs, the organizations and the employers. In both countries, the participation rate was the highest in the health sector and the lowest in the hospitality sector (we control for sector in all regression models). We can reasonably assume that respondents were experienced with HR-related tasks, including recruitment and selection procedures: half of them completed a formal HR training.<sup>3</sup>

### 1.7 Experimental design

We followed state-of-the-art procedures in the design of the FSE while at the same time using real vacancies to sample employers and select the jobs for which the vignettes were rated. For our research purposes, a crucial advantage of applying FSE is the random allocation of applicants' characteristics to vignettes, and the random allocation of vignettes to employers, which yield estimates of unemployment scarring effects that can be given a causal interpretation. The realistic sampling frame, combined with the experimental design of the FSE, ensured the hiring simulation was externally as well as internally valid.

The applicants' profiles included a set of invariant characteristics that were held constant across vignettes and a set of experimentally varied characteristics. All applicants had Swiss or Norwegian nationality. We also kept their potential years of work experience constant by stating in the introduction that all applicants had completed their education 5 years before. Their age was not explicitly mentioned, since depending on the country and the level of education assigned to the vignette, the age of the applicants differed across profiles.<sup>4</sup> Another set of characteristics was varied experimentally (also known in the FSE literature as vignette dimensions): gender, level and field of education, level and field of work experience, timing of unemployment, duration of unemployment and a country-specific variable.<sup>5</sup>

Applicants' level of education had three levels: lower secondary, upper-secondary or tertiary education. The field of education varied between occupation-specific or nonoccupation-specific education. Depending on the sector, occupation-specific education was operationalized with a credential obtained in the field of mechanics, financial services, health, hospitality or ICT. Nonoccupation-specific education was in *retail sales* regardless of sector. The qualifications used in the experiment had to be general enough to fit a wide

- 3 We reran the models using a sample that only includes vignettes rated by employers who have completed a formal HR training. Results are robust.
- 4 Age and level of educational attainment are confounded by design. In principle, our moderating effect by education may just as well be a moderating effect by age. We believe, however, that education is driving our findings as it is the only dimension that is made explicit and visible in the vignettes, whereas information on applicants' age was not reported. Note that the only way to vary education while keeping age constant would imply also varying years of work experience. We did not follow this strategy as it was important that all applicants were comparable with regard to the length of their labor market activity.
- 5 The country-specific dimension (dummy variable) is job hopping (frequent job change) in Switzerland and participation in active labor market programs (ALMP) during unemployment in Norway. This dimension varies independently from all others. As we are not interested in studying the effect of job hopping in Switzerland or participation in ALMP, we will not discuss them any further. All the models control for this variable.

variety of jobs and, at the same time, specific enough to be recognizable and informative for employer.<sup>6</sup> [Supplementary Table A1](#) illustrates the vignette dimensions, levels and labels. Applicants' work experience could be in low-, middle- or high-skill jobs. The field of work experience had three levels: occupation-specific, non-occupation-specific or non-qualified job as *call center agent*.<sup>7</sup>

Crossing all dimensions of education and work experience, 54 combinations were possible.<sup>8</sup> We decided to use only a subset of nine combinations ([Supplementary Table A1](#)) because of two considerations: First, some of the combinations are highly unlikely (e.g. financial service manager with a lower secondary degree) and can decrease the credibility of the experimental setting and impact its validity and the coefficient estimates in the regression analyses ([Auspurg and Hinz, 2014](#)). Second, a larger vignette universe would have required a larger sample size than what we estimated based on a pilot study. As a result, educational attainment and work experience were correlated in the design. We control for both in the analysis.

Turning to unemployment, the spell could occur directly after graduation, between jobs or at the moment of the application. While all employment trajectories were 5 years long, and up to one spell of unemployment was reported in each vignette,<sup>9</sup> the duration of the unemployment spell could be short (10 months) or long (20 months).<sup>10</sup> Including the possibility that the applicant was never unemployed, seven possible (un-)employment sequences were possible ([Supplementary Table A1](#)). Applicants' education and work experience were chronologically and vertically ordered, and month and year were displayed on a vertical axis to

