Workplace training in Germany and its impact on subjective job security: Short- or long-term returns?

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Abstract
Based on data from the Socio-Economic Panel (SOEP) study, this article analyses the effects of workplace training in Germany on subjective job security. Using fixed-effects models, this article tests whether workplace training has positive effects on perceived job security, and if so, whether the returns are of a short- or long-term nature. The results confirm a positive effect of workplace training on perceived job security, not only in the short term but in the long term as well. The inclusion of interaction terms for different levels of education shows that low-educated individuals benefit most from participation in workplace training. The immediate effect on subjective job security is strongest, and the post-training effect is most sustained for this group compared to those with higher levels of education. Lower-educated employees often lack access to workplace training, however. The authors conclude that workplace training has the potential to be a mutually beneficial investment for both employers and employees. More targeted policy incentives should aim at enhancing access to workplace training, most importantly for the low-educated, as for them training might be an effective means for improved employment prospects.

Introduction

An objective shared by all working people – regardless of their educational background, occupational position, or age – is to achieve high job security throughout working life. Research on the importance of both objective and subjective job security has gained increasing attention in the social sciences over recent years. A high level of subjective job security is an important determinant of a number of positive life outcomes and is therefore a major policy objective. Empirical research has shown that

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these positive outcomes are related not only to the labour market but also to other important areas of life (Chung and Mau, 2014).

Given the relevance of perceived job security for various (economic) outcomes, it is crucially important to identify the factors that make people feel more secure in their jobs. Furthermore, a better understanding is needed of whether some determinants affect different socio-economic groups in different ways. Cross-country studies have shown that differences in economic and labour market conditions but also individual determinants such as educational levels and participation in workplace training are powerful predictors of perceived job security (Chung and Van Oorschot, 2010, 2011). So far, however, there has been little longitudinal research on the determinants of subjective job security. On the methodological level, this gap in the existing research raises questions about the causality between various potential determinants and subjective job security. Moreover, it leaves unresolved the question of how sustainable positive effects on subjective job security may be in the long run.

The contribution of this article is to extend existing knowledge on the determinants of subjective job security by analysing the effects of workplace training participation on perceived job security for different levels of educational attainment. This article has three purposes: first, to illustrate that participation in workplace training offers a means of increasing individual subjective job security. Second, it aims to show that the effects of workplace training participation on perceived job security differ among different socio-economic groups – in particular, by educational levels. Third, it provides evidence that workplace training not only affects subjective job security in the short term but also has continuing long-term returns. The emphasis of this article on long-term benefits is unique as it goes well beyond the existing research, which has focused mainly on the observable effects immediately after participation in workplace training. As we argue here, it is also important to consider whether workplace training can have a sustained positive effect on job security, beyond the first year after the participation in training.

Based on longitudinal data from the German Socio-Economic Panel (SOEP) study, this article analyses the short- and long-term effects of workplace training on subjective job security in Germany. For the analysis, we estimate models stratified by levels of educational attainment (International Standard Classification of Education–1997 (ISCED-97)) that include individual fixed effects in order to control for unobserved heterogeneity. The unbalanced panel covers the years 2000 to 2011, a period that is of particular interest for Germany as it marks a time when the center–left coalition under Chancellor Schroeder passed a number of groundbreaking labour market reforms.

The remainder of this article is organized as follows: Section 'State of research' sets out the theoretical framework that motivates the empirical analysis. The third section presents our hypotheses. 'Data, measures and methods' are described in the following section. The 'Results' section discusses the results and 'Conclusion' section explores the empirical findings and provides some concluding remarks.

State of research

Subjective job security positively affects a broad range of desirable (economic) outcomes. Growing awareness among social scientists not only led to increased research on the determinants of subjective job security, but also on its conceptualization.

Subjective job security

Subjective job security has been identified as a central feature of job security (Greenhalgh and Rosenblatt, 1984, 2010). Borg and Elizur (1992), for instance, formulated a definition of job security that stresses the importance of subjective fears of job loss, differentiating between *cognitive job insecurity* (the estimated probability of losing one's job) and *affective job insecurity* (fears that come from the thought of losing one's job) (cp. Carr and Chung, 2014). Chung and Mau (2014) argue that the concept of affective job insecurity applies to people who are 'truly insecure' because it refers primarily to anxieties related to potential job loss. As a consequence, the concept excludes individuals who are afraid of job loss but confident that they would be able to find

another job soon. In this article, we focus on affective job insecurity.[1] In our view, the concept of affective job insecurity encompasses a variety of aspects. According to Greenhalgh and Rosenblatt (1984: 440), one can distinguish between the 'fear to lose the job and the fear to lose specific and particularly valued characteristics of the existing job'. These theoretical considerations illustrate that affective job insecurity is multidimensional. All the different dimensions of affective job insecurity relate to feelings of powerlessness and fears of job loss, however, which are best captured by the following definition: job insecurity is 'the discrepancy between the security a person experiences and the level she or he would prefer' (Hartley et al., 1991: 7).

