Unhappiness and job finding

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Abstract

It is puzzling that people feel quite unhappy when they become unemployed, but at the same time active labor market policies are needed to bring unemployed back to work more quickly. Using GSOEP data, we investigate whether there is indeed such a puzzle. First, we find that nearly half of the unemployed do not experience a drop in happiness, which might explain why at least some workers need to be activated. In addition to that, we find that even unemployed who experience a drop in happiness do not speed up their job finding. Apparently, there is no link between unhappiness and job finding. Hence, there is no contradiction between unemployed being unhappy and the need for activation policies.

Keywords: Happiness, Unemployment duration.

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1 Introduction

There seems to be a striking inconsistency between two empirical findings in unemployment studies. First, there is the well-known finding that unemployed are unhappy. This unhappiness goes beyond the drop in income that most individuals experience when they become unemployed. Hence, unemployment is not only associated with monetary costs but also with non-pecuniary costs, reflected by lower self-reported life satisfaction, as is shown in a growing number of happiness studies (e.g. Clark and Oswald (1994), Winkelmann and Winkelmann (1998), Kassenboehmer and Haisken-DeNew (2009)). Second, many studies find that activation programs are very effective in bringing unemployed back to work. Unemployed spend a long time in unemployment, and government interventions through active labor market programs (e.g. Lalive et al. (2008)) or sanctions (e.g. Van den Berg et al. (2004); Abbring et al. (2005); Arni et al. (2009)) can significantly increase the re-employment rate of unemployed workers.

These two main findings give rise to a puzzle: why do people need to be stimulated to find a new job if unemployment makes them unhappy? One might expect that a reduction in happiness provides a direct incentive to search more actively for a job. Then, a larger drop in happiness should lead to a higher job finding rate. The current paper investigates the relationship between unhappiness and job finding to address the question whether indeed there is a puzzle or an inconsistency.

Several studies report that life satisfaction drops when someone becomes unemployed. One possible explanation for this is the presence of social norms to working (Stutzer and Lalive (2004)), which is tempered if the unemployed person knows more people, such as friends and family, that are unemployed too (Clark, 2003). Clark et al. (2010) illustrate that the drop in happiness varies with aggregate economic conditions. Just as in the literature on job mobility, which shows that workers are more likely to search for a new job the unhappier they are in their current job (e.g. Freeman (1978), Clark et al. (1998), Lévy-Garboua et al. (2007), Delfgaauw (2007), Green (2010)), one would expect that a drop in self-reported life satisfaction will affect job search behavior of unemployed. Indeed, Clark (2003) who uses a measure for mental wellbeing (GHQ-12) from BHPS shows that unemployed whose mental wellbeing dropped by more than two points when they entered unemployment are more likely to actively search for a new job one year later,

and consequently are less likely to be still in unemployment the following year.[1] As yet, the question of why the drop in life satisfaction for unemployed workers does not eliminate the need for activation programs remains unanswered.

The current paper adds to the literature by providing an explanation for why the drop in happiness is not sufficiently effective in getting unemployed back to work, and why activation programs are needed to improve re-employment chances. Using 1994–2007 GSOEP data, we show that there is a significant amount of variation in the change in happiness upon entering unemployment. Although unemployment makes people unhappy on average, nearly half of the unemployed do not experience a drop in happiness when becoming unemployed. This might explain why at least some workers need to be activated. In addition to this, our analyzes clearly show that even for those who do experience a drop in happiness there is no relation between unhappiness and job finding. Since unhappiness does not seem to trigger a higher job finding rate, there is no contradiction between unemployed being unhappy and the need for activation policies to stimulate unemployed to find a job more quickly.

The paper is set up as follows. Section 2 presents the data and section 3 shows how happiness of German workers is affected by labor market transitions from paid employment to unemployment. The analysis confirms the well-known empirical finding that becoming unemployed causes a big drop in life satisfaction for each of the groups. Section 4 presents the empirical analysis of job finding rates and the way these are affected by life satisfaction. Section 5 shows how the change in happiness affects the quality of post-unemployment jobs. Finally, section 6 concludes.

2 GSOEP data

In our empirical analysis we use data from the German Socio-Economic Panel (GSOEP), an annual panel survey representative for the resident German population aged 18 years and older, for the period 1994-2007.[2] In 2007, there were nearly 11,000 households, and more than 20,000 persons sampled. The dataset contains extensive information on both

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[1]Mavridis (2010) using BHPS data finds that a drop in mental well-being reduces unemployment duration. However, as we discuss in more detail later on, this may be a consequence of his empirical strategy. It could also be that mental well-being is an indicator that differs from life satisfaction. Björklund (1985) for example finds no effect of unemployment on mental health.

