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## Finding a job: Consequences for life satisfaction and interactions with job quality

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Institut für Arbeitsmarkt-  
und Berufsforschung

Die Forschungseinrichtung der  
Bundesagentur für Arbeit

IAB

# IAB-Discussion Paper

24/2008

Beiträge zum wissenschaftlichen Dialog aus dem Institut für Arbeitsmarkt- und Berufsforschung

## Finding a job: Consequences for life satisfaction and interactions with job quality

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# Finding a job: Consequences for life satisfaction and interactions with job quality

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Mit der Reihe „IAB-Discussion Paper“ will das Forschungsinstitut der Bundesagentur für Arbeit den Dialog mit der externen Wissenschaft intensivieren. Durch die rasche Verbreitung von Forschungsergebnissen über das Internet soll noch vor Drucklegung Kritik angeregt und Qualität gesichert werden.

The “IAB Discussion Paper” is published by the research institute of the German Federal Employment Agency in order to intensify the dialogue with the scientific community. The prompt publication of the latest research results via the internet intends to stimulate criticism and to ensure research quality at an early stage before printing.

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## Abstract

Using German and British panel data, we analyse the impact of transitions from unemployment to full-time employment on life satisfaction, with special focus on the influence of job quality. On average there are pronounced positive effects of a new job in both countries, even after controlling for income changes and other factors. These effects are smaller for people taking up low-paid jobs (in Germany, but not in Britain) or temporary jobs, but even this group is significantly better off compared to people remaining unemployed in both countries. We also use job satisfaction as an alternative indicator of job quality. Re-employed persons with low job satisfaction scores are not likely to experience a significant rise in life satisfaction.

## Zusammenfassung

Mit deutschen und britischen Panel-Daten analysieren wir, wie sich der Übergang aus Arbeitslosigkeit in (Vollzeit-)Beschäftigung auf die Lebenszufriedenheit auswirkt, und berücksichtigen dabei insbesondere den Einfluss der Arbeitsplatzqualität. Im Durchschnitt sind deutliche positive Effekte einer Beschäftigungsaufnahme in beiden Ländern festzustellen, auch wenn man für Einkommensänderungen und andere Faktoren kontrolliert. Diese Effekte sind in Deutschland kleiner, wenn es sich um Niedriglohn-Jobs handelt (aber nicht in Großbritannien), und sie sind in beiden Ländern kleiner, wenn eine befristete Beschäftigung aufgenommen wird; aber auch für die letztere Gruppe ist im Vergleich zu Personen, die arbeitslos bleiben, ein signifikanter Zuwachs an Lebenszufriedenheit zu verzeichnen. Das gilt allerdings nicht, wenn man Arbeitszufriedenheit als Indikator für die Arbeitsplatzqualität verwendet: Wiederbeschäftigte Personen mit niedriger Arbeitsplatzqualität sind nicht signifikant zufriedener mit ihrem Leben als diejenigen, die weiterhin arbeitslos sind.

**JEL classification:** I31, J28

**Keywords:** unemployment, re-employment, job quality, life satisfaction

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# 1 Introduction

There is well-established evidence that, on average, unemployment is associated with lower levels of reported life satisfaction. This has been shown in cross-sectional comparisons of satisfaction levels between employed and unemployed persons (e.g. Clark/Oswald 1994 for Britain). The evidence has been confirmed by longitudinal studies that follow the same individuals over time (e.g. Winkelmann/Winkelmann 1998 for Germany), thus avoiding problems of inter-personal comparability of subjective well-being, inherent in cross-sectional studies. Persons who lose their job report, on average, a sharp drop of their life satisfaction, and this seems to be caused only to a minor degree by income losses.

In recent years, a number of studies have examined the relationship between unemployment and life satisfaction in more detail. Just to mention a few, Clark has analysed the consequences of unemployment duration (2006) and of unemployment rates of reference groups, e.g. at the regional level (2003). Different effects for men and women (Morrison et al. 2001) as well as for East and West Germans (Gerlach/Stephan 2001) were analysed. This list however is far from being complete.

Interestingly enough, most longitudinal studies examine transitions from employment to unemployment. The focus of our study is on the opposite direction: previously unemployed people who have found a new job<sup>1</sup>. As might be expected, many of them report a rise in life satisfaction; but many of them do not. We investigate these differences between individuals, with special focus on the role of the quality of re-employment. In this context, we try to answer the following two questions:

1. Are the previously unemployed who are now in “good” jobs more likely to report a rise in life satisfaction than those who have found only “bad” jobs?
2. Do the previously unemployed with “bad” jobs fare better than those who remain unemployed?

These questions, especially the second one, are obviously important for the design of labour market policies. Layard, in his paper on “Good jobs and bad jobs” (2004), claims that “human happiness<sup>2</sup> is more affected by whether or not one has a job than by what kind of job it is”, and concludes: “Thus, when jobs are at hand, we should insist that unemployed people take them. This involves a much more proactive placement service and clearer conditionality than applies in many countries.”

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<sup>1</sup> It is true that previous studies with longitudinal data have presented descriptive evidence for transitions from unemployment to employment (e.g. Gerlach/Stephan 1996, 2001), but the focus of the econometric analysis was on the negative effects of becoming unemployed.

<sup>2</sup> Layard does not distinguish between “happiness” and “life satisfaction”.

However, this conclusion is still disputed, as is the empirical evidence (see section 3 of our paper). We think that the focus on transitions from unemployment to jobs with different quality should contribute to clarify the issue.

Our data come from two large panel surveys, the German Socio-Economic Panel (GSOEP) and the British Household Panel Survey (BHPS). These two surveys are well suited for our purpose, since they have collected information on life satisfaction continuously since 1984 (GSOEP) and 1996 (BHPS).

We use ten waves of each dataset and select persons who are unemployed in a given year  $t$ . For this group, we analyse the change in life satisfaction in the following year ( $t+1$ ) depending on whether people are still unemployed or have found a job. In the latter case, the role of job quality is investigated. Our analysis is carried out in a multivariate framework that allows us to control for other factors known to affect life satisfaction. We only consider transitions to *full-time* jobs, since in this case the impact on life satisfaction is more clear-cut than in the case of a transition to part-time employment. We also expect gender differences to be less important when focusing on full-time jobs, which allows us to analyse both sexes jointly in a multivariate setting.

Moreover, we follow people over two years and analyse the change in satisfaction scores between  $t$  and ( $t+2$ ). This is particularly interesting for people who have found a job in ( $t+1$ ) and reported a rise in life satisfaction: Is the higher satisfaction level likely to persist, or is it just a temporary rise?