Based on these different conceptualizations, subjective job insecurity has been explored in a wide range of empirical analyses. One major finding is that the effects of subjective job security are not only short term, but often affect longer periods of people's careers and life courses. Individuals with fewer job concerns are more satisfied – not only with their employment situation but also with life in general (Berth et al., 2005; Geishecker, 2012). This close relationship between job security and life satisfaction explains why job security concerns also affect family choices such as the decision to marry or have children (Kreyenfeld, 2010; Lozza et al., 2013). Other possible long-term consequences of job insecurity include mental health issues and lower job performance and higher intention to change jobs (Chirumbolo and Hellgren, 2003; Greenhalgh and Rosenblatt, 2010; Sverke et al., 2002). In light of the long-term consequences of (affective) job insecurity, it seems quite important to identify factors that sustainably mitigate fears of job loss.

Feelings of job insecurity are influenced by institutional arrangements and economic conditions (Anderson and Pontusson, 2007; Mau et al., 2012) as well as individual characteristics: highly educated and non-manufacturing workers as well as men, relative to women, fear job loss less (Anderson and Pontusson, 2007). Chung and Van Oorschot (2010) found that individuals who participated in workplace training in the past 12 months show a stronger sense of job security. Moreover, existing research on subjective job insecurity shows that individual fears of job loss are correlated with, although not determined by, social status and labour market position (Greenhalgh and Rosenblatt, 1984). Lengfeld and Hirschle (2009) showed that fears of job loss have increased across all social classes in Germany since the 1990s. Strikingly, for parts of the middle class, these fears have grown at a disproportionate rate and are found even when controlling for changes in the employment structure. This finding implies that affective job insecurity may develop independently of the actual employment status.

Returns on workplace training

As outlined above, job insecurity is closely related to feelings of powerlessness and loss of control (Greenhalgh and Rosenblatt, 2010). From another strand of research, we know that education is an effective means of empowering individuals (see, for example, OECD, 2011). Following this line of thought, workplace training should be an instrument to make employees feel more secure. After the school-to-work transition, workplace training is one means for employees to invest in their human capital and their job-specific skills. If, on the one hand, education succeeds in contributing to increased control and empowerment, and, on the other hand, if it signals the value attributed to an employee's work, then workplace training might positively affect the employee's subjective job security. To the best of our knowledge, there have been few studies to date that have explored the relationship between participation in workplace training and subjective job security (except for Chung and Van Oorschot, 2010).

There is, however, extensive research that demonstrates the positive short- and long-term impacts of workplace training on employment careers. In a comparative study for Germany, Denmark and the United Kingdom, Dieckhoff (2007) found a significantly positive effect of workplace training on the transition from unemployment to employment, increased upward mobility to better labour market positions and a negative effect on the likelihood to become unemployed. Positive wage effects have been confirmed by Gerfin (2004), Arulampalam and Booth (2001) and Wolter and Schiener (2009).

Most studies showed that the returns depend on the particular aspects of the training (e.g. type of training and labour market position) and on ascriptive characteristics (e.g. age and race) (Mincer, 1962). The benefits of workplace training are influenced primarily by the education level of participants, whereas it is unclear whether higher- or lower-qualified people benefit to a greater extent. Wolter and Schiener (2009) showed that wage effects are higher for employees with a lower secondary degree than for those with a medium or higher degree. In contrast, Dieckhoff (2007) showed that higher-educated individuals benefit more from workplace training in terms of unemployment risks and upward occupational mobility than lower-educated individuals.

These differential effects might be a consequence of the specific institutional characteristics of the German education and qualification system, which imply that disadvantages experienced in an early stage of the educational career are difficult to overcome and therefore are a strong determinant of labour market outcomes in the subsequent employment career (Allmendinger, 1989; Solga, 2008). Therefore, the German qualification system produces strong insider/outsider disparities, in which low-educated individuals – in particular, those who lack any professional qualifications – are marginalized at the periphery of the labour market and more likely to be excluded from stable employment (Giesecke et al., 2010). Since the implementation of the Hartz reforms (2003–2005), the marginalization of individuals in weaker labour market positions has increased further. These reforms aimed at reducing the persistently high unemployment rates by promoting labour market flexibility (Clasen and Clegg, 2011; Eichhorst and Marx, 2011) at a time when Germany was portrayed as the 'sick man of Europe' (Reisenbichler and Morgan, 2012). The confluence of high unemployment rates and far-reaching labour market reforms had repercussions on people's expectations of continuous employment. These expectations in turn are likely to have consequences for subjective job insecurity.

In sum, research confirms that workplace training has a positive effect on employment outcomes, but shows that not all socio-demographic groups benefit to the same extent.

