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Abstract

Purpose: Periodic economic instabilities and structural changes in the labour market have given rise to a variety of forms of job insecurity. This article compares the scarring effects of different forms of job insecurity on future employment chances, and how they vary across education groups.

Methods: Using a sample of real vacancies and data collected in a vignette experiment with employers in Switzerland, a country with a strongly developed vocational education and training (VET) system, this article investigates how employers evaluate a period of unemployment, job hopping and work experience in deskilling jobs when hiring candidates.

Findings: The findings reveal that work in deskilling jobs is by far more scarring than unemployment or job hopping. The study also demonstrates that applicants with upper secondary vocational education are impacted the greatest by all three forms of job insecurity.

Originality: The study makes use of real vacancies. While experiments have the strength of high internal validity, most experimental studies in recruitment research rely on students as respondents. As this study works with real employers hiring for positions it benefits from high external validity.

Keywords: education, factorial survey experiment, hiring, employment instability, scarring, school-to-work transition, vocational education and training (VET)

1. Introduction

This article analyses and compares the impact of different forms of employment instability at an early career stage on individuals' later employment chances, and how they vary across education groups. Young people are comparatively more likely to find themselves unemployed, in mismatched jobs or with fixed-term contracts[1]. The reasons for the labour market precarity of young people are complex and have been explained by different factors, such as possessing little work experience, being less effective in the job search, and having a smaller network of contacts (Bell and Blanchflower 2011). The goal of this paper is not to explain why young people are more vulnerable; rather, the aim is to understand how early employment instabilities may affect their future employment chances. A difficult entry into the labour market can impact individuals' careers in the long run in the form of decreased employment prospects or lower wages (ibd.); these negative impacts are often referred to as "scarring effects". This article provides an understanding of how employers contribute to the scarring effect.

There is established evidence for unemployment scarring (e.g. Arulampalam *et al.,* 2000). However, the consequences of different forms of employment instability have most often been studied separately, and little is known about how they impact future employment chances in comparison to one another. Yet, with changing labour market structures, such as deregulation or the rise of the gig economy, the transition phase from education into employment has become more complex (for an overview see Karamessini *et al.*, 2015), and young people may face the choice between taking up a job poorly suited to their skills profile, a fixed-term position or unemployment.

Only a handful of studies – Pedulla (2016), Nunley *et al*., (2017) and Baert and Verhaest (2019) – have compared the effect of unemployment and skills mismatch. The findings are mixed, partly due to different definitions for skills mismatch, partly to different operationalisation of key variables, and the mixed results also highlight the context-dependency of the determining factors for career outcomes. Studies that statistically compare the effects of more than two forms of employment instability are lacking. Addressing this gap, this article compares the effects of three common forms of

employment instability – unemployment, job hopping, and work in deskilling jobs – on future employment prospects. *The first aim of this study is to compare the effects of three different forms of employment instability.*

Secondly, this study aims to understand the role of education in moderating the effects of early employment instability with a focus on the vocational education. School-to-work literature has shown that employers draw on applicants' education credentials when making hiring decisions. Especially for younger workers with little work experience, education is crucial information. Credentials can reveal specific information about the type and level of skills of the applicants (Becker, 1964), or they can be used as a cue for applicants' trainability and capabilities (Stiglitz, 1975). In Switzerland, a country with strongly standardised vocational education and training (VET), the vocational credential is particularly informative for the employer as the vocational titles reveal the exact skills the applicant received the training for. Credentials can also be used instrumentally to create barriers to entry into certain occupations (Bol and Weeden 2015). There is extensive research on the relationship between education and labour market outcomes such as propensity to be employed or lifetime earnings, and there is a large body of literature on specifically discussing the VET (e.g. Iannelli and Raffe 2007, Solga et al. 2014, Forster et al. 2016, Hoidn and Šťastný 2023). However, less is known about how education contributes to re-employment chances after a turbulent career start. An exception is Author 1 who studied how education can moderate job finding chances after initial unemployment and indeed found evidence for the moderating effect of education. However, how education may moderate employment chances after experiencing forms of employment instability other than unemployment has been a neglected research area. This study addresses this research gap.

This paper has a specific focus on the scarring effect of employment instability for the vocationally educated applicants. The upper secondary dual VET system has been praised to facilitate the school-to-work transition, resulting in a low degree of skills mismatch and youth unemployment (Shavit and Müller 1988). Less investigated is the school-to-work transition for graduates of vocational tertiary education: graduates from the universities

of applied sciences. In comparison to the upper secondary VET system, the universities of applied sciences are relatively new and were established only in the mid 1990s (OPET 2010). There is evidence that that the return on education measured in earnings is higher for vocational tertiary graduates in comparison to academic tertiary graduates at least in the career entry stage (Backes-Gellner and Geel 2014), but a comparison between the upper secondary and tertiary vocational education is lacking. A particular interest in this article is to evaluate whether VET education at the upper secondary and tertiary level is effective for finding jobs after experiencing early employment instability. To understand whether the beneficial effect of vocational training can compensate for a hampered career start, this study draws on data collected in Switzerland, a country with a strongly institutionalised and standardised dual VET system. *The second aim of this article is to understand whether and how different education groups are affected by employment instability in the context of a strong VET system.*

This study analyses the demand-side perspective and uses data collected in a vignette experiment with employers, using a sample of real vacancies. Employers can be seen as gatekeepers in the labour market, rewarding certain characteristics while penalising others, when making hiring decisions. Using experimental data, it is possible to control for supply-side effects and to single out the demand-side effects. In this experiment, CVs of fictional applicants showing different employment histories and education backgrounds were sent to employers who were asked to evaluate their employment chances for the advertised job positions.

2. Theoretical considerations for employers' recruiting behaviour

This article draws on human capital theory and signaling theory to explain job scarring. Instead of contrasting the two theories, in this article, they are used in a complementary way to explain hiring preferences and to formulate hypotheses. From the perspective of human capital theory, employers are rational, productivity-maximising agents who seek to fill positions with the most productive workers. The return on education and work experience is seen as a direct reward of skills (Becker, 1964). Signaling theory starts from

the premise that hiring is a situation of information imbalance, and employers have limited resources to understand applicants' true qualities prior to hiring (Stiglitz 1975). Employers thus draw on visible cues such as education credentials or employment histories to predict applicants' qualities. Following signaling theory, credentials and previous job titles are used as signals rather than direct measures of skills. In the following, the consequences of the three forms of employment instability will be discussed by considering both theories.

2.1 The impact of early employment instability on later employment chances

The scarring effect of unemployment at an early career stage is well-documented (e.g. Arulampalam *et al.* 2000, Bell and Blanchflower 2011). From the human capital theory perspective, education and work can be seen as opportunities for skills accumulation. On the other hand, unemployment can be perceived as forgone chances to gain skills, and previously acquired work-relevant human capital may deteriorate. Following signaling theory, unemployment can be associated with low productivity and undesirable personal traits (Atkinson *et al.,* 1996). Especially when the overall unemployment rate is low, unemployed individuals may be seen as negatively selected. In Switzerland the youth unemployment rate is relatively low in comparison to other OECD countries: in 2015[2] 3.7% of people in the 20-34 age group were unemployed (Eurostat, 2015). This can contribute to the stigma effect of unemployment in the Swiss labour market.