Most existing studies on employment and life satisfaction are based on single-country evidence and implicitly assume that results are valid for all industrialized countries; but existing cross-country studies show some dissimilarities. The use of the two datasets allows us to identify similarities and differences between Britain and Germany. Previous research suggests two differences relevant for our analysis: First, the transition from unemployment to work should affect life satisfaction in Britain less than in Germany. This is based on a survey of around 21,000 persons in 28 European Countries on their perceptions of living conditions (European Foundation 2004), carried out in 2003. Respondents were asked, among other things, for the “most important necessities for a good life”. The most frequent answer in Germany (and in many other countries) was “job”, followed by “partner” and “accommodation”, whereas in Britain “job” was not among the three most frequent answers.<sup>3</sup> Second, we expect that the high wage/low wage distinction, used as indicator for job quality, matters for life satisfaction in Germany, but not in Britain. This is based on a cross-country study with data from the ECHP (European Household Community Panel) which found that in Germany (and in most other EU countries) low-wage workers

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<sup>3</sup> The three most important necessities in Britain were “accommodation”, “leisure time” and “able to go out”.

report lower levels of life satisfaction than higher-wage workers, but not in Britain (Diaz-Serrano/Cabral Vieira 2005).

## 2 Job quality - dimensions and indicators

A crucial question for our analysis is: What makes a job “good” or “bad”? Job quality is not a clearly defined concept and there is no single indicator available. It is obvious that many aspects of an employment relationship do matter. The European Commission, which highlights the importance of job quality as part of the European Employment Strategy (“more and *better* jobs!”), defines job quality as “a relative concept regarding a job-worker-relationship, which takes into account both objective characteristics related to the job and the match between worker characteristics [...] and job requirements [...]. It also involves subjective evaluation of these characteristics by the respective worker on the basis of his or her characteristics, experience, and expectations.” (European Commission 2001, p. 65)

The subjective perception of the worker seems to be best mirrored by his or her *job satisfaction*. It is used as an indicator for job quality by the European Commission, and by Leontaridi/Sloane (2001) and Clark (2005). The justification for using job satisfaction scores is that they are strongly correlated with observable events such as quits, absenteeism or productivity. Since both the GSOEP and the BHPS datasets provide information on reported job satisfaction, we also use it as a subjective indicator for the quality of work.

Alternatively, we also try to measure job quality by using „objective characteristics related to the job“. Both the BHPS and the GSOEP gather a number of job-related information, e.g. on pay, working hours as well as basic contract terms, to mention just a few. In our understanding at least some of these parameters allow an external, and hence, relatively objective assessment of job quality. We focus on two parameters, namely wages and job security, and classify jobs according to the low-wage/higher-wage distinction and with respect to the type of employment contract, permanent or fixed term.

We are well aware that there are other determinants of the quality of work, such as career prospects or the level of physiological stress at the workplace, which are, however, difficult to measure. With our classification we hope to capture financial outcomes and job security. That these two factors play a key role for job quality can also be explained with reference to the theory of labour market segmentation, introduced by Doeringer/Piore (1971). This theory challenges the neo-classical competition model of the labour market and assumes the existence of at least two distinct labour market segments with quite different employment characteristics and processes: A primary (or “core”) segment of “good jobs” with relatively high wages and employment security, and a secondary segment of “bad jobs”, mostly insecure and



low-paid<sup>4</sup>. According to this approach, wages and job quality are positively correlated, in contradiction to the neo-classical view of compensation wages differentials.

### 3 Theoretical considerations and previous evidence

The psychological well-being of the unemployed compared to the well-being of those employed in “bad” and “good” jobs has already been investigated in some studies. As to theoretical considerations, there is the influential approach of Marie Jahoda (1982). She distinguished between “manifest” functions of work (mainly provision of income) and “latent” functions such as social interaction, time structuring and personal identity. Jahoda claimed that the latent functions are much more important for the mental well-being than the manifest functions. Even in insecure low-paid jobs workers can participate in these latent benefits. From this perspective, any job is better than no job.

Jahoda’s views were challenged by other researchers. Liem (1982) claimed that the psychological costs of accepting an unsatisfactory job are often greater than those incurred by remaining unemployed, because the worker gives up personal control and incurs damage to his or her sense of self. Fryer’s (1986) agency theory argues that the mental well-being suffers from a restriction of personal agency caused by financial deprivation, which prevents them from planning a meaningful future. In this perspective, the transition to a low-wage job is only preferable to unemployment if it provides more income.

The empirical evidence concerning the debate is mixed. In a case study, Leana/Feldman (1995) surveyed a panel of 59 male laid-off workers in the US immediately after job loss and one year later. They found that, on average, the still unemployed showed greater psychological distress than the reemployed, but also find great differences in life satisfaction between satisfactorily and unsatisfactorily reemployed workers. Wanberg (1995) carried out a longitudinal study on 129 unemployed people and found that both persons who remained unemployed and those who found a dissatisfying job reported no changes in mental health. But in both studies the number of observations is by far too small to draw more general conclusions. In larger case studies, O’Brien/Feather (1990) and Winefield et al. (1993) surveyed two panels of Australian school-leavers in the 1980’s; both studies found that those who had found “good” jobs were clearly more satisfied than those who were unsatisfactorily employed, whereas the latter were not better off than those who were unemployed, in terms of life satisfaction and other indicators of psychological well-being. In any case, the focus of these studies is on transitions between school and working life, and not between unemployment and “good” respectively “bad” jobs, which is the focus of our paper.

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<sup>4</sup> The segmentation approach also distinguishes between “internal” and “external” markets. This distinction partly coincides with the distinction between a primary and a secondary sector, but allows for further segmentation within the primary sector (firm-specific or occupation-specific labour markets.)

There is also evidence from cross-sectional studies. A case study, carried out in Australia, compared 193 unemployed people and 206 low-wage earners and concluded that the latter are better off than the former in terms of life satisfaction and other dimensions of mental well-being (Hassall et al. 2004). Theodossiou (1998) obtained similar results for Britain with a larger sample drawn from the 1992 wave of the BHPS. In contrast, a study based on the first wave on the Australian HILDA panel<sup>5</sup> focused on reported job satisfaction as indicator for employment quality and found “that being in employment but in a job in which one has low job satisfaction has an even greater detrimental effect on reported life satisfaction than unemployment.” (Dockery 2003)

However the studies mentioned in the preceding paragraph are based on cross-sectional, or inter-personal, comparisons of life satisfaction scores for employed and unemployed persons, which is problematic for two reasons<sup>6</sup>: First, such comparisons require cardinality of the measurement scale, which is a rather strong assumption. Second, there is the problem of endogeneity: We cannot be sure that employment status or quality determine satisfaction levels, since these variables could also be jointly determined by unobserved variables. This is why we consider mainly *changes* in life satisfaction observed for the same persons, which allows us to control for unobserved, but time-invariant, individual effects.

The relation between job satisfaction and life satisfaction deserves special consideration, since we use the former as a predictor for the latter. This relation has been investigated in a number of psychological studies (for example, Near 1984; Steiner/Truxillo 1991; Rain et al. 1991, Judge/Watanabe 1993). The literature puts forward three competing theories: The *spillover hypothesis* suggests that the level of either job satisfaction or life satisfaction will spill over and influence the other, which means a positive relationship between the two. The *compensation hypothesis* claims the opposite: Either higher job satisfaction or life satisfaction compensates for lower satisfaction in the other area. For these two hypotheses, there are diverging views concerning the causal relationship, i.e. whether it is job satisfaction that causes life satisfaction or the other way round. Finally, the *segmentation hypothesis* states that both areas are more or less independent from each other.