Hypotheses

This article tests whether participation in workplace training positively affects the individual's affective job security. The confluence of soaring unemployment and fundamental labour market reforms has had repercussions on subjective job security during the first decade of the century. Individuals perceived an increased probability of unwanted job termination and became acutely aware of the potential implications of being laid off (Muñoz de Bustillo and de Pedraza, 2010). We therefore expect a general downward trend in affective job security in Germany over this period (see Lengfeld and Hirschle, 2009).

> Hypothesis 1 (H1): Affective labour market security decreased in the aftermath of the Hartz reforms in Germany.

The previous section illustrated that subjective job security is correlated with a number of positive (economic) outcomes, feelings of social security and locus of control at large. In most studies, subjective job security serves as an explanatory variable for higher levels of life satisfaction or well-being. Little evidence is available on the determinants of affective job security, however (an exception is the study by Anderson and Pontusson, 2007). In particular, few studies have explored the link between participation in workplace training and subjective job security. Available evidence (Dieckhoff, 2007; Wolter and Schiener, 2009) confirms that workplace training mitigates labour market risks, but leaves open whether workplace training also leads to increased affective job security.[2] Given that participation in workplace training reduces certain labour market risks, we expect a positive association between workplace training and affective job security.

> Hypothesis 2 (H2): Participation in workplace training increases affective labour market security.

Our analysis goes beyond existing research by focusing on the potential long-term benefits of workplace training. So far, research confirms that low levels of job security have negative repercussions on a

number of long-term outcomes. Therefore, it is of crucial importance to decrease fears of job loss in the long run. Some evidence showed that participation in training has a stabilizing long-term effect on employment careers (see Dieckhoff, 2007; OECD, 2004). In line with these findings, one could assume that workplace training has positive short-term and long-term outcomes on affective job security as well.

> Hypothesis 3 (H3): Participation in workplace training not only affects affective job security in the short term but also stabilizes affective job security in the long term.

Returns of workplace training vary by educational attainment (Dieckhoff, 2007; Wolter and Schiener, 2009). It is likely that this assumption holds true for the returns to workplace training as well. In this article, we argue that the existing structure of the qualification system channels the effects of workplace training with respect to perceived job security. The empirical evidence concerning the effects of training is mixed, however. Some studies show that higher-qualified individuals tend to have better access and to benefit to a higher extent from workplace training, especially in terms of occupational upward mobility and the avoidance of unemployment (Dieckhoff, 2007). Other studies found that wage effects are higher for low-educated workers (Wolter and Schiener, 2009).

In the highly stratified German labour market, access to workplace training is limited for lower-educated people (Allmendinger, 1989; Rasner and Zimmer, 2012). We therefore argue that the possibility to participate in workplace training would reduce fears of job loss more for those starting in a disadvantageous labour market position than for higher-educated people. Hence, the marginal returns to workplace training might be higher for this group when compared to high-educated individuals.

> Hypothesis 4 (H4): Low-educated individuals benefit more than high-educated individuals from workplace training participation, showing larger improvements in affective job security in both the short and long terms.

Data, measures and methods

Sample specification and analysis population

Our analysis focuses on working-age individuals who participate in workplace training. For this group, we want to estimate the short- and long-term effects of training participation on affective job security that requires the use of longitudinal data. We therefore use data from the longest-running panel study in Germany, the SOEP. The SOEP provides a representative sample of the total population living in private households in Germany (Wagner et al., 2008). The most recent data available was collected in 2012.[3] The SOEP offers objective indicators on demographics, labour market characteristics, household composition and income, but also subjective indicators such as job satisfaction and perceived job security. In this article, we use data for the years 2000 through 2012. We restrict the sample population to people of working age and exclude individual data for years in which information on affective job security is missing although individuals reported being employed.

To identify training episodes[4] in the data, we make use of the employment calendar that asks individuals about their employment status from January through December of the previous year. One of the items asks individuals whether they participated in further training, retraining or further professional education in the year prior to the interview. We focus on the first episode of participation in further education during the period of observation, because we expect this spell to be most decisive for the perceived job security. We are not interested in the effects of multiple training events, because previous research has established the declining marginal productivity of each additional training episode (see Arulampalam and Booth, 2001).[5] Some individuals might have participated in workplace training before the year 2000 (the first year of the observation period). For these cases, we may have mistaken a later training episode for the first one in the individual's career. Due to the declining marginal productivity of additional training spells, our model estimates are fairly conservative. Since we want to

compare the individual's affective job security before and after the training, data have to be available for at least 2 years: the year before the training spell ($t - 1$) and the year after (t).

Each individual who fits the above criteria becomes part of the analysis population. These criteria apply to a total of 1713 individuals (12,463 years of observations). The estimation of conditional fixed-effects models (see Section 'Methods and empirical strategy') requires variation in the dependent variable 'affective job security' over time. As a result of this restriction, 683 individuals with a total of 3995 person years are dropped from the sample. The final sample includes 1025 individuals with a total of 8468 years of observation. Individuals contribute between 2 and 12 years of their panel biography, an average of 8 years.