Existing experimental studies that investigate employers' perception of unemployment have shown mixed findings, especially in terms of the minimum unemployment duration for scarring to occur: In Sweden, research by Eriksson and Rooth (2014) indicates that negative impacts of unemployment began to show for individuals unemployed for 9 months or more. Nüß (2018) found in Germany that employment chances decrease starkly after 10 months of unemployment. In Switzerland, an adverse effect was observed after 2.5 years of unemployment (Oberholzer-Gee 2008). In the US, both Nunley et al. (2016) and Farber et al. (2016), found no correlation between the likelihood of receiving a job interview invitation and the length of unemployment, with the periods examined extending up to 12 months. On the other hand, also in the U.S., Kroft, et al. (2013) and

Ghayad (2013) discovered a marked decrease in interview call-backs when unemployment exceeds 8 months and 6 months, respectively. Using the X data set, a significant negative impact of an unemployment spell of 10 months on employers' evaluation of the applicant's employ was found in Switzerland (Author 1, Author 2, Autor 3). The differences between the studies may be explainable by the differences in country contexts and labour market conditions, the time when the studies were conducted, sample characteristics, and experiment design. As the primarily interest of this paper is to compare scarring effects of different forms of employment insecurity, it will not further discuss the variety of findings in unemployment studies.

Turning to job hopping: from the human capital theory perspective, frequent job changes can prevent workers from accumulating skills, since with each job change they may need time to adopt firm-specific skills, and hence in comparison to workers who have changed jobs less frequently, job hoppers have had less time to accumulate occupation-specific skills (Fan and DeVaro 2020). Following signaling theory, job hopping can signal a lack of commitment, disloyalty, low motivation, and poor work ethic, and workers changing jobs frequently are also often perceived to be unpredictable, less reliable, less team-oriented and impatient (Cohn *et al.,* 2021). Such stigma may be alleviated in times of economic downturns, as when businesses aim to reduce their fixed costs, workers may need to take up fixed-term jobs. Both theories suggest that in Switzerland, a country with relatively low youth unemployment rate, job hopping decreases applicants' job finding chances.

The existing findings on the effect of job hopping on future employment chances are mixed. On the optimistic side, workers changing jobs frequently can be seen as ambitious and seeking professional growth opportunities (Rivers, 2018). Further, they may have more professional contacts, which can benefit the firm (Granovetter, 1974). Other studies have found negative consequences of job hopping such as lower future wages or decreased employment prospects, e.g. Cohn *et al.* (2021) showed that firms in Switzerland prefer applicant with fewer job changes, and that frequent job changes can signal subpar work attitude.

Moving on to work in deskilling jobs: drawing on human capital theory, work in deskilling jobs means not only missed opportunities to gain relevant skills but also deterioration of previously acquired skills. For employers this implies training costs. Employers can also use work in deskilling jobs as a signal for applicants' traits that are unobservable at the point of hiring. Especially in contexts with a low rate of and high demand for skilled workers, work experience in deskilling jobs can be a red flag. The labour market structure is also likely to play a role: in countries with pronounced occupational closures, such as Switzerland, workers without adequate education credentials and occupation-specific work experience have low chances of being hired (Bol and Weeden 2015).

2.2 A comparison between different forms of employment instability

Facing financial and social pressures, young people may need to work in interim jobs to bridge employment gaps. Yet, in the long run, it is not clear whether unemployment or other forms of employment instability are more detrimental in regard to future employment chances. 'Stepping-stone or trap' literature has investigated whether temporary work and atypical work can lead to a better career trajectory or worsen it (for an overview see Filomena and Picchio 2022). Most of these studies rely on retro-perspective population data or panel data at best, not differentiating between demand-side effects (caused by employers) and supply-side effects (caused by applicants). Pedulla (2016), Nunley *et al.,* (2017) and Baert, Verhaest (2019), and Author 2 are among the few who conducted field experiments to understand how employers' view unemployment and skill mismatches. So far, the findings are mixed: while Pedulla (2016) found skill underutilisation in previous jobs decreases the chances of being hired as much as a year of unemployment, Nunley *et al.,* (2017) and Author 2 found larger scarring caused by underemployment than skill mismatch, and Baert and Verhaest (2019) found evidence for a stronger penalising effect of unemployment than underemployment.

Drawing on signaling theory, employers may associate different forms of employment instability with different applicant characteristics. Qualitative interviews with employers have shown that besides skills, behavioural aspects such as maintaining a structured and

disciplined lifestyle are factors that employers pay attention to when screening applicants (Atkinson *et al.,* 1996). Following these findings, employment in deskilling jobs, as well as job hopping, should send a more positive signal than unemployment, since having a job, regardless of its qualities, may signal that individuals have been keeping a structured lifestyle. On the other hand, work in deskilling jobs can be associated with low confidence, low competitiveness and low competence (Pedulla, 2016), and frequent job changes can be interpreted as disloyalty, a lack of commitment and poor work ethic (Cohn *et al.*, 2016). In comparison, job hopping at an early career stage can be seen as relatively unproblematic, since employers may be aware that young people may need some time to find a permanent job. Hence, from the perspective of signaling theory, while it is unclear whether unemployment or work in deskilling jobs sends a more negative signal, job hopping should be perceived as the least negative signal.

From a human capital theory perspective, all three forms of employment instability can contribute to skills deterioration. While work in deskilling jobs and job hopping allow workers to retain some general skills, this is more difficult when being entirely out of work. Hence, unemployment is likely to be most detrimental. The negative aspects associated with frequent job change are primarily due to time spent acquiring firm-specific skills with every job change at the cost of using the time to developing occupation-specific expertise. Nevertheless, it can be assumed that workers have opportunities to develop some occupation-specific skills despite job changes. In contrast, development opportunities can be expected to be more limited if working in a position with few skills requirements. The strongest scarring effect can be expected for applicants showing a spell of unemployment, followed by deskilling job experience, and the weakest scarring caused by job hopping. Taken together:

Unemployment decreases the perceived employability more than work experience in deskilling jobs, and job hopping decreases the perceived employability the least (Hp. 1).

2.3 The impact of early employment instability across education groups

The Swiss education system is characterised by a strong dual vocational education and training (VET) system, in which the skills formation system is collectively organised involving employers and social partners as major stakeholders (Busemeyer and Trampusch 2012). The vocational education system is the most developed at the upper secondary level, and its popularity is reflected in the high enrolment rate of 50% (OECD, 2023). The dual vocational education system in Switzerland is highly institutionalised and standardised, and it has a strong emphasis on training at the workplace for students to acquire occupation-specific skills that can be readily used upon graduation without requiring more training (Bliem *et al.,* 2016).