- 6 To choose adequate education credentials we consulted labor market experts in both countries. We further relied on national career counseling websites (e.g. [berufsberatung.ch](#) in Switzerland), which systematically classify jobs and the corresponding qualification requirements. Our desk research and expert interviews revealed that jobs requiring at least upper-secondary education require occupation-specific training, which is offered by the VET but not the general track. We therefore opted for VET upper-secondary qualifications in the experimental design. As a result, VET and tertiary graduates do not only differ in their level of education, but also in the occupational specificity of their track. This does not represent a problem for our study, as our goal is not to disentangle the role of skill specificity from that of educational level, but rather to compare the employability of applicants with upper-secondary VET degrees across countries that have different skill formation institutions, and to compare the severity of unemployment scarring across education groups.
- 7 Work experience in a call center was designed to describe trajectories involving education-job mismatch, and will be used as an alternative operationalization of early-career insecurity to test the robustness and scope conditions of our argument.
- 8  $3$  (level of education)  $\times$   $2$  (occupation specificity of education)  $\times$   $3$  (level of work experience)  $\times$   $3$  (occupation specificity of work experience) = 54 possible combinations
- 9 We pretested two sets of vignettes, one in which unemployment was explicitly labeled and the other in which gaps in the employment history were left unaccounted for. No significant difference between the two sets was found. In this study, unemployment spells were labeled.
- 10 What constitutes a short or long unemployment spell is context-dependent. Previous studies used different definitions of short unemployment (cf. [Oberholzer-Gee, 2008](#); [Kroft et al., 2013](#); [Eriksson and Rooth, 2014](#)). We use 10 (short spell) and 20 (long spell) months. Given the cross-national design of the project, spells lasting 10 months would make unemployment potentially scarring even in countries, like Bulgaria or Greece, where the unemployment rate is relatively high. For our study, this implies that the comparison between short- and long-term unemployment scars might be conservative. We come back to this point in the discussion of results.

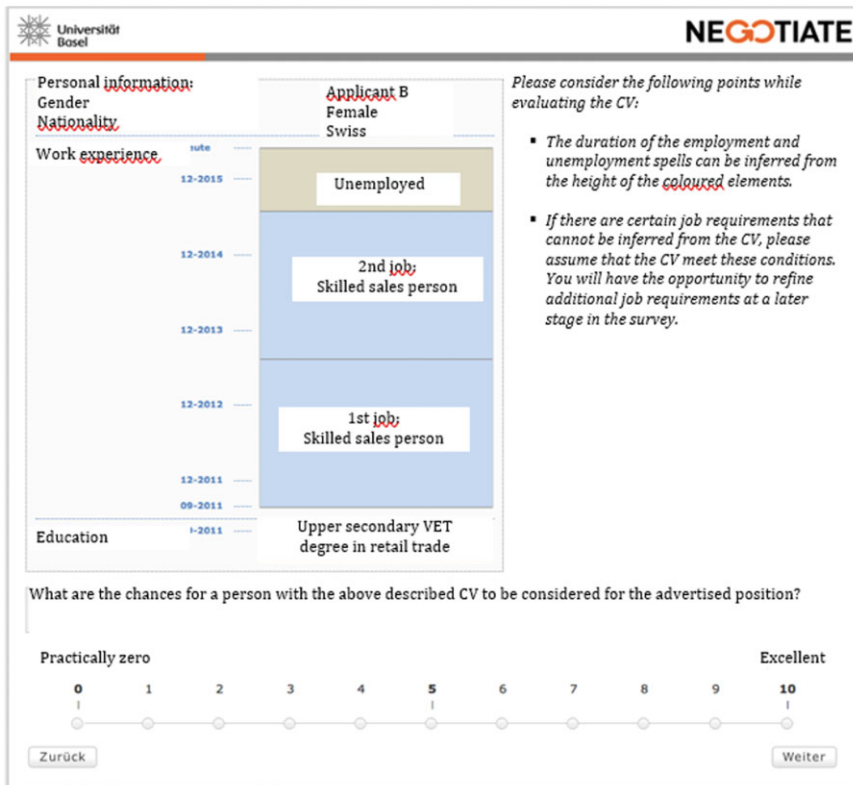


Figure 1 Example of a vignette/CV of a Swiss applicant (English translation).

indicate the duration of employment and unemployment as well as their timing (Figure 1 shows an example of a Swiss fictive CV).

In the methodological literature on FSE, using up to three levels per vignette dimension and a balanced number of levels across all dimensions is recommended, unless representing realistic cases requires a larger number of levels (Auspurg and Hinz, 2014). After randomly crossing all possible vignette characteristics,  $9 \text{ (level and field of education and work experience)} \times 7 \text{ (timing and duration of unemployment spells)} \times 2 \text{ (gender)} \times 2 \text{ (country-specific experimental variable)}$ , our vignette universe consisted of 252 different vignettes. To minimize the confounding between variables and to maximize the precision of our estimates, we blocked a subsample of 162 vignettes using the same D-efficient design for Norway and Switzerland and allowing up to four interaction terms (see Supplementary Table A2 for D-efficiencies). In our design, the average correlation across all dimensions and levels is negligible (0.09) (see Supplementary Table A3 for the pairwise correlation matrix). The 162 vignettes were allocated to 18 decks, resulting in 9 unique vignettes per deck. Next to randomly assigning the nine vignettes to each deck, we also added to each deck an ‘ideal’ vignette containing the best possible combination of characteristics, i.e. education and work experience that matched the job and no unemployment spell.<sup>11</sup> We randomized the order of vignettes (including the ideal vignette) within decks as well as the allocation of decks to

respondents. Each employer was shown a sequence of 10 vignettes, one after the other, and was asked to rate, on an 11-point scale ranging from 0 to 10, the likelihood that the applicant would be taken into consideration for the advertised position. This rating is the dependent variable in the analysis.