[2]More detailed information about the GSOEP can be found at www.diw.de/english/.

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the individual and the household level, such as labor market position and transitions, as well as detailed information about satisfaction measures.

Our study uses information on the duration in unemployment (in months), starting between 1994 and 2006, and ending between 1994 and 2007 (see the appendix for details). Information on life satisfaction is based on the question "We would like to ask you about your satisfaction with your life in general", where the individuals could report their happiness on a 10-point scale, ranging from 0 "Totally unhappy" to 10 "Totally happy". Job satisfaction is measured on a similar scale, and is obtained from the question "How happy are you with your job (if gainfully employed)". The change in life satisfaction when individuals become unemployed is denoted as Δls.

In addition to the satisfaction information we also use information on the personal characteristics of the unemployed. First, we use the individuals's age (which in the paper we recode into 4 dummy variables for the age cohort 19-24, 25-34, 35-44, 45-54), marital status, and a dummy for the presence of children in the household. We distinguish between 4 levels of educational attainment: (0) No formal education degree, (1) Secondary school - 9 years (Hauptschule), (2) Secondary school - 10 years (Realschule), and (3) General qualification for university entrance - 12/13 years (Abitur). Vocational attainment is classified as follows: (0) No vocational degree, (1) Vocational degree, and (2) University / Technical college. In addition, we have information about (potential) income sources. We know whether or not in the previous year someone was entitled to unemployment insurance benefits, we have information about the real household income[3], and about the individual wages earned in the pre-unemployment job. Information about post-unemployment wages and job satisfaction were obtained from the next annual interview round. Since some people have already left their new job by then, and others never find a new job within the sample period, post-unemployment job information is missing for about 36 percent of unemployed males and about 48 percent of unemployed females.

Our sample is restricted to men and women aged 19-54. People aged 55 and above are excluded to avoid early retirement transitions after job loss. We removed observations for individuals that started their unemployment spell before the year 1984, and observations with missing information on educational attainment. A table with sample means is

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[3]This is based on the question "How high is the total monthly income of all the household members at present? Please give the monthly net amount, the amount after the deduction of tax and national insurance contributions. Regular payments such as rent subsidy, child benefit, government grants, subsistence allowances, etc., should be included."

provided in the Appendix.

3 How unemployment affects life satisfaction

3.1 Unhappy in unemployment

Figure 1 presents the distribution of life satisfaction while employed and while unemployed. It is evident that on average for both men and women life satisfaction is lower during spells of unemployment. Table 1 illustrates the relationship between happiness and the labor market position by presenting the parameter estimates of a fixed effects ordered logit model on life satisfaction (ls). The model estimates $Pr(ls_{it} = j) = \Lambda(\tau_{ij} - X_{it}\beta - U_{it}\delta - \alpha_i) - \Lambda(\tau_{i,j-1} - X_{it}\beta - U_{it}\delta - \alpha_i)$, where j represents the response category ($j = 1, \ldots, 10$) and $\tau_{i0} = -\infty$, $\tau_{i1} = 0$ and $\tau_{i10} = \infty$. Furthermore, Λ is an indicator of the logistic distribution function, U is a dummy for being in unemployment, and τ and α are individual specific thresholds and individual fixed effects, respectively. The probability that life satisfaction for worker i equals j is the probability that the latent variable ls_i^* lies between the boundaries $j - 1$ and j. Table 1 shows that being unemployed lowers one's happiness significantly. Since (changes in) household income are controlled for, the drop in happiness goes beyond a monetary loss and also include other non-pecuniary costs of unemployment. This result follows previous findings by e.g. Winkelmann and Winkelmann (1998) and Kassenboehmer and Haisken-DeNew (2009).

3.2 Heterogeneous effects on happiness

Although life satisfaction in unemployment is lower *on average*, there is substantial heterogeneity in the drop in happiness. Figure 2 shows that even though on average unemployment lowers people's happiness, nearly half of the men and women who became unemployed do not experience a drop in happiness. In fact, about 23 percent of them even experience a gain in happiness upon entering unemployment.