The high degree of regulation and standardisation creates the foundation for reliability that allows employers to hire applicants with a dual VET degree with confidence regarding workers' qualities prior to the start of the employment relation. In addition to the high degree of recognition of VET certificates across firms, employers may keep their apprentices as regular employees after the training periods. This model has often been praised for providing smooth school-to-work transitions (Shavit and Müller 1988). The linkage between the vocational tertiary education and the labour market in Switzerland is less well investigated. For academic tertiary graduates, the transition into the labour market is less straightforward than for the upper secondary VET degree holders (Imdorf *et al.*, 2017), and at the career entry, the unemployment risks for the academic and vocational tertiary degree holders are at a similar level (Backes-Gellner and Geel 2014). However, at a later career stage, the unemployment risk for the vocational tertiary graduates becomes lower than for the academic tertiary graduates (ibd.). Based on these findings, it can be assumed that the labour market transition for both, the academic as well as for the vocational tertiary graduates, is less smooth than for the upper secondary VET graduates at least at the career entry stage.

While upper secondary VET graduates are expected to show smooth transitions given employers' high trust in vocational credentials (Müller, 2005), those who experienced a hampered school-to-work transition may be perceived as negatively selected (Author 1).

Given the less straightforward labour market transition for the tertiary degree holders, even for those with a vocational tertiary degree (building on Backes-Gellner and Geel 2014 and Imdorf *et al.*, 2017), forms of employment instability such as unemployment, deskilling work, or job hopping, can be considered to be a strong negative signal especially for upper secondary VET graduates than when compared with tertiary degree graduates. Similarly, workers with a lower secondary degree have comparatively little human capital to start with, hence there is little room for further skill deterioration. From a signaling theory perspective, the lower secondary degree already signals low ability and carries stigma, hence, employment instability may not add additional negative signal..

Given these characteristics of the Swiss education system, one can expect that graduates from upper secondary VET schools, which have the strongest alignment with the labour market, to experience the strongest scarring not only from unemployment but from other forms of employment instability (job hopping and deskilling work):

All three forms of employment insecurity decrease the perceived employability of workers with upper secondary VET more than for workers with other education credentials (tertiary and lower secondary credentials) (Hp. 2).

3. Study design and data

To understand how employers evaluate applicants' employment history, this study uses data from a factorial survey experiment (FSE) with employers. A main advantage of a factorial survey experiment is that it allows for the making of causal inferences (Auspurg and Hinz 2014) – in this case: between applicants' job history and employers' evaluation. Further, even though the employers are aware of the experimental setting, varying multiple applicant characteristics simultaneously decreases the chance that the respondents learn about the intentions of the study, which reduces socially desirable answering behaviour (ibd.). Nevertheless, the results need to be interpreted with the limitation in mind that these are employers' indicated hiring preferences rather than actual hiring behaviour.

3.1 Survey experiment design

The factorial survey experiment consists of a vignette experiment and a survey. Vignettes are hypothetical cases with multiple dimensions (experimental variables) that have varying levels (see Table 1 for the full vignette design). In this FSE the vignettes are CVs of fictional candidates, the dimensions are categories in the CVs, and the levels are the concrete characteristics of the dimensions (see figure A1 for a vignette illustration). The vignettes have four dimensions: *gender*, *education and work experience*, *unemployment* and *job hopping. Gender* has 2 levels: male; female. *Education and work experience* has 9 levels: 9 combinations of varying education and employment history that differ across the 3 education (lower secondary; upper VET secondary; vocational tertiary) and skills levels respectively (low; medium; high skills) and 3 types of occupation specificity (matching the advertised position; not matching the advertised position; work in a deskilling job). *Unemployment* has 7 levels: different duration and timing of unemployment. *Job hopping* has 2 levels: job hopping; no job hopping. A job hopping CV shows 5 different job positions within nearly 5 years, while a non-job hopping CV shows up to 3 different positions within the same time span. In all CVs – regardless of the number of job changes and the employment field – the job titles stay the same after each job change and the overall employment history amounts to nearly 5 years. Taking all dimensions and levels together, the vignette universe consists of 9 x 7 x 2^2 = 252 distinct vignettes. Based on the response rates from pretests, a D-efficient subset of 162 vignettes was chosen (see Table A1 for D-efficiencies). The D-efficient coefficients all exceed the recommended value of 90 (Auspurg and Hinz 2014), which ensures statistical power to achieve precise estimates. Not varied is the nationality or age of candidates: all candidates are Swiss nationals, and there is no explicit information about their age. Based on the year of graduation displayed on the CV and the type of education, however, respondents should be able to infer the approximate age of candidates.

- Table 1 here -

The 162 vignettes were randomly blocked into 18 decks at random order. A deck describes a set of vignettes, and each respondent received one deck. An “ideal” vignette,

which does not show any potential negative characteristics (such as unemployment, work in a deskilling job, or job hopping) was added to each deck at a randomly allocated place[3]. In the vignette experiment, each respondent was shown a deck of 10 vignettes and was asked to evaluate the chances of each applicant being hired for the advertised job position on a rating scale from 0 to 10, with 0 indicating no chance and 10 a very high chance. The survey captures information about the respondent, the job position and any requirements, as well as characteristics of the firm. As the employers are aware of the hypothetical nature of the CVs, their evaluations may deviate from actual hiring outcomes. However, because this experiment is testing for how employers evaluate education and job experience rather than more sensitive topics such as those in gender and race discrimination studies, social desirability bias can be expected to be small.

3.2 Sample of respondents

Publicly advertised vacancies across five occupational fields – mechanics, finance, health (nursing), catering, and ICT – which together cover a significant proportion of the Swiss labour market, were sampled in the German-speaking part of Switzerland in 2016[4]. The ISCO-08 codes were used to select a range of occupations within each occupational field to cover occupations of different skill levels and gender compositions. Using real vacancies has the advantage that respondents do not need to imagine a hypothetical job position against which they must evaluate the applicants, which benefits the external validity of the experiment. The actual advertisement collection process was carried out by the Swiss Job Market Monitor[5], which regularly conducts representative sampling of the Swiss labour market using all formal printed and online job platforms. Contact details were harvested from the job advertisements, and 2118 employers were contacted in total.

Employers were contacted by using email addresses provided in the job advertisements, and a response rate of 27%[6] was achieved, with 580 respondents having completed the entire survey and additional respondents having partially completed the survey (Table 2 shows descriptive statistics of the sample). Due to the unavailability of information on employers who did not participate, when interpreting the results, one needs be aware of possible unobservable characteristics that have led to participant self-selection. Each

vignette was evaluated by at least 6 respondents. The analysis includes respondents who have evaluated at least one vignette and have answered the survey items regarding job requirements. In total, the study draws on 6328 vignettes that were rated by 637 respondents.