### 1.8 Estimation strategy

We log-transformed ratings due to the skewness of their distribution. As suggested by [Auspurg and Hinz \(2014\)](#), we fitted random-intercept models to account for the multilevel structure of data containing multiple ratings of vignettes per employer. Given the log transformation and the fact that all vignette dimensions are categorical, we can interpret each regression coefficient as the approximate percent change in the dependent variable for a discrete change in the independent variable while all other variables in the model are held constant. The presence of an unemployment spell, its length and timing are the independent variables of interest. Because some dimensions are not orthogonal and because we used a subset of the full vignette universe, we controlled in all models for all experimentally varied dimensions unless otherwise specified: *gender* of the applicants, *occupation specificity* of applicants' education and work experience and the *country-specific experimental variable*. Furthermore, we also controlled for the *sector*, the entry requirements of the job in terms of work experience and educational background (this information was derived from the survey), and the *order* of the vignettes in the deck in all models. In pooled models, we also included a country dummy and interaction terms to formally test for differences in coefficients across countries. In the following, we are discussing only the experimental variables. Full models including all control variables are shown in the [Supplementary Appendix Tables A4–A6](#).

## 2. Results and discussion

We start the discussion of results by presenting models in which we regressed the employers' ratings on the vignette dimensions.

### 2.1 The moderating role of education

In the first step, we present the main effects of unemployment spells on the likelihood that the applicant is considered for the position (Models 1a and 1b in [Table 3](#)). In Switzerland as well as in Norway a spell of unemployment led to a significant 13% decrease in employers' ratings ( $P < 0.001$ ). Hypothesis 1, stating that in both countries a spell of unemployment

11 The ideal vignette was introduced to assess the average match between the 'best possible' hypothetical CV and the sampled vacancies. The ideal vignette was drawn from the subset of 162 vignettes that was blocked from the vignette universe. Hence, the ideal vignette is not a different vignette in its nature, and it is not recognizable as such to the respondent. The order of the vignettes in each deck was randomized. Because the ideal vignette is not special in any sense, except for its lacking potentially negative signals, and it is picked from the set of 162 vignettes, we can assume that, if this vignette is rated any differently, this is only because of its characteristics. In other words, there is no 'ideal-vignette-effect' as such, hence, there should be no systematic biases in responses. As a robustness check, we re-ran all models and controlled for the ideal vignette. The moderating effect of education on unemployment scarring remains substantially unchanged.

**Table 3** Random-intercept models with log-transformed dependent variable (vignette rating): unemployment scarring

Applicant characteristics	Model 1a	Model 1b	Model 2	Model 3a	Model 3b	Model 4
	CH b/SE	NO b/SE	Pooled b/SE	CH b/SE	NO b/SE	Pooled b/SE
Country [Ref. Switzerland]	-	-		-	-	
Norway	-	-	0.09*	-	-	-0.34***
	-	-	0.04	-	-	0.05
Education level of vignette [Ref. Upper-secondary VET]						
Lower secondary	-0.38*** 0.02	-0.16*** 0.02	-0.29*** 0.01	-0.54*** 0.04	-0.16*** 0.05	-0.58*** 0.04
Tertiary	-0.03 0.02	0.50*** 0.02	0.20*** 0.01	-0.12*** 0.03	0.71*** 0.04	-0.11** 0.03
Unemployment [Ref. No unemployment]						
Unemployed	-0.13*** 0.02	-0.13*** 0.02	-0.15*** 0.02	-0.22*** 0.03	-0.01 0.03	-0.26*** 0.03
Unemployment * Country [Ref. Switzerland * No unemployment]						
Unemployed *	-	-	0.05			0.28***
Norway	-	-	0.03			-0.04
Unemployment * Education level of vignette [Ref. No unemployment * Upper-secondary VET]						
Unemployed *	-	-	-	0.20***	-0.02	0.24***
Lower secondary	-	-	-	0.05	0.05	0.05
Unemployed *	-	-	-	0.13***	-0.28***	0.12**
Tertiary	-	-	-	0.04	0.04	0.04
Country * Unemployment * Education level of vignette [Ref. Switzerland * No unemployment * Upper-secondary VET]						
Unemployed *	-	-	-	-	-	-