Of these three competing hypotheses, the spillover hypothesis had the most proponents in the literature since the 1970s, but has been questioned in a recent study (Rode/Near 2005). Rode and Near claim that previous studies in favour of the spillover approach did not control adequately for other factors affecting working and living conditions; when this is done, there is only weak evidence for spillover, and segmentation seems to be more plausible.

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<sup>5</sup> HILDA (Household Income and Labour Dynamics in Australia Survey) started in 2001 and is very similar to the BHPS and the GSOEP.

<sup>6</sup> For a more detailed discussion of these problems, see Winkelmann/Winkelmann (1998).

However our contribution to this debate can only be limited. The discussion is about job and life satisfaction of employees in general, regardless of how long they have been in employment, whereas we focus on workers who have just left unemployment and found a new job. Our results show a strong positive correlation between job satisfaction and the change in life satisfaction. This can be interpreted as support for the spillover hypothesis, but only for this particular group and situation.

## 4 Data and methodology

In both countries household panel data providing the necessary information for our analysis are available. For Germany, we rely on the German Socio-Economic Panel (GSOEP) which is a representative longitudinal study of private households since 1984. East Germany is included since 1990. All household members aged 16 and above are interviewed on an annual basis. A multitude of topics are covered, among them individual employment histories, earnings and various satisfaction dimensions, e.g. life, job and health status. The British Household Panel Survey (BHPS) started in 1991 and is structured in a very similar way. Each year, every adult member of sampled households is interviewed on a number of core topics including employment related questions. Questions related to overall satisfaction with life have become part of the core modules in 1996.<sup>7</sup>

In order to analyse the change in overall life satisfaction, we need to follow individuals over time. Our main sample consists of people aged 20 – 65 who reported to be unemployed at the time of the interview in year  $t$  and were either full-time employed or still unemployed the following year  $(t+1)$ .<sup>8</sup> Since we also would like to study medium-term effects, we constructed a second sample which follows individuals over two years. In order to increase the number of observations and to cover a similar period in time for both countries, in case of the German panel the data were pooled for the years 1995 – 2004 and the BHPS data were pooled over the time period 1996 – 2005. As shown in Table A1 (see Appendix), the pooled number of people reporting to be unemployed at any particular (start) year  $t$  seems sufficient for both countries. The smaller number of households interviewed and the lower unemployment rate in the UK are reflected in a sample size which is only about one third of the German sample.<sup>9</sup> The differences in sample sizes are further pronounced when we follow individuals over time. For the UK, the sample is reduced by around 60% in the following year, either because individuals cannot be traced at all or they do not meet our selection criteria, i.e. still being unemployed or being full-time employed at  $(t+1)$ . For Germany, we lose about one third of the original sample. With respect to

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<sup>7</sup> For further information on the GSOEP, see Haisken-DeNew, Frick (2005). Taylor (2007) provides a comprehensive description of the BHPS.

<sup>8</sup> We exclusively focus on the transition out of unemployment into full-time employment. Individuals who for example commence part time jobs or become self-employed are excluded from the sample.

<sup>9</sup> For the years considered here, the average number of respondents per year is 14,600 in the BHPS and 18,600 in the GSOEP.

the medium-term analysis, only the German data set ensures a sufficient number of observations at  $(t+2)$ , but for the sake of completeness we also report the corresponding numbers retrieved from the BHPS.

In terms of the variable of main interest, overall satisfaction with life, the question is phrased very similarly in both data sources. People are asked to answer the following question: “How dissatisfied or satisfied are you with your life overall?” The main difference is the scale from which people can choose from. The scale used in the BHPS runs from 1 (not satisfied at all) to 7 (completely satisfied). The GSOEP scale provides more in-between stages; 0 indicates complete dissatisfaction and 10 refers to complete satisfaction. Hence, the magnitude of any estimated effects will not be directly comparable across countries when using the ordinal nature of the scale and changes thereof. As an alternative, we construct a binary variable which equals 1 when life satisfaction has increased and 0 when life satisfaction has either declined or not changed compared to the previous time period.

As mentioned above, jobs are classified according to their type of contract, i.e. permanent or fixed-term, and whether or not the new job is low paid. Jobs with wages below two thirds of the median wage of all full-time employees in a given year are considered low pay. The greater number of observations in Germany allows us to combine these two dimensions to create four different job types. Table A2 shows the distribution of different job characteristics for both countries. In Germany, almost every second job following an unemployment spell is low paid; for the UK the figure is only somewhat lower. With respect to type of contract, differences are more distinct. In the UK, 84% of newly-found jobs are permanent, whereas in Germany the share of fixed-term contracts totals 40%. This result probably reflects the stricter employment protection regulation for permanent jobs in Germany. Looking at the four job types constructed with the German data, more than one third of all jobs following a period of unemployment are permanent and higher paid. When taking up a low wage job after unemployment, there are basically equal chances to be either employed on a permanent or fixed-term basis.

A general description of the variables we will rely upon in our comparative analysis is presented in Table A3. As mentioned above, different scales are used to indicate overall satisfaction with life in Germany and the UK. Hence, the average values reported in Table A3 are not directly comparable. Figure A1 plots histograms demonstrating that the distribution of life satisfaction is, in fact, rather similar in both countries. From the summary statistics in Table A3 we see that the German sample contains more women and that the share of people living with a partner is considerably higher. There are also significant cross-country differences with regards to education. We have chosen three qualification levels: low (corresponding to ISCED level 1 and 2, including no and unknown levels of qualification), middle (ISCED level 3 and 4) and high (ISCED 5 and higher). The share of low or unknown level of education seems relatively high in both countries, but is lower in Germany. For the UK, all categories are almost equally well represented with a slightly bigger share of people

with medium level of formal education. In Germany, 61% have completed secondary education and 16% obtained tertiary education. Finally, our data confirm the well-known cross-country differences in terms of the speed of leaving unemployment and finding a new job: the share of unemployed working full-time one year later amounts to 40% in the UK whereas in Germany only one in four unemployed will have found a job the following year.

The German data provide additional variables related to our analysis for the whole time period covered. For example, numerous studies have verified the strong relationship between health conditions and life satisfaction. Given our context, we will include the change in health status as an additional control variable.<sup>10</sup> Similarly, overeducation has been discussed as an influential factor of job and life satisfaction. We therefore constructed a variable indicating whether or not people are overeducated for their new job. For this, we compared job requirements as reported by the interviewees with their actual education level.<sup>11</sup>

Satisfaction scores are usually measured on an interval scale suggesting qualitative models like (ordered) logit or probit. Despite the ordinal nature, cardinal models like OLS and fixed effects panel estimators are frequently applied to this kind of data. From a theoretical point of view, strong assumptions are necessary to justify such an approach. In practise, however, the qualitative interpretation of results obtained from cardinal and ordinal models is very similar.<sup>12</sup>

We are mainly interested in the change in life satisfaction associated with the transition from unemployment to employment. Since satisfaction scales are different for German and British data, it seems appropriate to construct an indicator variable  $y_i$  which equals 1 if life satisfaction increased and 0 otherwise. By analysing changes in life satisfaction between  $t$  and  $(t+1)$  and calculating first differences for (some of) the control variables, we also attend to the problem of unobserved individual time invariant effects.