Indicators

The focus of our analysis is the individual's affective job security before and after training participation. In line with the theoretical considerations, we adopt the concept of Hartley et al. (1991). This type of job-related uncertainty is best captured by the following SOEP question: 'How concerned are you about the following issues?' In this multi-item scale, one item asks respondents, 'If you are employed: your job security'.[6] Respondents can rate their perceived job security on a scale from 1 (very concerned), 2 (somewhat concerned) to 3 (not concerned at all). For the multivariate analysis, we generate a dummy variable that distinguishes individuals who are concerned (either 'very concerned' or 'somewhat concerned') from those who are not.[7] This variable is in line with Hartley's definition of job security since people who are either 'very concerned' or 'somewhat concerned' feel a discrepancy between their preferred and actual level of job security.

The main explanatory variable in our model is the individual's participation in workplace training. The model estimates how workplace training participation affects within-individual changes in the likelihood of having job concerns. Our model goes beyond existing research as it estimates three coefficients that capture the short- and long-term effects of workplace training: First, a variable that estimates within-individual changes in the likelihood of having job concerns before participation in workplace training (henceforth, *general time trend*). The second parameter measures the short-term *immediate effect*, namely, how workplace training participation changes the likelihood of having job concerns before ($t - 1$) and after (t) the first training episode. The third parameter is an interaction of the first two variables, for example, the general time trend and the immediate effect of workplace training participation. This parameter estimates the *post-training trend*, namely, changes in the likelihood of having job concerns after participation in training. With this specification, we test whether workplace training has sustained positive long-term effects on the individual's affective job security that last longer than 1 year. We outline the reasoning behind this specification in more detail below (see section 'Methods and empirical strategy').

In line with the theoretical considerations (see Section 'State of research'), the effects of workplace training on perceived job security differ across educational groups. It has been shown repeatedly in the literature that perceived job security grows with educational attainment (Hank and Erlinghagen, 2011). We argue that low-educated individuals with basic and general education benefit to a greater extent from participation in workplace training than individuals with high levels of education. The empirical model used in our analysis includes interaction terms for workplace training (general time trend, immediate effect as well as the post-training trend) with different levels of educational attainment. Based on the ISCED-97 classification (United Nations Educational, Scientific and Cultural Organization (UNESCO), 1997), this article differentiates among those with *lower* (basic and general elementary), *intermediate* (middle vocational and vocational plus Abitur) and *upper secondary or tertiary* (higher vocational and university) education.[8]

In line with our hypotheses, we further analyse the influence of job-specific characteristics on affective job security, namely, *job changes with the same employer* and *job changes to a different employer* (see Carless and Arnup, 2011) as well as *time spent with the same employer*. The model controls for the transition from a fixed-term to a permanent contract and the duration of time since the last episode of

unemployment. Furthermore, the model incorporates an interaction term for civil servants. The occupational position of civil servants guarantees high levels of objective and thus also affective job security as well as better workplace training options. Since marital stability may also affect perceived job security (Larson et al., 1994), the model takes different marital transitions into account: the transition to marriage, the transition to divorce and widowhood. To control for the influence of macroeconomic conditions on affective job security, we include year- and region-specific unemployment rates as a possible predictor of affective job security (e.g. Campbell et al., 2007).

Methods and empirical strategy

To give a comprehensive overview of the effects of training participation on affective job security, we compare mean affective job security at different points in time across different levels of educational attainment and then estimate multivariate models in order to understand changes in affective job security within individuals.

In the multivariate model, we test our hypotheses about the effects of workplace training on affective job security. Affective job security is a function of time, the participation in workplace training, various job- and family-related covariates, as well as macroeconomic indicators. With a dichotomous dependent variable, we apply a conditional logit model. The dependent variable distinguishes two categories: those who are 'not concerned' and those who are 'concerned', coded 0 and 1, respectively. The conditional logit model estimates the within-individual change in the likelihood of having concerns about job security. The fixed-effects model of the logistic regression maximizes the likelihood of a person having concerns independent of the absolute numbers of realizations (e.g. having concerns) over time.