continued

Table 3 Continued

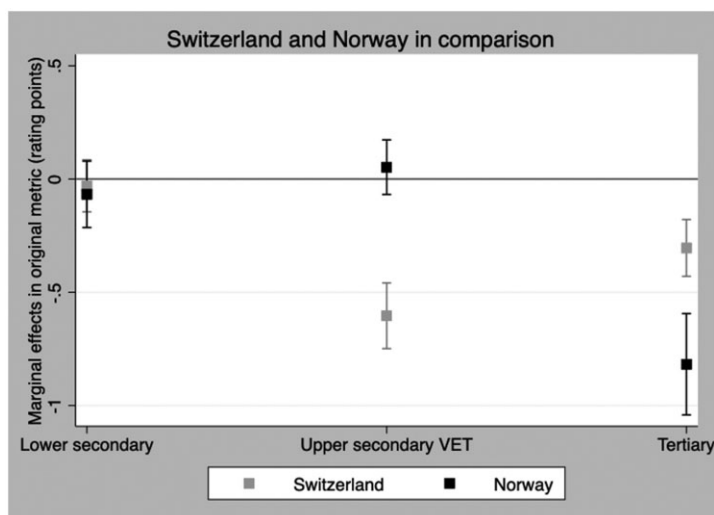
Applicant characteristics	Model 1a	Model 1b	Model 2	Model 3a	Model 3b	Model 4
	CH b/SE	NO b/SE	Pooled b/SE	CH b/SE	NO b/SE	Pooled b/SE
Norway <sup>*</sup>	-	-	-	-	-	-0.30 <sup>***</sup>
Unemployed <sup>*</sup>	-	-	-	-	-	0.07
Lower secondary						
Norway <sup>*</sup>	-	-	-	-	-	-0.39 <sup>***</sup>
Unemployed <sup>*</sup>	-	-	-	-	-	0.06
Tertiary						
Constant	1.63 <sup>***</sup>	1.54 <sup>***</sup>	1.52 <sup>***</sup>	1.69 <sup>***</sup>	1.44 <sup>***</sup>	1.70 <sup>***</sup>
	-0.06	-0.11	0.05	-0.06	-0.11	0.06
No. of vignettes	6298	4853	11 151	6298	4853	11 151
No. of respondents	634	491	1125	634	491	1125
Log likelihood	-5709.08	-4393.33	-10 338.03	-5698.87	-4370.17	-10 116.50

\* $P < 0.05$ ,\*\* $P < 0.01$ ,\*\*\* $P < 0.001$ ,\*\*\*\* $P < 0.10$ .

Notes: All models control for education- and work-related job requirements, occupation specificity of applicants' education and work experience, gender of the applicants, order effects, the country-specific variable and the sector.

decreases the employment chances, is corroborated. Turning to the education effects, in comparison to upper-secondary VET degree holders (the reference category), lower-secondary degree holders received lower ratings in both countries. Only in Norway, though, tertiary degree holders received significantly higher ratings than VET graduates (50% increase in ratings [ $P < 0.001$ ]). Note that the differences in returns to education shown in these models are not due to varying occupational entry requirements in the two countries, as these were controlled for. In addition, we checked for cross-national differences in unemployment scarring after pooling Norwegian and Swiss data. The non-significant interaction term of country and unemployment in Model 2 (Table 3) indicates that unemployment scarring is of similar magnitude in the two countries.

To test the second hypothesis, stating that upper-secondary VET degree holders experience stronger unemployment scarring than tertiary graduates, especially in Switzerland, we first added an interaction term between unemployment and applicants' education level (Models 3a and 3b in Table 3), then we added a three-way interaction between unemployment, applicant's education level and country (Model 4 in Table 3). The two-way interaction effects are statistically significant in both countries. In Switzerland, the average unemployment scarring effect is a 13% decrease in ratings ( $P < 0.001$ ), for VET degree holders this grows to a 22% decrease ( $P < 0.001$ ) (Model 3a in Table 3). Unemployment scars VET degree holders significantly stronger than tertiary degree holders (-0.13 [0.04],  $P = 0.001$ ). This finding is in line with Hypothesis 2a and corroborates our expectation that in a country like Switzerland, where the VET system is strongly institutionalized and well-