Furthermore, one might expect a selection bias since the unemployed are likely to face different re-employment probabilities and the set of explanatory variables may not fully capture those differences.

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<sup>10</sup> Self-reported health status varies between 1 (very good) and 5 (very poor). We have calculated the change in health status between  $(t+1)$  and  $t$ . Hence, higher numbers correspond to a worsening of health. The BHPS also collects information on health, but not for all years covered here.

<sup>11</sup> In order to assess job requirements, people are asked to describe the type of training necessary for the job. To construct a binary variable indicating overeducation, categories "no particular training needed", "just quick introduction", "fairly lengthy training at work place", "taking certain courses" are summarised and assumed to correspond to ISCED levels 1 and 2. If "career training" was needed, we assume that levels 3 or 4 would match those requirements. Finally, "higher education" is equated with levels 5 and 6. For a comprehensive discussion of overeducation and related concepts, see Green (2002).

<sup>12</sup> See Ferrer-i-Carbonell, Frijters (2004) for a comparison of different methods frequently applied to subjective well-being indicators.

In addition to the standard models for qualitative models, we therefore also estimate a two-stage estimator to control for potential selection bias. In a first stage the probability of finding a new full-time job is estimated whereas in the second stage the probability of an increase in life satisfaction is analysed.

The outcome equation can be written as

$$y_i^* = x_i\beta + v_i.$$

We observe a binary outcome (life satisfaction increased =1)

$$y_i = (y_i^* > 0)$$

if observation  $i$  has been selected:

$$y_i = (z_i\gamma + w_i > 0).$$

Both errors are assumed to be normally distributed with mean 0 and variance 1. However, if the errors are correlated, the standard probit model would yield biased results.

Since life satisfaction drops considerably when people become unemployed, we expect it to rise when people find employment again. The selection equation determining the probability of finding a job contains standard variables like age, gender, education and household characteristics. In addition, we control for the fact that people actively searched for new jobs. We have also included life satisfaction scores while being unemployed to address the problem of reversed causality, i.e. that the level of life satisfaction at  $t$  affects the probability of finding a job. In terms of the outcome equation which analyses the change in life satisfaction, we mainly focus on variables related to the newly-found job. As discussed above, with regards to the influence of particular job characteristics the literature provides less clear guidance and the relationship between job satisfaction and life satisfaction is discussed particularly controversially. Hence, at this stage it remains unclear what to expect when for example comparing satisfaction levels of the unemployed with those working under less favourable conditions.

## 5 Results

### 5.1 Life satisfaction and labour market status

As a first step we examine both levels and changes in life satisfaction depending on the labour market status. Results are presented in Table A4 for Germany and Table A5 for the UK. The first panel shows the level of life satisfaction at year  $t$  (when everyone is unemployed), broken down by employment status at  $(t+1)$ . This way, we can see whether people who are employed at  $(t+1)$  reported different levels of life satisfaction at time  $t$  than people who do not find employment. In Germany, there is no indication of any systematic difference since the average level of life satisfaction is basically the same for both groups. Results are different for the UK where people who remained unemployed did report a slightly higher satisfaction level in year  $t$ .

However, without a more detailed analysis controlling for other factors like education, search efforts etc. it is not possible to conclude that a lower level of life satisfaction serves as a push factor to finding a new job.

Our analysis reveals a number of similarities across countries. Being employed at  $(t+1)$  is associated with significantly higher levels of life satisfaction (see second panel). For Germany, this positive trend seems to continue since we observe a further increase (although no longer significant) for people who were still employed at  $(t+2)$ .<sup>13</sup> Life satisfaction goes down slightly for people who are still unemployed at  $(t+1)$ . On average, individuals who were unemployed at  $(t+1)$  but have a job at  $(t+2)$  realise a similar increase in life satisfaction than people who were already employed at  $(t+1)$ . Becoming unemployed again is associated with a significant drop in life satisfaction in Germany.

We have run the same set of analysis for men and women separately and could detect a number of interesting differences.<sup>14</sup> For example, in Germany women tend to report higher levels of life satisfaction whereas for the UK there is no such clear gender difference. Also, German men react stronger to changes of their labour market status, i.e. compared to German women they realise on average higher gains when finding a job and experience greater losses when becoming unemployed again. Again, when looking at the UK data, results are often statistically insignificant partly caused by the small number of observations.

The strong and positive correlation between finding a job and life satisfaction persists in a multivariate setting. Table A6 presents marginal effects of a probit regression with the dependent variable being 1 if life satisfaction increased from  $t$  to  $(t+1)$  and 0 otherwise. Of all determinants considered, being full time employed at  $(t+1)$  increases the probability of a positive change in life satisfaction the most. The effect is stronger for Germany (0.25 versus 0.20). This result is in line with previous research showing that in the UK people consider employment a less important component of a good life (European Foundation, 2004).

The level of overall life satisfaction at  $t$  is also a strong predictor of the change in life satisfaction between the two points in time. The less satisfied people were with their life at  $t$ , the higher the chances of an increase in life satisfaction.

In neither country the level of formal education seems to be of importance when determining changes in life satisfaction. Also, there is no longer any significant difference across gender when controlling for other determinants.

To shed some more light on the relationship between finding employment and change in life satisfaction, we have a detailed look at the sub-sample of employees

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<sup>13</sup> The opposite seems to hold for the UK. However, since the medium-term analysis is based on a rather small sample, results need to be interpreted rather cautiously.

<sup>14</sup> Complete results are available on request.

at  $(t+1)$ . As shown in Table A7, the proportion of unemployed who do not experience an increase in life satisfaction when finding a job amounts to 45% in Germany and even 54% in the UK. More specifically, in both countries around 20% of the previously unemployed report lower satisfaction levels at  $(t+1)$ . When looking at the distribution of people in low wage or temporary jobs across these categories, we do find that at least in Germany people with lower pay and fixed-term contracts are somewhat overrepresented among those who did not report a higher satisfaction score at  $(t+1)$ . For the UK the results are less conclusive which again may be attributed to the relatively small number of observations.

## 5.2 The role of job quality

In order to gain a better understanding of the relationship between the change of life satisfaction and characteristics of the new job we have conducted a number of multivariate analyses. Table A8 presents results obtained from the two stage model. Again, we have to point out that in particular the UK sample is small and estimates have to be interpreted with caution.

First, it is interesting to note that the hypothesis of correlated error terms is firmly rejected in all regressions, suggesting that standard probit models on change in life satisfaction will yield unbiased results.