- Table 2 here -

4. Analysis and results

4.1 Variables and model specifications

The key independent variable *employment instability* was recoded from the three original experimental variables *unemployment, education and work experience* and *job hopping* and shows the following 5 levels (see Table A2 for detailed recoding): no employment instability, unemployment, work in deskilling jobs, job hopping and more than one form of employment instability. Because *employment instability* is a recoded variable, and its original variables have different numbers of levels, the distribution of the levels in *employment instability* is not balanced. Work in a deskilling job is operationalised with the job title "call centre agent", which can be seen as an interim job and has few skills requirements (Callaghan and Thompson 2002). In Switzerland, the training for becoming a call agent is very short (4 to 6 weeks) in comparison to more traditional jobs with longer vocational education requirements, and the job involves tasks of low complexity, little responsibility and the turnover rates is high (between 8 to 50%) (Baumgartner *et al.* 2002, Grebner *et al.* 2003). Further, two variables measuring the match between the applicant's education and the required education for the advertised job were constructed using vignette-level information (candidate's education level and type) and respondent-level information (as the survey contains questions about the required level and type of education). The variable *horizontal match* has three values: *match*, *weak mismatch* and *strong mismatch*. *Match* applies if the candidate shows occupation-specific education as required by the job. *Weak mismatch* is defined if the candidate does not have occupation-specific education (operationalised with an education title in the retail sector, see Table 1) and the job does not have strict requirements for occupation-specific expertise. A

strong horizontal mismatch is defined when a candidate does not show occupation-specific education and the job has strict requirements for occupation-specific expertise. The variable *vertical match* has two values, *match* and *mismatch*, as all jobs in the sample require a specific level of education.

Using fixed effects models, the log-transformed and standardised employers' ratings are regressed on applicant's employment instability and education. Fixed effects models control for any employer heterogeneity, which may not be captured in the survey. And the log transformation is used to achieve a normal distribution of the residuals. To control for the applicants' features, the models control for the applicant's gender, for the order of the vignettes, as well as for the horizontal and vertical education match (full models are in Table A4). Model 1 in Table 3 shows all main effects. All three types of employment instability – unemployment (-1.20), job hopping (-1.33), and work in deskilling jobs (-2.42) – showed significant negative effects on employers' ratings. One point in rating difference is substantial, given the rating scale ranges from 0 to 10 and that recruiters tended to avoid extreme high ratings (75% of all vignettes were rated with less than 6 points).

- Table 3 here -

Post-estimation tests showed that the difference between unemployment and job hopping was not statistically different (0.13 [0.14], p=0.322), but work in deskilling jobs significantly decreased employers' rating more than both unemployment (-1.22 [0.18], p=0.000) and job hopping (-1.08 [0.22], p=0.000). Hypothesis 1, which stated that unemployment decreases the perceived employability more than deskilling job experience, did not find support. A possible explanation could be that in Switzerland, a country with high demand for skilled workers, employers are inclined to assume that working in deskilling jobs is likely due to workers' low confidence and ability to find a matching job, which again reflects the workers' capacity. In comparison, unemployment can be voluntary and due to reasons that are not related to the workers' competencies. To check the robustness of this finding, unemployment was distinguished between short (10 months) and long spells (20 months). The results showed that work in a deskilling job

was rated worse than both short (-1.41 [0.19], p=0.000) and long unemployment (-1.01 [0.18], p=0.000) (Model 1 in Table A3).

Against the expectation, job hopping decreased employers' evaluations as much as unemployment. This is surprising since, in comparison to applicants with unemployment experience, applicants who have been changing jobs frequently can be expected to be relatively unaffected by skills deterioration, as they have been continuously working. This finding indicates that the interruption of skills accumulation by changing workplaces is seen as detrimental as a period out of work. It can also indicate that workers' features that are associated with job hopping are similarly undesired as those associated with unemployment. Further, robustness checks differentiated between short and long unemployment spells (Model 1 in Table A3) and postestimation tests showed that not only was short unemployment not worse, but it was evaluated slightly more positively than job hopping (0.34 [0.16], p=0.031). The effects of a long spell of unemployment and of job hopping did not differ (-0.06 [0.14], p=0.635). Additional robustness checks were carried out to test whether the result may be driven by occupational fields' specific characteristics. The model was rerun five times, each time dropping the data from one occupational field. The results remained robust (Table A5). Hypothesis 1, stating that the strongest scarring effect is caused by unemployment, followed by work in deskilling jobs, and job hopping, was rejected.

Turning to the moderating effect of education, Model 2 (in Table 3) shows significant interaction terms between applicants' education and all three forms of employment instability: it was the upper secondary VET degree holders who were affected the strongest by all employment instability variables (see Figure 1 for the visualisation). Postestimation tests show that the differences in rating between upper secondary VET graduates and tertiary degree holders as well as lower secondary degree holders are significant. Hypothesis 2, stating that upper secondary VET graduates are penalised more strongly by all three forms of employment instability than lower secondary as well as tertiary degree holders, was supported. This result expands the previous finding in Author 1 – in Switzerland, upper secondary VET degree holders are penalised the most

when displaying unemployment – and shows that the detriment effects of other forms of employment instability are also the strongest for upper secondary VET degree holders.

- Figure 1 here –

The differences between the upper secondary VET and lower secondary degree holders are larger (unemployment effect (3.28 [0.37], p=0.000); job hopping effect (3.62 [0.44], p=0.000); deskilling work effect (3.99 [0.50], p=0.000)) than the differences between the upper secondary VET and tertiary degree holders (unemployment effect (0.57 [0.26], p=0.016); job hopping (0.77 [0.36], p=0.031); deskilling work effect (1.48 [0.51], p=0.004)). In line with the expectations as stated earlier in this paper, this finding indicates that low-skilled workers are the least scarred by previous employment instabilities. The limited stigma was expected, as low-skilled workers may be perceived to have low labour market affinity even without additional difficult employment experience (Bonoli and Hinrichs 2010). In fact, call centre jobs can be seen as skill-level-adequate rather than deskilling, which offers some explanation for the observed positive interaction effect.

Robustness checks shows that the difference between upper secondary VET and tertiary degrees might be partially driven by sector differences. The difference in unemployment effect between the upper secondary VET and tertiary degree holders is no longer significant when dropping the mechanics, finance, or catering sectors, and the difference in the job hopping effect between the two education groups is no longer significant when dropping mechanics and catering (Table A6). This indicates that the stronger unemployment scarring for upper secondary VET graduates is driven by recruiting mechanisms in the mechanics, finance, and catering sectors, and the stronger job hopping scarring is driven by the mechanics and catering sectors. The difference between the upper secondary VET and lower secondary graduates remained stable.

5. Discussions and conclusions

An important insight this article provides is that work in deskilling jobs after graduation is by far the most detrimental for a future job search – more than a spell of unemployment and more than job hopping. Contributing to the stepping-stone or trap literature, this study supports the results of the US-based study by Nunley *et al.,* (2017), who found that it is easier for unemployed candidates to find a job than underemployed candidates. But this study is at odds not only with the findings in the Belgian study by Baert and Verhaest (2019) suggesting the opposite, but also with Pedulla (2016), which found scarring effect of skills underutilisation to be as strong as a year of unemployment in the US.