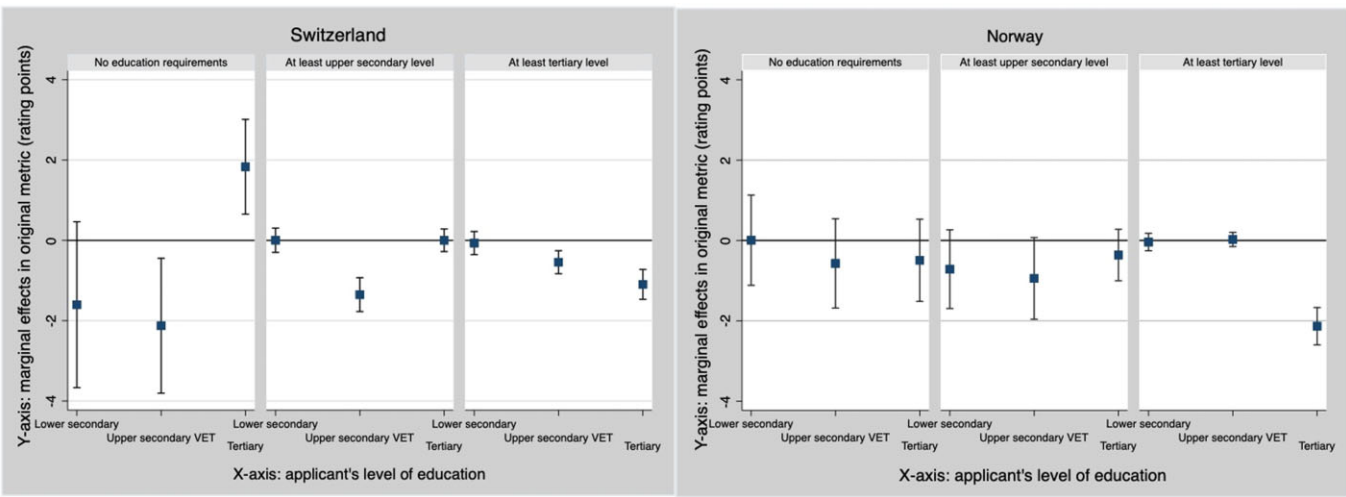
**Figure 2** Effect of unemployment by applicants' education level and by country: three-way interaction (95% CI). The horizontal line is at 0 (no effect).

*Note:* Marginal effects show the change in ratings given to applicants and are based on coefficients estimated in Model 4 in Table 3, which controls for education- and work-related job requirements, occupation specificity of applicants' education and work experience, gender of the applicants, order effects, the country-specific variable and the sector.

linked to the labor market, those VET graduates who experience a bumpy career start are likely to be perceived by employers as negatively selected. In Norway, upper-secondary VET degree holders are not at all affected by unemployment scarring (see the non-significant coefficient for unemployment in Model 3b, which refers to VET graduates). Only tertiary degree holders experience unemployment scarring (29% decrease in ratings,  $P < 0.001$ ). Our results reveal that in both countries, the group perceived as the most employable is also the one that is most scarred if ever exposed to unemployment. While findings for Switzerland confirm that upper-secondary VET degree holders experience the strongest unemployment scarring and support Hypothesis 2a, the results for Norway are not in line with the hypothesis.

To test Hypothesis 2b, we ran a model with pooled data and including a three-way interaction between country, unemployment and applicants' education level. The results indicate that the difference in unemployment scarring between upper-secondary VET and tertiary degree holders differs significantly across countries ( $-0.39 [0.06]$ ,  $P = 0.000$ ). To facilitate the interpretation of the three-way interaction, Figure 2 shows unemployment scarring by education group and country (estimated from Model 4 in Table 3). Hypothesis 2b is supported, but as shown in Figure 2 the cross-national difference is also driven by the very strong unemployment scarring experienced by tertiary graduates in Norway.

To explore whether unemployment scarring could be compensated by overeducation, we additionally ran models including three-way interactions between applicants' education level, the required education level of the job and the occurrence of unemployment. The marginal effects in Figure 3 show that in both Switzerland and Norway, tertiary graduates who



**Figure 3** Effect of unemployment by applicants' education level (x-axis) and by job requirements (sub-boxes): three-way interaction (95% CI). The horizontal line is at 0 (no effect).

*Note:* Marginal effects show the change in ratings given to applicants working in the occupation-specific field and who have not been job hopping (CH) or have not attended ALMP (NO). The rest of the variables are set at their average values.



experienced an unemployment spell were only disadvantaged when applying for jobs that required a tertiary degree. When applying to jobs at a lower level, tertiary graduates could compensate the unemployment spells with overqualification. In Switzerland, upper-secondary VET degree holders were negatively affected by unemployment regardless of job requirements, thus even when applying to jobs for which they were overqualified. Taken together, these findings indicate that unemployment is a worse signal for groups that have closer labor market affinity (i.e. VET degree holders in Switzerland and tertiary degree holders in Norway).

## 2.2 Negative duration dependence

In Table 4, we analyzed negative duration dependence by differentiating between short and long unemployment spells in Models 1a (Switzerland) and 1b (Norway). In both countries, a 10-month long, as well as a 20-month long unemployment spell, significantly decreased applicants' chances to be considered for the position. However, the coefficients for short and long unemployment spells were nearly identical, a sign that longer spells did not further decrease applicants' ratings. It is possible that for Norway and Switzerland, where the unemployment rates are low by international standards, a 10-month long spell was already perceived by employers as quite long. As negative duration dependence may still be observed for specific education groups, we included interaction terms between length of unemployment and level of education (Models 2a and 2b).