With regards to job characteristics, we first include self-reported job satisfaction (columns 1 and 2). We have calculated three control variables, indicating whether employees reported a low, medium or high level of job satisfaction.<sup>15</sup> For both countries, these indicator variables are positive and highly significant. Other things being equal, the more satisfied workers are with their newly-found job, the higher the probability that they will have realised an increase in life satisfaction.

The level of life satisfaction at  $t$  is again a strong predictor of the change in life satisfaction. Furthermore, for Germany we can identify significant effects for the age variable as well as the change in household income.

How do the results change when we control more specifically for certain job characteristics? Columns 3 and 4 of Table A8 show that employees who either earn above the low pay threshold or are employed on a permanent basis have higher chances of reporting an increase in life satisfaction. Results are only significant for Germany, though. To rule out that the insignificant results for the UK are caused by the rather small sample, we also run a cross-sectional analysis on all employees (probit model). In a sample of almost 15,000 observations, having a low pay job does not

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<sup>15</sup> For the UK, we have summarised job satisfaction levels 1-3 into low, 4-5 into medium and 6-7 into high levels of job satisfaction. In Germany, reported job satisfaction levels between 0 and 4 correspond to low, 5-7 to medium and 8-10 to high levels of job satisfaction. The lowest category comprises 12% and 14% of all workers in the UK and Germany, respectively. For the distribution, see also Figure A2.



have a significant effect on overall life satisfaction, whereas workers on a fixed-term contract are more likely to report lower satisfaction levels.

Combining the two dimensions of pay and contract type (which we only did for Germany) allows us to detect some ranking among job types (column 5). In comparison with jobs characterised by low pay and fixed term contract, all other combinations indicate better chances of a rise in life satisfaction. Being employed on a permanent basis and receiving better pay yields the highest probability. Comparing permanent employment contracts only, the difference between the marginal effects for higher and low pay is significant.

Finally, the control variables for overeducation and change in health status by and large confirm our expectations. It is interesting to note that a considerable share of 44% feels overqualified for the new job. As one probably would expect, being overeducated does not contribute to higher levels of life satisfaction; but it also does not significantly lower the probability of an increase. On the other hand, if people experienced a decline in health status between  $(t+1)$  and  $t$ , they are more likely to realise lower (or unchanged) overall satisfaction levels.

How do results change when we also include those still being unemployed at  $(t+1)$ ? Results in columns 1 and 2 of Table A9 show that the more one is satisfied with one's job, the higher the probability to be also more satisfied with life overall. However, for both countries the effect is not significant for workers reporting low levels of job satisfaction. That is, those unemployed who accept jobs with only low satisfaction levels are unlikely to benefit from these jobs in terms of overall life satisfaction.

Columns 3-7 present our results when we explicitly test for employment conditions that are often considered unfavourable. For both countries we can reject the hypothesis that low pay and/or temporary employment are associated with lower levels of life satisfaction. On the contrary, workers employed under these conditions still have significantly better chances of higher life satisfaction than the unemployed. Putting this in context with the previous result, we can conclude that there must be other parameters than adverse working conditions which result in low levels of job satisfaction.

We try to shed some more light on the group of dissatisfied workers. Previous research has shown that level of autonomy, job content, and career prospects are among those parameters determining high quality jobs (e.g. Sousa-Poza, Sousa-Poza, 2000; European Commission, 2001; Clark, 2004). To capture the impact of some of these factors, we have constructed an index combining the following information: level of occupational autonomy, whether the current job is in the field one was trained for, whether one is overeducated for the current job as well as an indi-

cator measuring occupational prestige (Treiman score).<sup>16</sup> Higher index numbers correspond to lower parameter values, hence, indicating lower job qualities. We have used the index as an additional explanatory variable in a probit model with the dependent variable equal to 1 when life satisfaction declined between  $t$  and  $(t+1)$ . Results for Germany are presented in Table A10. Elder people are more likely to report a decline in life satisfaction when re-employed as do people with deteriorating health status. The index variable is highly significant as well, indicating that less autonomy and occupational prestige, overqualification, and not working in the trained occupation are associated with a decline in overall life satisfaction. Furthermore, the index remains significant at a 10% level when adding control variables for low pay and fixed term employment contract.

### 5.3 Medium term effects

For Germany we have constructed a sample which follows individuals over two years. This allows us to test whether positive changes associated with re-employment are likely to wear off over time. Results are presented in Table A11. Besides the standard covariates, the model in column 1 controls separately for people who have been employed at both points in time ("continuously employed"), who were unemployed at  $(t+1)$  but employed at  $(t+2)$  and those who were employed at  $(t+1)$  but unemployed at  $(t+2)$ . Results suggest that over a two year period, increases in life satisfaction associated with finding employment do persist. In comparison to those who are still unemployed at  $(t+2)$ , people who have been continuously employed or have found employment in the second year are significantly better off. Those becoming unemployed again report similar satisfaction levels than the long-time unemployed.

In column 2 we explicitly control for the effects of being continuously employed under unfavourable conditions. But again, in comparison to those still being unemployed at  $(t+2)$ , people who have been low paid or on a fixed-term contract at both points in time do report higher levels of life satisfaction. Also, we can still identify a certain hierarchy among jobs: although those being employed under less preferred circumstances are better off than the unemployed, the probability of benefiting from re-employment is higher when finding a good quality job, i.e. the differences in marginal effects reported in Table 11 are statistically significant.

## 6 Conclusions

The negative effects of unemployment on subjective well-being measures have been widely documented. However, there are only few studies which analyse the opposite direction – how does life satisfaction change when people leave unemployment and take up full-time employment. Our paper directly addresses this ques-

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<sup>16</sup> Due to multicollinearity problems, the variables cannot be simultaneously considered in a regression analysis. The index has been created with the help of multiple correspondence analysis and explains nearly 80% of the total variance.

tion and scrutinizes the importance of certain job characteristics when determining overall life satisfaction in Germany and the UK.

Our study arrives at a number of results. First, we can confirm that on average life satisfaction increases when unemployed people find employment. This finding also holds in a multivariate setting including change in household income as a control variable. The employment effect on life satisfaction is somewhat stronger for Germany which could be related to the fact that fewer people manage to find a job.

Second, we find no evidence that accepting a bad job will result in lower levels of well-being. The opposite seems to hold when using wages and type of employment contract as indicators for job quality: We find that in comparison with the unemployed, even people who only found low paid or temporary jobs still reported a significant increase in overall satisfaction levels. For Germany, we could show that this positive effect persists for at least two years. This can be interpreted as support for Layard's claim quoted in the introduction. But the results are less clear when we use job satisfaction as indicator for job quality: People with low job satisfaction levels are not significantly better off compared with those remaining unemployed.

Third, comparing life satisfaction levels among the group of workers, interesting cross-country differences emerge. For Germany, we find a clear ranking. Workers who have jobs with good characteristics according to our taxonomy are likely to benefit the most in terms of life satisfaction. In the UK, however, satisfaction levels of those being low paid or temporarily employed do not differ significantly from those who have found stable and better paid jobs.