The formula below illustrates how we specify the model to separate the short- and long-term effects of workplace training with respect to affective job security. For this purpose, the model includes three variables. The first variable measures the distance to the first episode of workplace training participation for each individual. The second variable measures the immediate effect of the first participation in workplace training, thereby comparing the effect before and after the training (z_{it}). The third variable is an interaction of the first two variables that captures the post-training trend ($x_{it} \times z_{it}$). In multivariate models that include interaction terms, the regression coefficients for x_{it} and z_{it} reflect the conditional relationship when either x_{it} or z_{it} take on a specific value. More specifically, b_1 reflects the influence of x_{it} on the likelihood of having job concerns, when z_{it} is equal to zero (Jaccard and Turrisi, 2003). The following (shortened) formula illustrates the trend specification applied in the multivariate model[9]

$$ln\frac{\left(job\,concerns_{it}=1\right)|x;\alpha_i(FE)}{\left(job\,concerns_{it}=0\right)|x;\alpha_i(FE)}$$
$$= b_1x_{it} + b_2z_{it} + b_3x_{it} \times z_{it} + \ldots + \alpha_i\left(FE\right)$$

In the conditional logit model, the coefficient of the main effect measures changes in the likelihood of having job concerns before the first training episode. The coefficient of the interaction term measures the difference between changes in the likelihood of having job concerns immediately before and after the participation in workplace training. The coefficient of the interaction refers to the period after the training as it measures the post-training trend in the likelihood of having job concerns.

In order to control for unobserved heterogeneity, the model includes individual fixed effects. Unobserved heterogeneity matters for the variable measuring the distance to the first training episode. Since the panel is unbalanced, the number of years of observations varies across individuals. The number of years observed might be influenced by some unobserved characteristics, which therefore justifies the application of a conditional logit model (Giesselmann and Windzio, 2012). This model is the most appropriate estimation strategy for the case at hand because the observations are not independent and the model allows us to use the longitudinal properties of the SOEP. The model requires no assumptions about the distributional form of unobserved heterogeneity or about the correlation between unobserved heterogeneity and the covariates included in the model.

By definition, the model only includes participants in workplace training. This restriction raises endogeneity concerns given that the self-selection into workplace training is not random and participants are likely to differ from non-participants, which may result in biased estimates. In this application, the direction of the bias can go both ways.[10] The endogeneity problem would only matter if unobserved time-varying covariates correlate with changes in affective job security, but we argue that the models control for the most relevant time-varying covariates. We recognize that our findings are limited to the population of workplace training participants and cannot be generalized to the total population.

Results

Development of self-perceived job security

In earlier sections, we described the tight German labour market situation in the first decade of the century, characterized by high and persistent unemployment, particularly in East Germany (Clasen and Clegg, 2011). How did workers react to the confluence of high unemployment and far-reaching labour market reforms in terms of perceived job security? The data support our first hypothesis (H1): perceived job security dropped uniformly across all socio-demographic groups between 2000 and 2005. Figure 1 illustrates this drop for the three educational levels distinguished in this study (see note 7 and Section 'Indicators'). For highly educated individuals, perceptions of job security reached a low point in 2005. Since then, this group has experienced a steady increase in affective job security and rose above pre-crisis levels of job security in the year 2011.

The two groups with lower educational attainment (primary and secondary education) experienced the turning point in perceived job security later and recovered at a slower pace. For them, the aftermath of the German unemployment crisis had stronger and longer repercussions on perceived job security. Surprisingly, but in line with the findings of Lengfeld and Hirschle (2009), affective job security was lowest for the group with secondary education.
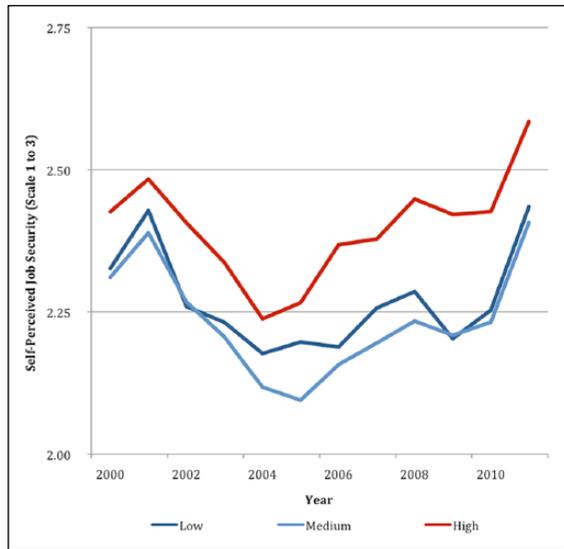

Figure 1. Perceived job security across different levels of educational attainment.
Source: Socio-Economic Panel (v.28), authors' calculations.
ISCED-97: International Standard Classification of Education–1997.
Categories are based on ISCED-97. Individuals who are still in school and those with missing information are excluded from the calculation.

Effects of workplace training on affective job security

Figure 2 illustrates levels of affective job security before and after participation in training for the total sample of participants during the period of observation. The level of affective job security declines steadily in the years prior and reaches a low point in the year prior to the first training. In the year of training participation, we see a significant growth in affective job security, followed by a somewhat slower but steady upward trend. At the end of the observation period, affective job security exceeds pre-participation levels. The descriptive results point to a positive association between workplace training and affective job security.