The results in this study need to be interpreted in the Swiss context. Switzerland has low youth unemployment and the labour market is strongly occupationally segmented, making occupation changes difficult. In countries with less occupationally segmented labour markets and where employers are more willing to hire workers with non-occupation-specific skills, such skills mismatches may be less penalising (Di Stasio, 2017). The variety of findings indicates to some extent the country-specific contexts and emphasises that the stepping-stone or trap question needs to be evaluated by taking account of the specific institutional settings. Further, contrasting previous studies, the experimental design in this study mainly includes vocationally educated applicants, reflecting the Swiss education landscape. The variation in the experiment samples may also have contributed to differences in the results. One should also keep in mind that deskilling jobs are represented with the specific job title "call centre agent", which is often seen as an interim job requiring little training in Switzerland. However, the findings may differ when using different job titles to signal deskilling.

An unexpected finding is that unemployment and job hopping decrease the perceived employment chances to a similar extent. With the rise of flexicurity policies in many European countries that aim to decrease unemployment rates, non-standard employment trajectories such as hopping from one short-term job to another are increasing (Gebel and Giesecke, 2011). This article demonstrates that the consequences of job hopping are not

necessarily less harmful than that of unemployment, hence flexicurity policies should be designed with caution.

The second focus in this article is on how scarring effects vary across education groups. The findings show that in Switzerland, a country with a strong dual VET system, it is the upper secondary VET graduates who experience the strongest scarring for all three forms of employment instability. This highlights that the safety-net function of upper secondary vocational education may have its limits: while an upper secondary vocational education may facilitate graduates finding their first employment (Shavit and Müller 1988), it is less effective in overcoming initial employment instability. An explanation for this is that employers recruiting workers with upper secondary VET degrees may be unwilling to spend significant effort and resources to train new workers: precisely due to the strong labour market orientation in the upper secondary vocational training, employers have high expectations for new workers to bring along the required skills upon hiring. Further, these workers may be perceived as negatively selected. Even though the vocational tertiary education in Switzerland also has a strong focus on practical and occupation-specific skills, the transition for the tertiary graduates into the labour market at an early career stage is less straightforward (Backes-Gellner and Geel 2014 and Imdorf *et al.*, 2017). Employers may therefore be more benevolent towards initial employment instability in the case of tertiary educated applicants. The findings may also indicate that obsolescence of skills during unemployment, frequent job change, or work in deskilling job may be more severely evaluated for applicants with a secondary VET degree. This could potentially have serious consequences especially during time of fast technological development and changing skills requirements. Lastly, one needs to be aware of sectoral differences, as some moderating effects of education disappeared when dropping a sector at a time in the robustness checks. Further studies may want to explore sector-specific recruitment mechanisms.

In conclusion, using an innovative data set that allows measuring employers' evaluation of applicants' employment instability and education background, this article calls for caution when designing labour market policies aiming to push unemployed workers into the labour market in the Swiss context. This is especially important if this is at the cost of the job quality or employment stability as highlighted in studies on "flexicurity" policies (Gebel and Giesecke, 2011). This article also suggests that discussions around the safety-net function of an upper secondary vocational education need to be expanded to take individuals' long-term labour market outcomes into account.

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[1] In 2015 6.0% of people in the age group 15-24 in Switzerland were unemployed, and 47.1% of employments contracts were temporary contracts. In contrast, in the age group 25-54 3.9% of people were unemployed and the share of temporary contracts was at 8.1% (Eurostat, 2015; Eurostat, 2015).

[2] 2015 is chosen as the reference year, because the study was carried out mid 2016. The economic situation in 2015 is likely to be a relevant reference point for employers.

[3] Using the "ideal" vignette it is possible to measure how well the vignette design matches the sampled job positions. More detail about the "ideal" vignette is documented in the scientific use file of the research project (anonymised author).

[4] The study was carried out in four countries: Switzerland, Norway, Bulgaria and Greece. In this article I use the Swiss data only. A description of the whole sample is available in the scientific use file (anonymised author).

[5] The Swiss Job Market Monitor is affiliated with the University of Zurich, and the research team is led by Prof Marlis Buchmann at the Institute of Sociology https://www.stellenmarktmonitor.uzh.ch/en.html.

[6] This response rate is notably higher than comparable factorial survey experiments with employers. A Swiss study (Liechti *et al.*, 2017) achieved 15%, and 12% was achieved in a German study (Damelang and Abraham 2016).

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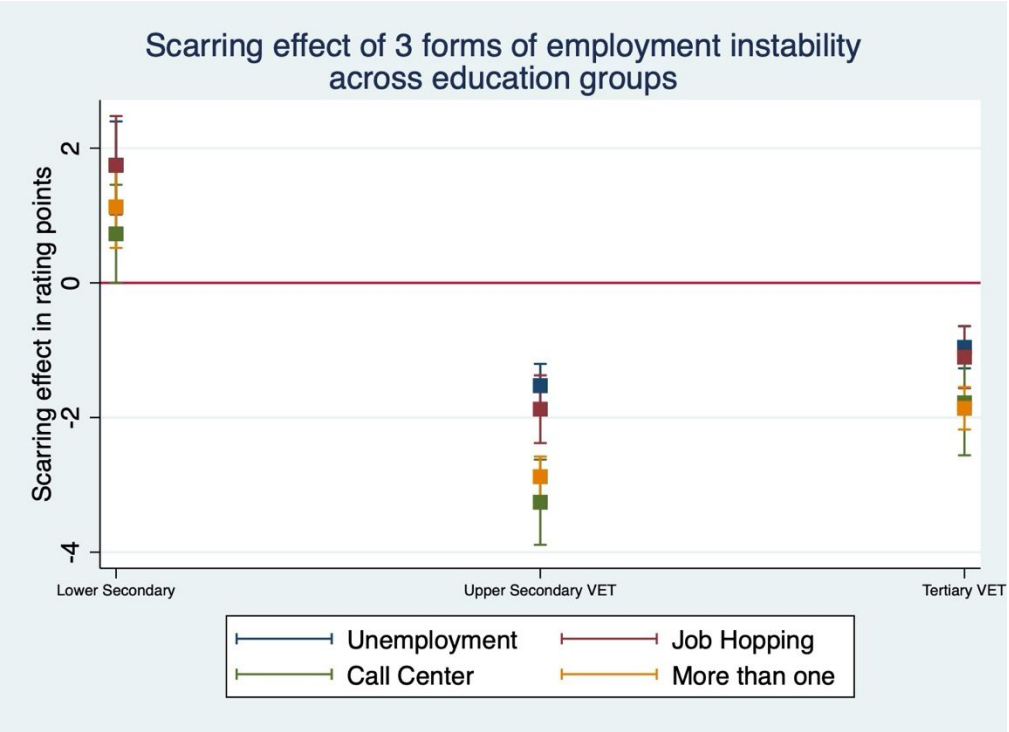
Figure 1: Scarring effects expressed in employers rating for different forms of employment instability. Margins plot with log-transformed dependent variable (vignette rating). The horizontal line is at 0 (no effect).



Note: Marginal effects show the change in ratings given to applicants and are based on coefficients estimated in Model 2 in Table 3. Overlapping confidence interval do not suggest statistically non-significant effects (only the reverse is true: not overlapping CIs indicate that results are statistically significant). Postestimation tests show that these differences are significant.