Fourth, re-employment does not always make people better off. The share of people reporting a drop in life satisfaction after finding a job is around 20% for both countries. Our results for Germany suggest that in particular level of autonomy, occupational prestige and a mismatch between job requirements and individual educational level seem to contribute to lower levels of life satisfaction.

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## Appendix

**Table A1**  
**Sample sizes**

	<b>GSOEP (1995-2004)</b>	<b>BHPS (1996-2005)</b>
Unemployed at t*	9,697	3,058
<u>Labour market status at (t+1)**:</u>		
Full-time employed	1,526	474
Still unemployed	4,760	717
<u>Labour market status at (t+2)**:</u>		
Full-time employed	1,211	296
Unemployed	2,559	228

\*: Unconditional number of observations.

\*\* : Number of observations after controlling for valid information on life satisfaction and further explanatory variables.

**Table A2**  
**Distribution of jobs according to pay and contract type**

	<b>Germany</b>	<b>UK</b>
<b>Total number of full-time employees at (t+1):</b>	<b>1,526</b>	<b>474</b>
<u>Low pay (%):</u>		
No	51.0	55.5
Yes	49.0	44.5
<u>Type of contract (%):</u>		
Permanent contract	60.2	83.8
Fixed-term contract	39.8	16.2
<u>Job type (%)*:</u>		
Higher wage & permanent contract	36.1	-
Higher wage & fixed-term contract	14.9	-
Low wage & permanent contract	24.1	-
Low wage & fixed-term contract	24.9	-

Sample: Persons unemployed at t and full-time employed at (t+1)

\*: Due to the small number of observations we refrained from creating different job types for the UK.

**Table A3**  
**Summary statistics**

	Germany	UK
Life satisfaction	5.84 (1.97)	4.83 (1.47)
Age	43.9 (12.1)	36.7 (12.2)
Household income (local currency)	1,690 (929)	1,953 (1,664)
Female	0.46	0.30
Cohabitation	0.72	0.54
Household with children	0.36	0.34
<u>Formal education:</u>		
No, low or unknown	0.24	0.30
Middle (ISCED 3-4)	0.61	0.38
High (ISCED 5+)	0.15	0.32
Full-time job at (t+1)	0.24	0.40
Number of observations	6,286	1,191

Notes: Average values at (t+1) are shown. Life satisfaction runs from 1 – 7 in the BHPS and from 0 – 10 in the GSOEP. Greater numbers correspond to higher levels of life satisfaction in both data sets. Cohabitation includes unmarried couples. For numeric values, standard deviations are reported in brackets.

**Table A4**  
**Life satisfaction of unemployed at t, depending on labour market status at (t+1), Germany**

	Employed at (t+1)	Unemployed at (t+1)
<b>Life satisfaction at t:</b>		
Mean	5.69	5.70
Standard error	0.05	0.03
N	1,526	4,760
<b>Change in life satisfaction from t to (t+1):</b>		
Mean	+0.83	-0.07
Standard error	0.05	0.03
N	1,526	4,760
<b>Change in life satisfaction from (t+1) to (t+2):</b>		
... if employed at (t+2):		
Mean	+0.03	+0.85
Standard error	0.06	0.10
N	775	436
... if unemployed at (t+2):		
Mean	-0.70	-0.03
Standard error	0.10	0.04
N	335	2,224

**Table A5**  
**Life satisfaction of unemployed at t, depending on labour market status at (t+1), UK**

	Employed at (t+1)	Unemployed at (t+1)
<b>Life satisfaction at t:</b>		
Mean	4.62	4.71
Standard error	0.06	0.06
N	474	717
<b>Change in life satisfaction from t to (t+1):</b>		
Mean	+0.45	-0.04
Standard error	0.06	0.06
N	474	717
<b>Change in life satisfaction from (t+1) to (t+2):</b>		
... if employed at (t+2):		
Mean	-0.11	+0.49
Standard error	0.08	0.15
N	235	61
... if unemployed at (t+2):		
Mean	-0.35	-0.08
Standard error	0.24	0.11
N	23	205

**Table A6**  
**Determinants of change in life satisfaction between t and (t+1)**

	Germany	UK
Age	-0.034 (0.000)	-0.020 (0.042)
Age squared	0.000 (0.000)	0.000 (0.048)
Female	0.009 (0.490)	-0.013 (0.702)
Cohabitation	0.040 (0.009)	-0.002 (0.945)
Household with children	0.035 (0.031)	-0.006 (0.880)
Change in household income ('000)	0.033 (0.019)	-0.012 (0.302)
Secondary education	-0.010 (0.549)	-0.012 (0.755)
Tertiary education	-0.025 (0.233)	-0.016 (0.694)
Life satisfaction at t	-0.119 (0.000)	-0.168 (0.000)
Employed at (t+1)	0.249 (0.000)	0.195 (0.000)
N	6,286	1,191
Chi <sup>2</sup>	1,075.53	256.39
Pseudo R <sup>2</sup>	0.17	0.19

Notes: Marginal effects of probit regressions are shown. Standard errors are corrected for repeated observations. P-values are reported in parentheses. The dependent variable equals 1 if life satisfaction increased from t to (t+1) and zero otherwise. Reference categories: Male, single, no children living in household, no, low or unknown level of education, still unemployed.



**Table A7**  
**Change in life satisfaction when employed at (t+1)**

	Percent	Overrepresentation of low wage jobs (% points)	Overrepresentation of fixed-term jobs (% points)
<u>Germany:</u>			
Negative	23	+2.5	+1.6
Unchanged	22	+3.4	+5.5
Positive	55	-5.9	-7.1
<u>UK:</u>			
Negative	20	+1.5	-3.8
Unchanged	34	-1.5	+6.5
Positive	46	0.0	-2.7