In Switzerland, for the VET graduates, a 20-month long unemployment spell led to an additional 5% ( $P < 0.05$ ) decrease in ratings compared to a 10-month long spell, while this was not the case for the tertiary degree holders. In Norway, we did not find any evidence of duration dependence for any of the education groups. Hypothesis 3 was supported. Our findings suggest that the country-specific education system may play an important role in influencing the dynamics of unemployment scarring. The finding of negative duration dependence for Swiss VET graduates is consistent with the argument that workers equipped with occupation-specific skills would cope less well with occupational changes and fluctuations in skill demands because such skills may atrophy if not put to use on the job. It also supports the argument that the negative signal of long-term unemployment is especially strong for the education group that is expected to show a continuous career path.

## 2.3 Unemployment timing

Lastly, we compared the effects of past with current unemployment spells. In Models 1a and 1b in Table 5, we found that the timing of unemployment did not matter in Switzerland, while in Norway the ratings of currently unemployed applicants decreased by 6% in comparison to the ratings of applicants who experienced unemployment in the past ( $P < 0.005$ ). We then compared scarring effects across education groups in Models 2a and 2b. Contrary to Hypothesis 4, stating that past unemployment is only scarring for Swiss upper-secondary VET graduates, we found that past, as well as current unemployment, significantly scarred both VET (25% and 21% reduction in ratings, respectively) and tertiary degree holders (11% [ $P < 0.005$ ] and 9% [ $P < 0.005$ ] reduction in ratings, respectively). Post-estimation tests show that the scarring effects of past and current unemployment are of comparable size for both upper-secondary VET degree holders (0.03 [0.03],  $P = 0.280$ ) and tertiary degree holders (0.01 [0.04],  $P = 0.770$ ). Lower-secondary degree holders are unaffected by unemployment, regardless of its timing. In Norway, post-estimation test shows that current

**Table 4.** Random-intercept models with log-transformed dependent variable (vignette rating): short vs. long unemployment spell

	Model 1a	Model 1b	Model 2a	Model 2b
	CH b/SE	NO b/SE	CH b/SE	NO b/SE
Applicant characteristics				
Education [Ref. Upper-secondary VET]				
Lower secondary	-0.38*** 0.02	-0.16*** 0.02	-0.54*** 0.04	-0.16** 0.05
Tertiary	-0.03 0.02	0.51*** 0.02	-0.12*** 0.03	0.71*** 0.04
Duration of unemployment [Ref. No unemployment]				
10-month unemployment	-0.12*** 0.02	-0.14*** 0.02	-0.20*** 0.03	-0.01 0.04
20-month unemployment	-0.14*** 0.02	-0.13*** 0.02	-0.25*** 0.03	-0.02 0.04
Duration of unemployment * Education level of vignette [Ref. No unemployment * Upper-secondary VET]				
10-month unemployment * Lower secondary	-	-	0.16**	-0.05
10-month unemployment * Tertiary	-	-	0.12**	-0.27***
20-month unemployment * Lower secondary	-	-	0.24***	0.00
20-month unemployment * Tertiary	-	-	0.14**	-0.29***
Constant	1.65*** -0.06	1.54*** -0.11	1.69*** -0.06	1.44*** -0.11
No. of vignettes	6298	4853	6298	4853
No. of respondents	634	491	634	491
Log likelihood	-5707.98	-4393.28	-5695.85	-4369.03

\* $P < 0.05$ ,\*\* $P < 0.01$ ,\*\*\* $P < 0.001$ ,\*\*\*\* $P < 0.10$ .

Notes: All models control for education- and work-related job requirements, occupation specificity of applicants' education and work experience, gender of the applicants, order effects, the country-specific variable and the sector.

unemployment scarred tertiary degree holders (the only group experiencing unemployment scarring) more strongly than past unemployment, leading to an additional 8% reduction in the ratings (0.08 [0.03],  $P = 0.026$ ).

To further investigate the unanticipated outcome for the Swiss applicants, we differentiated between past unemployment occurring immediately after graduation and past unemployment occurring after the first job experience (Table 6). We focused on applicants with