The multivariate analysis disentangles the short- and long-term effects of workplace training on affective job security and examines whether the relationship holds true for different educational levels under control of additional time-varying covariates. The first
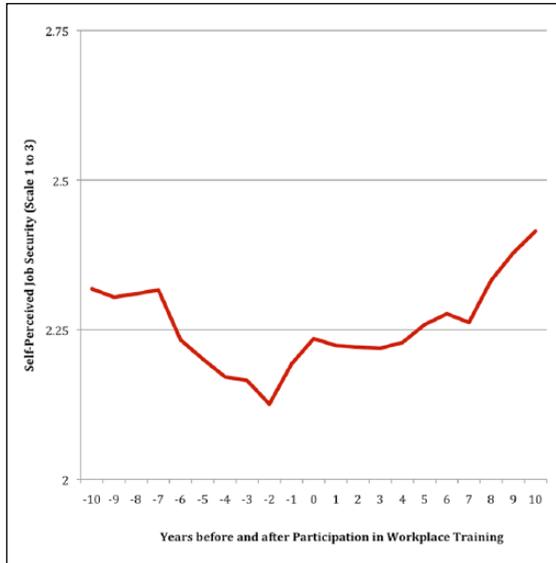
Figure 2. Perceived job security before and after participation in workplace training.
Source: Socio-Economic Panel (v.28), authors' calculations.

fixed-effects model (see Table 1) only includes the general time trend indicating the general development of job security over the observation period, as well as the immediate effect and post-training trend of workplace training. It estimates the overall effects of workplace training on affective job security for the total population of participants. The coefficient for the time trend reflects the within-individual change in the likelihood of having affective job concerns over the entire observation period. The significant positive coefficient of 0.12 in Model 1 implies an increasing likelihood of concerns about job security over time and confirms our findings from section 'Development of self-perceived job security'.

The immediate effect of workplace training reflects the likelihood of concerns about job security in the year after workplace training. The significant negative coefficient (−0.202) shows that participating in workplace training increases affective job security in the short run, which confirms our second hypothesis (H2). To assess whether workplace training has a sustained effect on affective job security, one has to interpret the post-training trend relative to the general time trend of job security. The absolute difference between the two coefficients 'post-training trend' (−0.134) and 'time trend' (0.120) illustrates whether the effect of workplace training is sustained or whether affective job security falls back to pre-training levels in the years after workplace training. The larger coefficient for the post-training trend than for the general time trend confirms the sustained effect of workplace training on the level of affective job security. In the years after workplace training, affective job security does not fall back to pre-training levels, although generally – for the rest of the population – concerns about job security do tend to increase over time.

In Model 1, the coefficient for the 'long-term effect' is not statistically significant different from the coefficient for the 'general time trend'.[11] If we add the two coefficients, the likelihood of having concerns after participation in workplace training is weakly negative, which implies a decreased likelihood of having concerns about job security. Even though the post-training trend of within-individual changes in affective job security after participating in training is not particularly strong, it nevertheless illustrates that participation in workplace training can halt an increasing likelihood of having affective job concerns within individuals. The distance between general time trend and post-training trend indicates that on average, workplace training participation leads to a sustained improvement in perceived job security. This confirms our third hypothesis (H3). The relationship between workplace training and affective job security holds even when controlling for year-specific changes in regional unemployment rates. The coefficient is significant and positive, indicating that increases in the unemployment rate result in a higher likelihood of affective job concerns.

Based on the theoretical considerations, we assume differential effects of workplace training across educational levels. Specifically, we expect individuals with low educational attainment[12] to benefit to a greater extent from workplace training than individuals with medium or high educational attainment. To test this assumption, Model 2 includes separate interaction effects of the general time trend, as well as the immediate and post-training trend of workplace training for individuals with medium and high educational attainment. Furthermore, the

Table 1. Estimates for fixed-effects models on perceived job security.