**Table A8****Determinants of change in life satisfaction (Employed only, two stage selection model)**

	(1) Germany	(2) UK	(3) Germany	(4) UK	(5) Germany
<b>Change in life satisfaction</b>					
Age	-0.023 (0.028)	-0.023 (0.160)	-0.024 (0.017)	-0.026 (0.121)	-0.022 (0.035)
Age squared	0.000 (0.033)	0.000 (0.157)	0.000 (0.025)	0.000 (0.121)	0.000 (0.031)
Change in household income ('000)	0.068 (0.004)	-0.020 (0.341)	0.073 (0.001)	-0.027 (0.215)	0.063 (0.009)
Life satisfaction at t	-0.168 (0.000)	-0.257 (0.000)	-0.155 (0.000)	-0.249 (0.000)	-0.148 (0.000)
Medium level of job satisfaction	0.173 (0.000)	0.191 (0.028)	-	-	-
High level of job satisfaction	0.312 (0.000)	0.291 (0.000)	-	-	-
Higher wage	-	-	0.053 (0.077)	0.028 (0.610)	-
Permanent contract	-	-	0.094 (0.002)	0.075 (0.289)	-
Higher wage & permanent contract	-	-	-	-	0.135 (0.003)
Higher wage & fixed-term contract	-	-	-	-	0.085 (0.074)
Low wage & permanent contract	-	-	-	-	0.101 (0.015)
Overeducated	-	-	-	-	-0.042 (0.148)
Change in health status	-	-	-	-	-0.076 (0.000)
<b>Employment status</b>	-	-	-	-	-
Age	-0.019 (0.193)	-0.013 (0.615)	-0.019 (0.200)	-0.013 (0.613)	-0.020 (0.113)
Age squared	-0.000 (0.334)	-0.000 (0.752)	-0.000 (0.322)	-0.000 (0.755)	-0.000 (0.321)
Female	-0.366 (0.000)	0.114 (0.220)	-0.370 (0.000)	0.119 (0.201)	-0.328 (0.000)
Cohabitation	0.213 (0.000)	0.488 (0.000)	0.203 (0.000)	0.488 (0.000)	0.193 (0.000)
Household with children	-0.171 (0.000)	-0.358 (0.000)	-0.171 (0.000)	-0.358 (0.000)	-0.158 (0.000)
Secondary education	0.347 (0.000)	0.480 (0.000)	0.353 (0.000)	0.483 (0.000)	0.404 (0.000)
Tertiary education	0.612 (0.000)	0.847 (0.000)	0.614 (0.000)	0.847 (0.000)	0.680 (0.000)
Life satisfaction at t	0.025 (0.014)	-0.009 (0.737)	0.024 (0.019)	-0.009 (0.739)	0.019 (0.035)
Looked actively for work	0.435 (0.000)	0.353 (0.000)	0.430 (0.000)	0.352 (0.000)	0.466 (0.000)
<b>Correlation of error terms (ρ)</b>	-0.212	-0.248	-0.110	-0.211	-0.229
N Total (N uncensored)	5,295 (1,457)	1,191 (474)	5,315 (1,477)	1,191 (474)	5,202 (1,364)
Wald Test of independent equations	0.257	0.351	0.533	0.399	0.233

Notes: For the outcome equation, marginal effects are shown. Standard errors are corrected for repeated observations. P-values are reported in parentheses. Dependent variable of outcome equation equals 1 if life satisfaction increased from  $t$  to  $(t+1)$  and zero otherwise. Due to missing observations on job satisfaction and overeducation, the samples in (1) and (5) are somewhat reduced. Reference categories: Male, single, no children living in household, no, low or unknown level of education, low wage and fixed-term employment, not overeducated for current job (column 5).

**Table A9****Determinants of change in life satisfaction between t and (t+1) (employed and unemployed)**

	(1) Germany	(2) UK	(3) Germany	(4) UK	(5) Germany	(6) UK	(7) Germany
Age	-0.029 (0.000)	-0.020 (0.024)	-0.035 (0.000)	-0.021 (0.019)	-0.029 (0.000)	-0.021 (0.021)	-0.030 (0.000)
Age squared	0.000 (0.000)	0.000 (0.027)	0.000 (0.000)	0.000 (0.022)	0.000 (0.000)	0.000 (0.024)	0.000 (0.000)
Change in household income ('000)	0.033 (0.020)	-0.011 (0.332)	0.033 (0.018)	-0.013 (0.247)	0.035 (0.016)	-0.012 (0.281)	0.033 (0.020)
Life satisfaction at t	-0.119 (0.000)	-0.171 (0.000)	-0.117 (0.000)	-0.168 (0.000)	-0.117 (0.000)	-0.168 (0.000)	-0.116 (0.000)
Low level of job satisfaction	0.046 (0.224)	0.021 (0.758)	-	-	-	-	-
Medium level of job satisfaction	0.208 (0.000)	0.178 (0.000)	-	-	-	-	-
High level of job satisfaction	0.337 (0.000)	0.249 (0.000)	-	-	-	-	-
Higher wage	-	-	0.287 (0.000)	0.211 (0.000)	-	-	-
Low wage	-	-	0.203 (0.000)	0.182 (0.000)	-	-	-
Permanent contract	-	-	-	-	0.286 (0.000)	0.205 (0.000)	-
Fixed-term contract	-	-	-	-	0.188 (0.000)	0.143 (0.024)	-
Higher wage & permanent contract	-	-	-	-	-	-	0.302 (0.000)
Higher wage & fixed-term contract	-	-	-	-	-	-	0.253 (0.000)
Low wage & permanent contract	-	-	-	-	-	-	0.263 (0.000)
Low wage & fixed-term contract	-	-	-	-	-	-	0.152 (0.000)
Change in health status	-	-	-	-	-	-	-0.061 (0.000)
N	6,265	1,191	6,286	1,191	6,286	1,191	6,278
Pseudo R <sup>2</sup>	0.17	0.20	0.17	0.19	0.17	0.19	0.18

Notes: Marginal effects of probit regressions are shown. Standard errors are corrected for repeated observations. P-values are reported in parentheses. Dependent variable equals 1 if life satisfaction increased from t to (t+1) and zero otherwise. Due to missing observations on self-reported job satisfaction and health status, the samples in (1) and (7) are somewhat reduced. Reference categories: Male, single, no children living in household, no, low or unknown level of education, unemployed.

**Table A10**  
**Why does finding a job not raise life satisfaction in Germany?**

	(1)	(2)
Age	0.020 (0.012)	0.021 (0.006)
Age squared	-0.000 (0.025)	-0.000 (0.012)
Female	-0.023 (0.283)	-0.038 (0.083)
Cohabitation	-0.053 (0.059)	-0.053 (0.062)
Household with children	0.024 (0.334)	0.023 (0.366)
Change in household income ('000)	-0.044 (0.005)	-0.041 (0.008)
Secondary education	0.033 (0.287)	0.034 (0.255)
Tertiary education	0.082 (0.068)	0.084 (0.061)
Life satisfaction at t	0.087 (0.000)	0.088 (0.000)
Change in health status	0.053 (0.000)	0.052 (0.000)
Index on job quality	0.029 (0.010)	0.021 (0.084)
Low wage	-	0.039 (0.096)
Fixed-term contract	-	0.028 (0.218)
N	1,374	1,374
Chi <sup>2</sup>	181.47	180.64
Pseudo R <sup>2</sup>	0.18	0.19

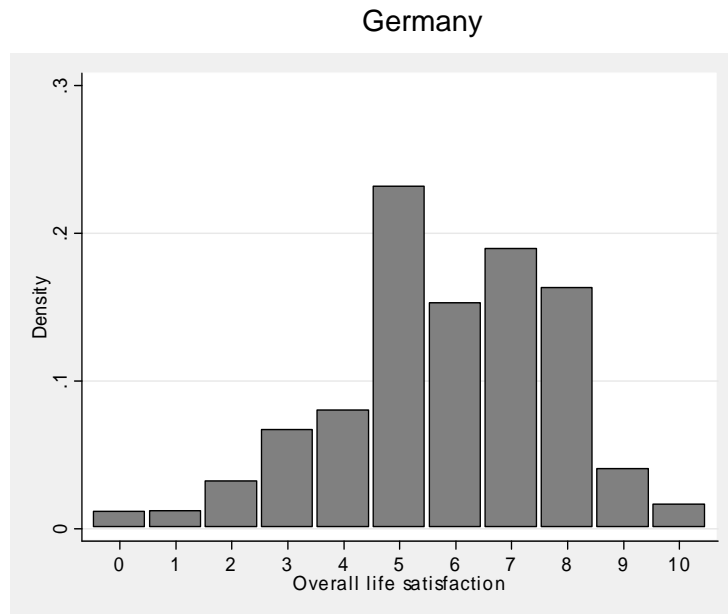
Notes: Marginal effects of probit regressions are shown. Standard errors are corrected for repeated observations. P-values are reported in parentheses. Dependent variable equals 1 if life satisfaction decreased from  $t$  to  $(t+1)$  and zero otherwise. Reference categories: Male, single, no children living in household, no, low or unknown level of education. For index components see main text.