**Table 5.** Random-intercept models with log-transformed dependent variable (vignette rating): Timing of unemployment

Applicant characteristics	Model 1a	Model 1b	Model 2a	Model 2b
	CH b/SE	NO b/SE	CH b/SE	NO b/SE
Education [Ref. Upper-secondary VET]				
Lower secondary	-0.38***	-0.16***	-0.54***	-0.16**
	0.02	0.02	0.04	0.05
Tertiary	-0.03	0.50***	-0.12***	0.70***
	0.02	0.02	0.03	0.04
Timing of unemployment [Ref. No unemployment]				
Past unemployment	-0.12***	-0.11***	-0.21***	0.01
	0.02	0.02	0.03	0.03
Current unemployment	-0.15***	-0.18***	-0.25***	-0.06
	0.02	0.02	0.04	0.04
Timing of unemployment * Education level of vignette [Ref. No unemployment * Upper-secondary VET]				
Past unemployment * Lower secondary	-	-	0.19***	-0.03
	-	-	0.05	0.06
Past unemployment * Tertiary	-	-	0.13**	-0.27***
	-	-	0.04	0.05
Current unemployment * Lower secondary	-	-	0.21***	-0.02
	-	-	0.06	0.06
Current unemployment * Tertiary	-	-	0.14**	-0.29***
	-	-	0.05	0.05
Constant	1.63***	1.54***	1.69***	1.45***
	0.06	0.11	0.06	0.11
No. of vignettes	6298	4853	6298	4853
No. of respondents	634	491	634	491
Log likelihood	-5708.16	-4388.41	-5697.94	-4365.18

\* $P < 0.05$ ,\*\* $P < 0.01$ ,\*\*\* $P < 0.001$ ,\*\*\*\* $P < 0.10$ .

Notes: All models control for education- and work-related job requirements, occupation specificity of applicants' education and work experience, gender of the applicants, order effects, the country-specific variable and the sector.

occupation-specific training and who did not change jobs frequently (no job hopping) in order to see whether unemployment directly after graduation matters for workers who were well-qualified for the job and had relevant and consistent work experience. The marginal effects show that for tertiary degree holders unemployment directly after graduation had no scarring effect, but unemployment after first employment led to lower ratings. In contrast, VET graduates were penalized for experiencing a spell of unemployment regardless of its timing. This lends further support to the argument that in a country with a strong VET

**Table 6.** Effect of unemployment (in the original rating metric) at different points in time by education groups. Swiss applicants only

Applicant characteristics	Model 1a CH b/SE
Unemployment after graduation	
Lower secondary	-0.01 0.14
Upper-secondary VET	-1.00*** 0.17
Tertiary	-0.28**** 0.15
Unemployment between jobs	
Lower secondary	-0.10 0.13
Upper-secondary VET	-1.04*** 0.17
Tertiary	-0.52*** 0.15
Current unemployment	
Lower secondary	-0.10 0.13
Upper-secondary VET	-1.15*** 0.17
Tertiary	-0.48** 0.15
No. of vignettes	6298
No. of respondents	634
Log likelihood	-5696.06

\*\*  $P < 0.01$ ,

\*\*\*  $P < 0.001$ ,

Notes: Marginal effects show the change in ratings given to Swiss applicants working in the occupation-specific field and who have not been job hopping. The rest of the variables are set at their average values.

system like Switzerland, employers expect upper-secondary VET graduates to find jobs directly after graduation and to show stable employment careers thereafter (Shavit and Müller, 2000). As a result, those with a hampered career start are viewed with suspicion: for them, unemployment scars are strong and long-lasting.

## 2.4 Robustness checks

We checked the robustness of our findings with a number of additional tests. First, we re-ran our analysis replacing unemployment with work experience in call centers, which we view as an alternative measure of non-standard employment. These applicants worked for 5 years as call center agents right after graduation. During this time, they did not gain valuable

experience in the occupation they were trained for. Similar to our main hypotheses for the interaction effect of education and unemployment, non-standard employment should be particularly detrimental for VET degree holders, due to the higher risk that occupation-specific skills may become obsolete and the fact that failure to enter a matching job after graduation may send a particularly negative signal to employers. In line with our findings for unemployment, in Switzerland work experience in a call center was more scarring for upper-secondary VET graduates than for tertiary graduates. The opposite was true in Norway (see [Supplementary Appendix Table A7](#)).

Second, following the recommendation by [Auspurg and Hinz \(2014\)](#), we reran the models using a restricted sample that only includes vignettes rated by at least five recruiters. While in Switzerland all vignettes were rated by at least five respondents, this was the case for 71% of vignettes in Norway. The results were robust ([Supplementary Table A8](#)).

As a final robustness check, we added the following firm- and job-level characteristics as controls in the models: firm size, type of firm, sector (public or private), working hours (part- or full-time), geographical location of the firm, whether the vacancy was difficult to fill and offered wage. After controlling for these features, no substantial changes were found (results available upon request).<sup>12</sup>

### 3. Conclusion

This study was based on an FSE conducted with employers (recruiters and HR professionals) in two countries, Norway and Switzerland, characterized by different education systems. We examined how employers perceive job applicants who have experienced spells of unemployment early on in their career. Our main focus was on the role of education as a moderator of unemployment scarring in systems with very different skill formation institutions.