Source: Authors' own creation

Table 1: Vignette dimensions, levels and labels.

Experimental variables	Levels of the experimental variables	Labelling in the CV[1]	Distribution in %[2]
Duration and timing of unemployment	**1** No unemployment	No gap in CV	23
	2 10 months unemployment after graduation	Gap in CV labelled as "unemployment", timing and duration of unemployment spell can be inferred by reading the timeline in the CV	13
	3 20 months unemployment after graduation in unqualified jobs	Gap in CV labelled as "unemployment", timing and duration of unemployment spell can be inferred by reading the timeline in the CV	12
	4 10 months unemployment between jobs	Gap in CV labelled as "unemployment", timing and duration of unemployment spell can be inferred by reading the timeline in the CV *IT*: Call-centre agent with upper secondary	13
	5 20 months unemployment between jobs	Gap in CV labelled as "unemployment", timing and duration of unemployment spell can be inferred by reading the timeline in the CV	13
	6 10 months current unemployment	Gap in CV labelled as "unemployment", timing and duration of unemployment spell can be inferred by reading the timeline in the CV	13
	7 20 months current unemployment	Gap in CV labelled as "unemployment", timing and duration of unemployment spell can be inferred by reading the timeline in the CV	13
Gender	**1** Male	Man	49
	2 Female	Woman	51
Job hopping	**1** Job hopping	CV shows up to 3 different positions	45
	2 No job hopping	CV shows 5 different job positions	55

[1] Education credential and job titles are country-specific and may vary from the English translation.
[2] The percentage indicates the distribution of vignette characteristics (levels) within the specific dimensions in the sample of 6328 evaluated vignettes.

Experimental variables	Levels of the experimental variables	Labelling in the CV	Distribution in %
Level and occupation specificity of education and work experience	**1** Lower-secondary education and occupation-specific low-skill job experience	*Mechanics:* Unskilled mechanic with lower secondary degree *Finance*: Unskilled clerk with lower secondary degree *Health*: Unskilled nurse with lower secondary degree *Hospitality*: Unskilled waiter/waitress with lower secondary degree *IT:* Computer assistant with lower secondary degree	10
	2 Occupation-specific upper-secondary education and occupation-specific middle-skill job experience	*Mechanics*: Skilled mechanic with upper secondary VET degree in mechanic *Finance*: Financial service clerk with upper secondary VET degree in finance *Health*: Skilled nurse with upper secondary VET degree in nursing *Hospitality*: Skilled waiter/waitress with upper secondary VET degree in hospitality *IT*: Skilled IT specialist with upper secondary VET degree in IT	14
	3 Occupation-specific tertiary education and occupation-specific high-skill job experience	*Mechanics*: Chief mechanic with advanced mechanical education (associate or BA degree) *Finance*: Financial service manager with tertiary degree in finance *Health*: Head nurse with tertiary degree in nursing *Hospitality*: Chef de service with tertiary degree in hospitality *IT*: IT manager (associate or BA degree)	16
	4 Lower-secondary education and non-occupational low-skill job experience	*Retail sector*: Unskilled sales person with lower secondary degree	10

Experimental variables	Levels of the experimental variables	Labelling in the CV	Distribution in %
Level and occupation specificity of education and work experience	**5** Non-occupation-specific upper-secondary education and non-occupation-specific middle-skill job experience	*Retail sector*: Skilled sales person with upper secondary VET degree in retail trade	10
	6 Non-occupation-specific tertiary education and non-occupation-specific high-skill job experience	*Retail sector*: Sales manager with tertiary degree in retail trade	10
	7 Lower-secondary education and work experience in unqualified jobs	Call-centre agent with lower secondary degree	10
	8 Occupation-specific upper-secondary education and work experience in unqualified jobs	*Mechanics*: Call-centre agent with upper secondary VET degree in mechanic *Finance*: Call-centre agent with upper secondary VET degree in finance *Health*: Call-centre agent with upper secondary VET degree in nursing *Hospitality*: Call-centre agent with upper secondary *VET* degree in hospitality *IT*: Call-centre agent with upper secondary VET degree in IT	10
	9 Occupation-specific tertiary education and work experience in unqualified jobs	*Mechanics*: Call-centre agent with advanced mechanical education (associate or BA degree) *Finance*: Call-centre agent with tertiary degree in finance *Health*: Call-centre agent with tertiary degree in nursing *Hospitality*: Call-centre agent with tertiary degree in hospitality *IT*: Call-centre agent with tertiary degree in IT	10

Source: Authors' own creation

Table 2: Descriptive statistics of the sample

Sectors	**N**	**%**
Mechanics	114	17.90
Financial Services	102	16.01
Health	181	28.41
Hospitality	98	15.38
ICT	142	22.29
Public or private sector		
Public	119	18.68
Private	438	68.76
Other	26	4.08
Number of employees		
Small (up to 49 employees)	81	12.72
Medium (between 50 and 249 employees)	248	38.93
Large (250 or more employees)	243	38.15
Gender of the recruiter		
Male	313	49.14
Female	268	42.07
Recruiter completed formal HR training		
Yes	297	46.62
No	286	44.90
Total	637	100

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

Source: Authors' own creation

Table 3: Fixed effects models with log-transformed dependent variable (vignette rating): employment instability scarring

	Model 1	Model 2
Employment instability (Ref. no Employment instability)		
Unemployed	-1.20***	-1.53***
	(0.11)	(0.16)
Job hopping	-1.33***	-1.88***
	(0.16)	(0.26)
Deskilling job	-2.42***	-3.26***
	(0.19)	(0.32)
More than one employment instability	-2.15***	-2.88***
	(0.11)	(0.15)
Applicant education level (Ref. upper secondary)		
Lower Secondary	0.83***	-2.73***
	(0.15)	(0.35)
Tertiary	0.08	-0.62**
	(0.14)	(0.22)
Employment instability * Applicant education(Ref. no employment instability # upper secondary VET)		
Unemployed # Lower Secondary		3.28***
		(0.37)
Unemployed # Tertiary VET		0.57*
		(0.24)
Job hopping # Lower Secondary		3.62***
		(0.44)
Job hopping # Tertiary VET		0.77*
		(0.36)
Deskilling job # Lower Secondary		3.99***
		(0.50)
Deskilling job # Tertiary VET		1.48**
		(0.51)
More than one employment instability # Lower Secondary		4.01***
		(0.36)
More than one employment instability # Tertiary VET		1.02***
		(0.22)
Constant	6.21***	6.73***
	(0.11)	(0.15)
Observations	6,328	6,328
Number of respondetns	637	637