**Table A11**  
**Changes in life satisfaction between  $t$  and  $(t+2)$ , Germany**

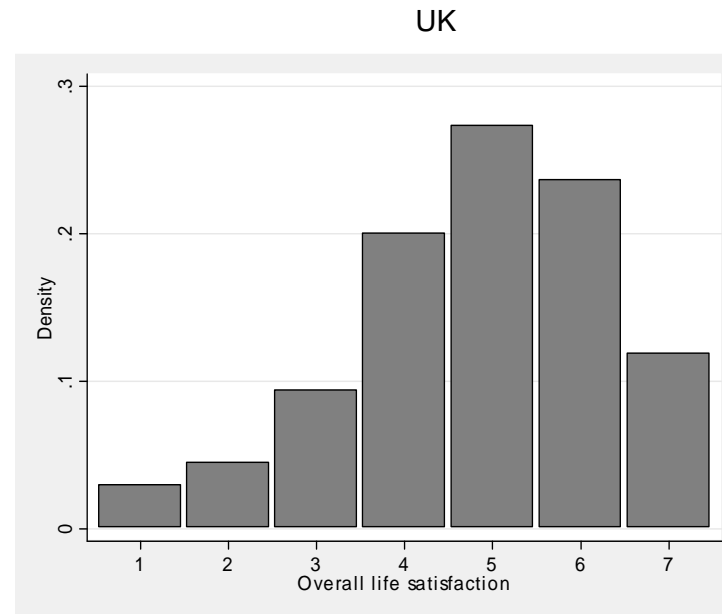
	(1)	(2)
Age	-0.043 (0.000)	-0.044 (0.000)
Age squared	0.000 (0.000)	0.000 (0.000)
Female	0.003 (0.876)	0.005 (0.786)
Cohabitation	0.027 (0.205)	0.028 (0.184)
Household with children	0.001 (0.978)	0.001 (0.978)
Change in household income ('000)	0.029 (0.021)	0.029 (0.022)
Secondary education	-0.035 (0.133)	-0.031 (0.180)
Tertiary education	-0.048 (0.108)	-0.046 (0.130)
Life satisfaction at t	-0.139 (0.000)	-0.140 (0.000)
Continuously employed	0.272 (0.000)	0.299 (0.000)
Employed at $(t+2)$	0.202 (0.000)	0.198 (0.000)
Job lost	0.013 (0.695)	0.009 (0.780)
Fixed-term contract at $(t+1)$ and $(t+2)$	-	0.207 (0.000)
Low wage at $(t+1)$ and $(t+2)$	-	0.162 (0.000)
N	3,770	3,770
Chi <sup>2</sup>	659.32	671.11
Pseudo R <sup>2</sup>	0.21	0.21

Notes: Marginal effects of probit regressions are shown. Standard errors are corrected for repeated observations. P-values are reported in parentheses. Dependent variable equals 1 if life satisfaction decreased from  $t$  to  $(t+1)$  and zero otherwise. Reference categories: Male, single, no children living in household, no, low or unknown level of education.

**Figure A1**  
**Distribution of life satisfaction in Germany and the UK**

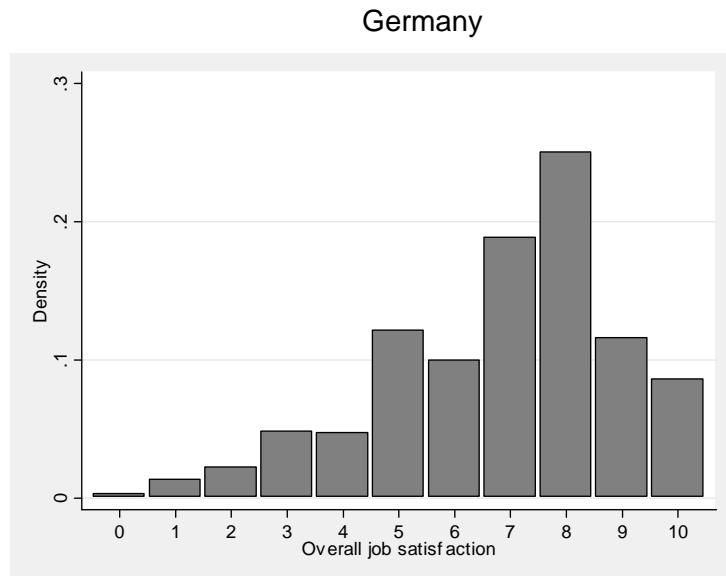


Observations: 6,286  
Variance: 3.87  
Skewness: -0.45  
Kurtosis: 3.09

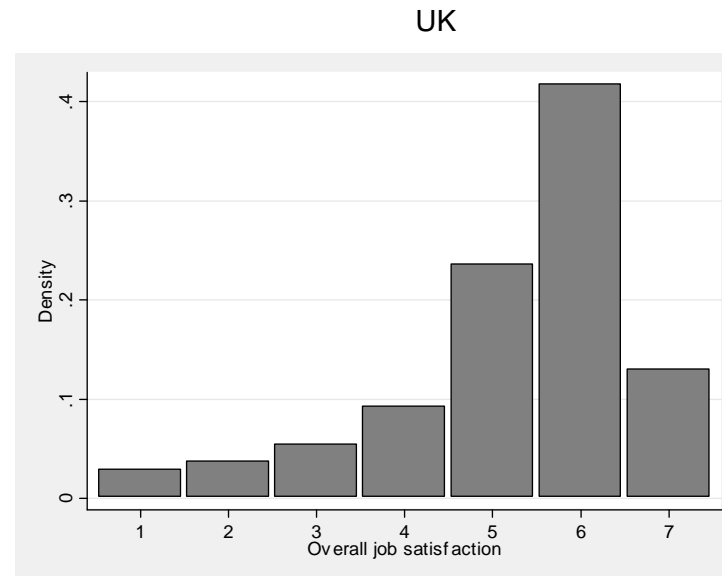


Observations: 1,191  
Variance: 2.15  
Skewness: -0.57  
Kurtosis: 2.94

**Figure A2**  
**Distribution of job satisfaction in Germany and the UK**



Observations: 1,505  
Variance: 4.49  
Skewness: -0.71  
Kurtosis: 3.11



Observations: 474  
Variance: 2.01  
Skewness: -1.22  
Kurtosis: 4.17

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