We bridged two strands of research that have so far developed independently: the school-to-work literature and the literature on unemployment scarring. The former has highlighted the positive role of vocational education in providing students with a safety net from unemployment but without studying the stigma that VET students could possibly carry if they ever fall into unemployment. The field-experimental literature on unemployment scarring, on the other hand, lacked a comparative perspective: In the absence of a cross-nationally harmonized field experiment, a shortcoming of this literature is that differences in the experimental design, time of fieldwork and sampling frame limit the comparability of the size and severity of unemployment scarring across studies. The comparative experimental design in our study allowed us to directly compare the size of unemployment scarring across countries—these effects can be given a causal interpretation thanks to the experimental nature of the factorial survey. By simultaneously varying both unemployment spells and education in a factorial design, we showed that unemployment scars of similar size, on average, mask significant variation across countries when looking more closely at specific education groups.

12 We carried out further robustness checks with the results staying stable. First, we reran all models using fixed effects. Second, we included a deck identifier variable as a control variable to check for any effects that may be caused by the unequal numbers of presented decks. Results can be provided upon request.

Results indicated that unemployment scarring is context-dependent and that education moderates scarring effects in a way that is consistent with the wider institutional framework in which skills are delivered in each country. Our analysis of unemployment scarring, duration dependence and timing of unemployment by education groups shows a consistent and robust pattern of results: unemployment has the strongest negative effect on the employment opportunities of Swiss VET graduates, for whom scarring is severe, long-lasting and proportional to the length of the spell. These applicants were still penalized by unemployment spells that occurred right after graduation, even if they managed to re-enter employment thereafter. We did not find the same pattern for upper-secondary VET graduates in Norway, where vocational education is less occupation-specific and employers were more tolerant toward VET graduates showing discontinuing career paths. These findings support our argument that in countries, like Switzerland, where the VET system is strongly institutionalized and vocational training is geared to the provision of occupation-specific skills, those graduates that fall into unemployment are penalized most strongly. Because employers were asked whether they would consider the applicant for the advertised position, a rather low-threshold measure of hiring intentions, the scarring effects detected in this study are likely on the conservative side.

Our findings contribute to the policy and scholarly debate on youth employability by pointing to an important trade-off of dual VET systems (see also: [Bol and Van de Werfhorst, 2013](#); [Di Stasio, 2017](#)). While these are often praised for facilitating smooth school-to-work transitions, we showed that the same systems are also particularly rigid toward youth experiencing early-career job insecurity. This is an important trade-off to keep in mind, in light of the rising level of job insecurity affecting youth in many European countries ([Bell and Blanchflower, 2011](#)), the wide support for public spending in the VET sector ([Busemeyer et al., 2018](#)) and policy proposals to introduce education reforms modeled after the German dual VET system—which is very comparable to the Swiss one—as a possible policy measure to tackle youth unemployment ([Chung et al., 2012](#); [Euler, 2013](#)). Our findings call for targeted and well-designed labor market activation policies and retraining programs that can mitigate the stigma of unemployment for those job-seekers that, on paper, are perceived as highly employable (e.g. VET graduates) but that, precisely because of this presumed employability, are strongly scarred if exposed to periods of unemployment (see also [Liechti et al., 2017](#)).

In closing, we acknowledge the limitations of our study and suggest avenues for future research. First, although earlier validation studies showed a rather close correspondence between the intentions expressed by respondents in FSEs and their real-life behavior (e.g. [Hainmueller et al., 2015](#)), our findings refer to employers' *intentions* to hire hypothetical candidates described in the vignettes and not to actual hiring decisions. Second, we could not study *how* employers perceived the information included in the CVs and, in particular, *why* they were reluctant to hire applicants who reported a spell of unemployment. We derived our expectations from both human capital and signaling theory, but could not adjudicate between the two to explain our findings. Future research may consider varying candidates' reasons for leaving past employers as well as the intensity of their job search activities to re-gain employment to better understand employers' underlying motives when preferring one or the other candidate. Employers' perceptions of applicants' skills should also be measured explicitly, to directly test the mechanism of (perceived) skill obsolescence. Finally, it is important to keep in mind that in this study our focus was on demand-side scarring effects only. Supply-side scarring effects, such as ineffective job search strategies or psychological and motivational barriers, were ruled out by design. Future studies should

try to find innovative ways to study both types of effects, demand- and supply-side ones, simultaneously.

## Supplementary material

[Supplementary material](#) is available at *Socio-Economic Review Journal* online.

## Funding

The study was funded by the Swiss State Secretariat for Education, Research and Innovation SERI (Grant Number 15.0089, 649395) as part of the Horizon 2020 project ‘Negotiating early job-insecurity and labour market exclusion in Europe—NEGOTIATE’ (Horizon 2020, Societal Challenge 6, H2020—YOUNG-SOCIETY-2014, YOUNG-1-2014

## Acknowledgments

This work was supported by the Swiss State Secretariat for Education, Research and Innovation under contract number 15.0089. The opinions expressed and arguments employed herein do not necessarily reflect the official views of the Swiss Government.

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