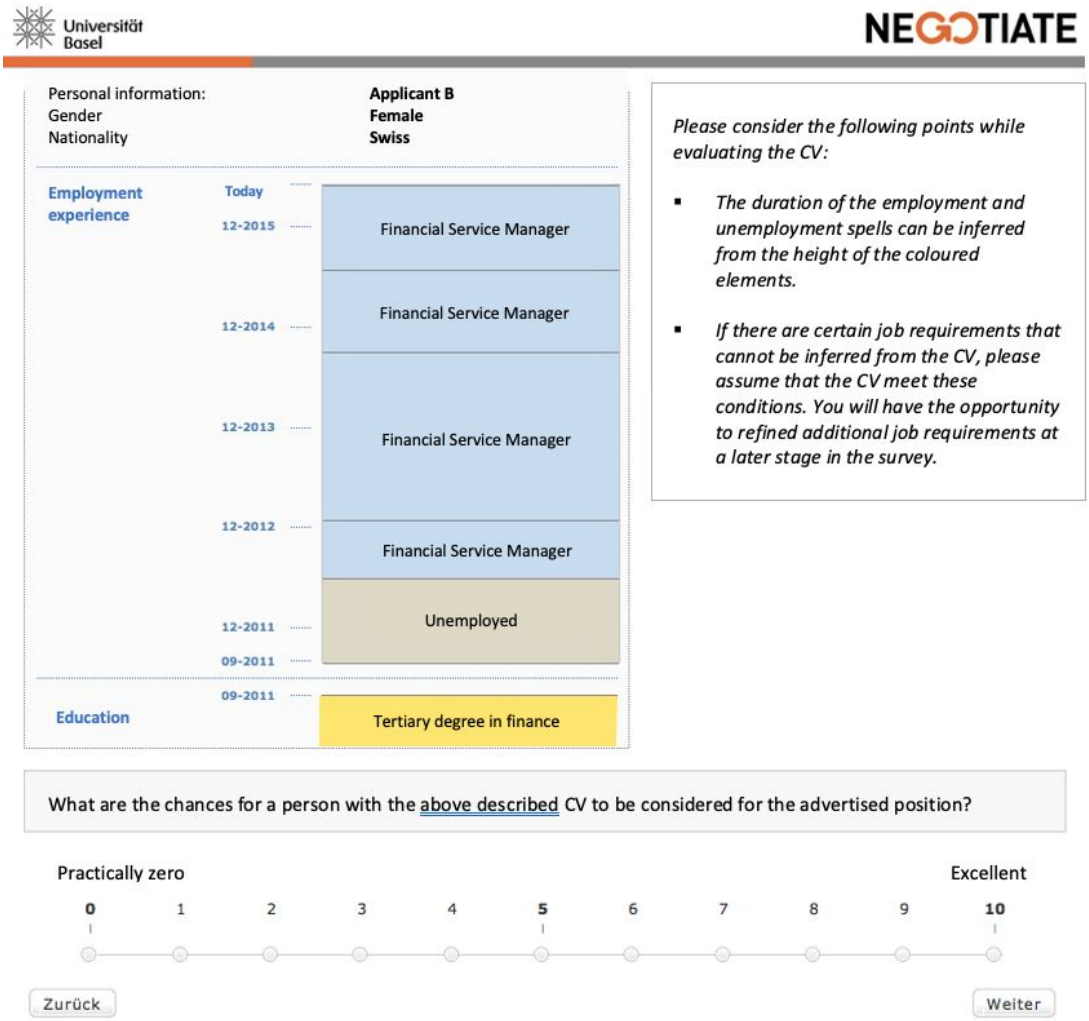
R-squared	0.34	0.35

Robust standard errors in parentheses
*** p<0.001, ** p<0.01, * p<0.05
Notes: All models control for applicant's gender, applicant's education, horizontal and vertical match in education, and vignette order.

Source: Authors' own creation

Online supplementary material

Figure A1 Sample of CV (English translated version).



Source: Authors' own creation

Table A1: D-efficiency coefficients.

Model Specification	
1. Main Effects	99.8
2. Main Effects + Interaction (2 x 2)	99.7
3. Main Effects + Interaction (2 x 7)	99.4
4. Main Effects + Interaction (2 x 9)	99.5
5. Main Effects + Interaction (7 x 9)	97.9
6. Main Effects + All Two-Way Interactions	94.6
Number of vignettes	162

Source: Authors' own creation

Table A2: Main independent variable *employment instability.*

Recoding of original variables	Level of new variable "employment instability"	Frequency	Percent
If "unemployment" == 1 (no unemployment) AND "Level and occupation specificity of education and work experience and job hopping" != 7, 8, 9 (has NOT worked as a call-centre agent) AND "national specific variable" (in Switzerland it is job hopping experience) == 1 (no job hopping experience)	1. No employment instability	888	14
If "unemployment" != 1 AND "Level and occupation specificity of education and work experience and job hopping" != 7, 8, 9 AND "national specific variable" (in Switzerland it is job hopping experience) == 1	2. Unemployment	1644	26
If "unemployment" == 1 AND "Level and occupation specificity of education and work experience and job hopping" == 7, 8, 9 AND "national specific variable" (in Switzerland it is job hopping experience) == 1	3. Deskilling job	323	5
If "unemployment" == 1 AND "Level and occupation specificity of education and work experience and job hopping" != 7, 8, 9 AND "national specific variable" (in Switzerland it is job hopping experience) != 1	4. Job hopping	174	3
The rest of combinations of the three variables "unemployment", "Level and occupation specificity of education and work experience and job hopping", and "national specific variable" that has not been covered above	5. More than one employment instability	3307	52
Total		**6328**	**100**

Source: Authors' own creation

Table A3 Robustness check model**:** Model 1 differentiates between short (10 months) and long unemployment (2 months). Fixed effects models with log-transformed dependent variable (vignette rating).

	Model 1
Employment instability (Ref. no employment instability)	
Short unemployment	-1.01***
	(0.12)
Long unemployment	-1.42***
	(0.13)
Job hopping	-1.35***
	(0.16)
Deskilling job	-2.42***
	(0.19)
More than one employment instability	-2.16***
	(0.11)
Applicant education (Ref. upper secondary VET)	
Lower Secondary	0.79***
	(0.15)
TertiaryVET	0.06
	(0.14)
Horizontal match in education (Ref. match)	
Weak mismatch	-2.78***
	(0.18)
Strong mismatch	-3.38***
	(0.15)
Vertical match in education (Ref. match)	
Mismatch	-0.30*
	(0.14)
Applicant gender (Ref. female)	
Male	0.03
	(0.05)
Vignette order (Ref. 3rd to 10th vignette)	
1st or 2nd vignette	-0.31***
	(0.08)
Constant	6.22***
	(0.11)
Observations	6,328
R-squared	0.34
Number of recrutID	637
Robust standard errors in parentheses	
*** p<0.001, ** p<0.01, * p<0.05	

Source: Authors' own creation

Table A4 Full models: Fixed effects models with log-transformed dependent variable (vignette rating).