	Model 1	Model 2	Model 3	Model 4
Effect of workplace training	−0.203* (0.0926)	−0.964* (0.427)	−0.965* (0.432)	−0.972* (0.432)
Time trend	0.120*** (0.0214)	0.362*** (0.101)	0.347*** (0.102)	0.347*** (0.102)
Post-training trend	−0.134*** (0.0246)	−0.401*** (0.115)	−0.413*** (0.116)	−0.412*** (0.116)
Regional unemployment	0.240*** (0.0184)	0.242*** (0.0185)	0.242*** (0.0187)	0.242*** (0.0187)
Interaction effect Effect of workplace training × secondary education		0.621 (0.443)	0.632 (0.447)	0.644 (0.447)
Interaction Time trend × secondary education		−0.216* (0.105)	−0.216* (0.106)	−0.218* (0.106)
Interaction Post training trend × secondary education		0.238* (0.120)	0.247* (0.121)	0.248* (0.121)
Interaction effect Effect of workplace training × tertiary education		1.053* (0.438)	1.065* (0.442)	1.071* (0.442)
Interaction Time trend × tertiary education		−0.272** (0.104)	−0.263* (0.105)	−0.264* (0.105)
Interaction Post training trend × tertiary education		0.299* (0.119)	0.292* (0.120)	0.292* (0.120)
Interaction effect Effect of workplace training × civil servants		0.152 (0.356)	0.156 (0.361)	0.158 (0.361)
Interaction Time trend × civil servants		−0.157 (0.0886)	−0.144 (0.0893)	−0.144 (0.0891)
Interaction Long-term effect × civil servants		0.0802 (0.103)	0.0708 (0.104)	0.0733 (0.104)
Number of training spells		−0.0824 (0.0901)	−0.104 (0.0908)	−0.103 (0.0908)
Job change (with same employer)			−0.435** (0.166)	−0.432** (0.166)
Job change (to different employer)			−0.0736 (0.101)	−0.0716 (0.101)
Permanent contract			−0.570*** (0.0873)	−0.572*** (0.0873)
Time since first unemployment spell			0.0398 (0.0325)	0.0398 (0.0325)
Time spent with same employer			0.0372*** (0.00932)	0.0370*** (0.00932)
Transition to marriage				0.226 (0.165)
Transition to divorce				−0.192 (0.286)
Transition to widowhood				0.0062 (1.453)
N	8468	8468	8468	8468

Source: Socio-Economic Panel (v.28), authors' calculations.
Models 2–4 control for civil servants with the inclusion of interaction effects for civil servants. Models 3 and 4 control for time spent with same employer and time since first unemployment spell in observation period. Results are available upon request. Standard errors are given in brackets.
*$p < 0.05$, **$p < 0.01$; ***$p < 0.001$.

second model controls for the number of workplace training episodes completed and includes interactions for civil servants.

Model 2 shows that the immediate effects of participating in workplace training are highest for the low-educated (-0.964, $p < 0.05$) and lowest for the highest educated (0.089, $p < 0.05$) individuals. For the latter, concerns about job loss slightly increase in the year after participating in workplace training.

Furthermore, as Model 2 shows, the coefficients for all educational levels for the general time trend of affective job security are positive. These positive coefficients provide evidence of increasing concerns about job security over the period of observation at all levels of educational attainment. The likelihood is most significant and highest for the lowest educated, however (0.362, $p < 0.001$). This finding does not come as a surprise, given that in the first decade of the century, the German labour market amplified the insider/outsider disparities, affecting those at the periphery most severely.

For lower-educated individuals, the sum of the coefficients for the post-training trend of workplace training (-0.401, $p < 0.001$) and the general time trend (0.362) is negative (-0.039). This result implies an increased likelihood of lower affective job security concerns in the years following participation in workplace training. Thus, the model confirms that participation in workplace training has the potential to reverse the downward trend and to improve levels of affective job security in the long term for lower-educated individuals. In other words, if individuals who can be considered labour market outsiders are given access to workplace training, they are able to achieve higher levels of affective job security than training participants with higher educational attainment. This result also holds for low-educated individuals compared to individuals with secondary education (-0.017).

Therefore, our results confirm the fourth hypothesis showing that lower-educated individuals benefit to a greater extent from workplace training than higher-educated individuals in terms of affective job security. The group with the highest educational attainment benefits the least from participation in workplace training when it comes to the level of affective job security. For them, the sum of the time

trend and the post-training trend of workplace training is lowest (-0.012). The weak time trend (0.09), however, illustrates that this is the only group that did not experience a substantial drop in affective job security to begin with. The variable *training* counts the number of training spells in the period of observation. The negative but not significant coefficient implies that additional training episodes reduce the likelihood of concerns about job security.

Models 3 and 4 confirm that these findings also hold when controlling for further context factors. The estimates for the main effects and interaction terms are very robust, given that the inclusion of job-specific, time-varying covariates does not change coefficients considerably (see Model 3). Surprisingly, the immediate effect of participating in workplace training is stronger, although less significant, compared to the transition from fixed-term to a permanent contract (-0.964, $p < 0.05$ vs -0.570, $p < 0.001$). The fourth model includes marital transitions that do not alter the effects of workplace training on perceived job security. In sum, the results confirm that individuals of all educational levels benefit from the participation in workplace training but that low-educated individuals gain most. The findings stress that workplace training not only matters in the short term but also has a sustained positive impact on affective job security. In times of economic uncertainties, workplace training has the potential to mitigate labour market insecurities, especially for those employees in the presumably the weakest labour market position.

Conclusion

Affective job security is not only a desirable career objective at the individual level but also an important policy objective because of the numerous positive (economic) outcomes associated with it. The findings presented in this article make an important contribution by adding a longitudinal perspective to the study of affective job security, in particular, of affective job insecurity.

The results show that all individuals – irrespective of their level of education – experienced a drop in their affective job security between 2000 and 2006, a period when unemployment was soaring and

Germany went through a massive restructuring of its labour market. By using fixed-effects models, the analysis showed that workplace training has the potential to increase affective job security in times of economic uncertainties.