	Model 1	Model 2
Employment instability (Ref. no Employment instability)		
Unemployed	-1.20***	-1.53***
	(0.11)	(0.16)
Job hopping	-1.33***	-1.88***
	(0.16)	(0.26)
Deskilling job	-2.42***	-3.26***
	(0.19)	(0.32)
More than one employment instability	-2.15***	-2.88***
	(0.11)	(0.15)
Applicant education (Ref. upper secondary VET)		
Lower Secondary	0.83***	-2.73***
	(0.15)	(0.35)
Tertiary VET	0.08	-0.62**
	(0.14)	(0.22)
Employment instability * Applicant education (Ref. no employment instability # upper secondary VET)		
Unemployed # Lower Secondary		3.28***
		(0.37)
Unemployed # Tertiary VET		0.57*
		(0.24)
Job hopping # Lower Secondary		3.62***
		(0.44)
Job hopping # Tertiary VET		0.77*
		(0.36)
Deskilling job # Lower Secondary		3.99***
		(0.50)
Deskilling job # Tertiary VET		1.48**
		(0.51)
More than one employment instability # Lower Secondary		4.01***
		(0.36)
More than one employment instability # Tertiary VET		1.02***
		(0.22)
Horizontal match in education (match)		
Weak mismatch	-2.81***	-2.85***
	(0.18)	(0.18)
Strong mismatch	-3.41***	-3.46***
	(0.15)	(0.14)
Vertical match in education (Ref. match)		
Mismatch	-0.30*	-0.30*
	(0.14)	(0.14)

Applicant gender (Ref. female)		
male	0.04	0.00
	(0.05)	(0.04)
Vignette order (3rd to 10th vignette)		
1st or 2nd vignette	-0.31***	-0.29***
	(0.08)	(0.08)
Constant	6.21***	6.73***
	(0.11)	(0.15)
Observations	6,328	6,328
Number of respondents	637	637
R-squared	0.34	0.35

Robust standard errors in parentheses

*** p<0.001, ** p<0.01, * p<0.05

Source: Authors' own creation

Table A5 Robustness check models: Each model drops one occupational field. Model 1 excludes the mechanics, model 2 finance, model 3 health (nursing), model 4 catering, and model 5 the ICT sector. The results remain stable.

	Model 1	Model 2	Model 3	Model 4	Model 5
Employment instability (Ref. no employment instability)					
Unemployed	-1.26***	-1.35***	-1.05***	-1.28***	-1.03***
	(0.13)	(0.12)	(0.13)	(0.12)	(0.12)
Job hopping	-1.28***	-1.50***	-1.21***	-1.48***	-1.16***
	(0.19)	(0.17)	(0.19)	(0.18)	(0.18)
Deskilling job	-2.25***	-2.68***	-2.29***	-2.47***	-2.36***
	(0.21)	(0.21)	(0.23)	(0.21)	(0.22)
More than one employment instability	-2.10***	-2.31***	-2.11***	-2.21***	-1.99***
Applicant education (Ref. upper secondary VET)					
	(0.12)	(0.12)	(0.12)	(0.12)	(0.12)
Lower Secondary	0.72***	0.88***	0.96***	0.84***	0.79***
	(0.16)	(0.17)	(0.17)	(0.16)	(0.20)
Tertiary VET	0.16	0.16	-0.30*	0.10	0.26
	(0.15)	(0.16)	(0.14)	(0.16)	(0.19)
Constant	6.15***	6.42***	6.54***	5.99***	6.00***
	(0.13)	(0.12)	(0.12)	(0.12)	(0.13)
Observations	5,198	5,314	4,526	5,357	4,917
Number of recrutID	524	535	455	539	495
R-squared	0.33	0.37	0.33	0.36	0.33
Robust standard errors in parentheses					
*** p<0.001, ** p<0.01, * p<0.05					
Notes: All models control for applicant's gender, applicant's level of education, horizontal and vertical match in education, and vignette order.					

Source: Authors' own creation

Table A6 Robustness check models: Each model drops one occupational field. Model 1 excludes the mechanics, model 2 finance, model 3 health (nursing), model 4 catering, and model 5 the ICT sector. In model 1 and 4, the interactions of tertiary degree with unemployment and job hopping, and in model 2 the interaction of tertiary degree with unemployment are no longer significant.

	Model 1	Model 2	Model 3	Model 4	Model 5
Employment instability (Ref. no employment instability)					
Unemployed	-1.51***	-1.60***	-1.69***	-1.44***	-1.40***
	(0.19)	(0.18)	(0.18)	(0.19)	(0.18)
Job hopping	-1.82***	-2.01***	-2.16***	-1.59***	-1.82***
	(0.28)	(0.27)	(0.31)	(0.26)	(0.31)
Deskilling job	-2.98***	-3.45***	-3.38***	-3.26***	-3.23***
	(0.33)	(0.37)	(0.39)	(0.36)	(0.37)
More than one employment instability	-2.69***	-2.96***	-3.16***	-2.92***	-2.67***
	(0.17)	(0.17)	(0.17)	(0.17)	(0.17)
Applicant education (Ref. upper secondary VET)					
Lower Secondary	-2.75***	-2.72***	-3.06***	-2.76***	-2.28***
	(0.42)	(0.40)	(0.35)	(0.39)	(0.41)
Tertiary VET	-0.36	-0.43	-1.43***	-0.50*	-0.44
	(0.25)	(0.25)	(0.23)	(0.25)	(0.29)
Employment instability * Applicant education (Ref. no employment instability # upper secondary VET)					
Unemployed # Lower Secondary	3.19***	3.30***	3.78***	3.21***	2.92***
	(0.44)	(0.41)	(0.38)	(0.40)	(0.40)
Unemployed # Tertiary VET	0.42	0.45	1.14***	0.35	0.58*
	(0.27)	(0.26)	(0.26)	(0.26)	(0.27)
Job hopping # Lower Secondary	3.71***	3.63***	4.33***	3.17***	3.32***
	(0.51)	(0.48)	(0.50)	(0.45)	(0.49)
Job hopping # Tertiary VET	0.63	0.81*	1.28**	0.31	0.91*
	(0.40)	(0.38)	(0.41)	(0.38)	(0.43)
Deskilling job # Lower Secondary	3.77***	4.16***	4.23***	4.16***	3.60***
	(0.56)	(0.56)	(0.55)	(0.54)	(0.57)
Deskilling job # Tertiary VET	1.47**	1.08*	2.15***	1.27*	1.53**
	(0.55)	(0.54)	(0.61)	(0.57)	(0.56)
More than one employment instability # Lower Secondary	3.84***	4.06***	4.55***	4.17***	3.42***
	(0.43)	(0.40)	(0.36)	(0.39)	(0.41)
More than one employment instability # Tertiary VET	0.74**	0.87***	1.56***	0.95***	1.03***
	(0.24)	(0.24)	(0.25)	(0.24)	(0.25)
Constant	6.56***	6.88***	7.31***	6.46***	6.49***
	(0.17)	(0.16)	(0.15)	(0.16)	(0.17)

Observations	5,198	5,314	4,526	5,357	4,917
Number of recrutID	524	535	455	539	495
R-squared	0.34	0.38	0.35	0.37	0.34

Robust standard errors in parentheses

*** p<0.001, ** p<0.01, * p<0.05

Notes: All models control for applicant's gender, applicant's level of education, horizontal and vertical match in education, and vignette order.

Source: Authors' own creation