The results illustrate that the positive association between workplace training and affective job security is not only limited to an immediate positive effect. While the immediate effect was stronger than the post-training trend across all educational levels, the post-training trend was positive and significant – especially for lower-educated groups who lack occupational education. Hence, workplace training mitigates insecurities in the short term but also has positive returns for affective job security in the long run.

Why do low-educated people benefit more from workplace training than people with higher educational levels? These individuals are more likely to be in a precarious labour market position and to have less access to workplace training. For them, the acquisition of additional job-specific skills has a stabilizing effect on their labour market position, with corresponding improvements in affective job security. This improvement may result partly from the fact that the opportunity to participate in training gives employees the feeling of being more appreciated by their employers. Appreciation for employees' work may explain the short-term effects of workplace training but not the sustained positive effect on affective job security. These positive long-term effects show that even in Germany, where individuals lacking occupational qualification are often relegated to an outsider status, participation in workplace training has the potential to sustainably mitigate subjective labour market insecurities and fears of job loss. In this regard, workplace training has the potential to allow individuals who are in a weak position on the labour market – or at least have this perception – to overcome their outsider status. The underlying mechanism of this effect may be that workplace training serves as an instrument to strengthen the bond between employer and employee, serving as both an investment in and commitment to a long-term employment relationship. This bond has a particularly positive effect on low-educated employees, whereas high-educated individuals benefit less because they are in a strong labour market position to begin with.

Our findings have important policy implications. The increasing flexibilization and decommodification of work in Germany and other European countries require individuals to invest more in education and lifelong learning. For the less educated, the immediate effect of workplace training is even stronger than the transition from a fixed-term to a permanent contract. Even though our findings are restricted to individuals who participate in workplace training, they suggest that more targeted policy incentives are needed to promote employer investments in training for the less educated. It can be assumed that the lower educated in our sample are particularly motivated, which may be a driving force behind their participation in workplace training. Thus, our results cannot be generalized, and the marginal returns of workplace training may be lower if workplace training is extended to all lower-qualified individuals. Our evidence also suggests that workplace training gives lower-educated individuals a greater sense of job security since it fosters the employer–employee relationship and can be considered a mutual investment in a stable and long-term working relationship and, in turn, also promotes confidence regarding outside employment prospects.

Funding

Notes

1. In the following, we use the term 'affective job insecurity' and 'subjective job insecurity' interchangeably.
2. As shown above, Chung and Van Oorschot (2010) show a positive correlation between workplace training and subjective employment security. Their definition of subjective employment security is closer to cognitive job security than to affective job security, however, which is the focus of our analysis.
3. To date, 28 waves for West Germany and 21 waves for East Germany are available (Wagner et al., 2008).
4. The annual data do not allow for a clear distinction of active labour market policies (ALMP) and workplace training. ALMP aim at the reintegration of the unemployed into the labour market (Card et al., 2010), whereas workplace training aims at improving the

skills of the workforce through investments in human capital (Becker, 1962; Mincer, 1962). This article focuses on the latter type of training. Therefore, we apply a set of priority rules to handle overlapping periods of training and unemployment. Training is defined as ALMP if training and an unemployment spell start simultaneously or if a training spell occurs within an unemployment spell. We exclude these types of training episodes from our analysis.

5. Nonetheless, the models control for the number of training spells during the period of observation.

6. This question best captures the concept of 'affective job insecurity' brought forward by Anderson and Pontusson (2007).

7. The original Socio-Economic Panel (SOEP) variable on subjective job security distinguishes three categories: 'not concerned', 'somewhat concerned' and 'very concerned'. The distribution of observations across the three categories revealed a dividing line between those individuals who have concerns and those who have none. The category 'somewhat concerned' lies closer to the category 'very concerned' than to the category 'not concerned'. For this reason, we dichotomize the variable and group individuals into a 'concerned' versus 'not concerned' category.

8. The International Standard Classification of Education–1997 distinguishes seven levels of education: pre-primary education (code 0), primary education (1), lower secondary education (2), (upper) secondary education (3), post-secondary non-tertiary education (4), first stage of tertiary education (5) and second stage of tertiary education (6). The multivariate analysis excludes individuals with missing information on the International Standard Classification of Education–1997 (ISCED-97) variable and those who report to still be in school throughout the period of observation.

9. For better clarity, the interaction terms with educational attainment levels as well as the other control variables are left out of the equation.

10. Individuals can participate in workplace training because they lack motivation for their job. In this case, workplace training offers a means to spend time away from work but with no consequences for the level of subjective job security. Alternatively, individuals may participate in workplace training because their employer promises a promotion. In this case, workplace training leads to an upward bias in estimates.

11. Results of significance tests are not reported in detail, but available upon request.

12. Throughout this article, we use the terms 'low-skilled' and 'low-educated' interchangeably.

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