To understand what causes these differences in the happiness effect of unemployment we distinguish (i) life satisfaction while employed (in the year before entering unemployment), (ii) life satisfaction while unemployed (in the first year of their unemployment spell), and (iii) the change in life satisfaction upon becoming unemployed. The baseline results from three ordered logit models are presented in Panel A of Table 2. As shown

some individual characteristics are associated with lower levels of happiness, such as age, but these level differences net out when the change in happiness is considered.[4] Columns 3 and 6 show that a higher household income and higher job satisfaction are the major factors in explaining the drop in happiness. The larger the drop in household income, the larger the drop in happiness. Furthermore, apart from any changes in household income, individuals are more likely to experience a drop in happiness when they become unemployed if they were happy with their job at the time they were still working. The results in Panel B add to this that men are more likely to experience a drop in happiness if they have experienced a previous unemployment spell. Furthermore, the expected probability of finding a job seems key in the effect of unemployment on happiness. Those people who expect extreme difficulties in finding a new job experience the largest drop in happiness; people who consider it easy to find a new job might actually experience an increase in happiness when they become unemployed. The latter can be explained by the fact that they expect a very short unemployment spell, and hence they enjoy this period of having more leisure time without worrying about the future. Probably, for these individuals, the gain in happiness will not act as a disincentive to find a new job since it is the temporary nature of the unemployment spell which makes them enjoy it more.

The next section investigates to what extent a drop in happiness gives an incentive to look harder for a job for those individuals who do experience a happiness reduction upon entering unemployment.

4 Life satisfaction and job finding

4.1 Probability to find a job

Figure 3 illustrates how the change in life satisfaction upon entering unemployment is associated with the probability of finding a job before the next survey date. Note that there is no clear relationship, since both people with a drop and those with a gain in happiness have relatively high job finding rates. For those people who became unhappy in unemployment, this seems to suggest that they searched more intensively for a new job than those whose happiness was unaffected. However, for those who became more happy in unemployment, this finding seems counterintuitive. One possible explanation is that

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[4]Note that in columns 3 and 6 also individual fixed effects are taken out due to first differences.

the high job finding rate for those who did not experience a drop in happiness is driven by the high job finding rates of those who knew that finding a new job would be easy. Those people are quite likely to enjoy this temporary unemployment, because they know that they will soon find a new job (and hence their job finding rate is high). We investigate this possibility in more detail in Table 3.

Table 3 shows the results from a bivariate probit model, where columns 1 and 3 show the results for the probability of having found a job in the next survey, while columns 2 and 4 show the results for the probability of experiencing a drop in life satisfaction. Note that, because we use the change in life satisfaction as explanatory variable, we do not have to worry too much about unobserved personal characteristics affecting life satisfaction. To the extend that these are fixed, they are removed by taking first differences in life satisfaction. The correlation parameters show to what extent this assumption is correct.[5] We find that the correlation parameter ρ is not significantly different from zero for men. Apparently for men there does not seem to be a correlation between unobserved characteristics affecting the probability to find a job and the change in life satisfaction. For women, the correlation parameter is marginally significant. The results in Panel A suggest that there is no significant effect for the change in life satisfaction on the probability of having found a job one survey later. In Panel B we include the unemployed's expectation regarding the difficulty of finding a new job. It appears that these expectations come true: those who expect extreme difficulty in finding a new job have a much lower probability to be employed one survey later than those who consider it easy to find a new job. However, the effect of the change in life satisfaction on the probability to find a job is still insignificantly different from zero.[6]

4.2 Job finding rates

4.2.1 Specification of the likelihood

In this section we depart from using a discrete choice model for finding a new job one survey later, and we investigate job finding rates and how these are related to the drop in life satisfaction. For the moment we ignore the influence of observed and unobserved

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[5]Identification of the effect of the drop in life satisfaction on the job finding probability comes from the functional form assumption.

[6]Note that interaction effects between these expectations and the drop in happiness are not significantly different from zero either.

characteristics on the job finding rate and assume that the job finding rate $\theta(t)$ depends only on the elapsed duration of unemployment t. We define the conditional density function of the completed unemployment durations as $g(t) = \theta(t)\exp(-\int_0^t \theta(s)ds)$, with the accompanying survivor function $S(t) = \exp(-\int_0^t \theta(s)ds)$.

For some individuals we know their elapsed duration of unemployment at the time of the survey while for other individuals the elapsed duration of unemployment is unknown. For some individuals we know the month in which they found a job, while for other individuals we only know that they found a job before the next survey or we know that at the time of the next survey they still had not found a job. We define time at the survey as 0, the elapsed duration of unemployment at the time of the survey as t_e and the time between the survey and the time at which the unemployed finds a job, i.e. the residual unemployment duration as t_r. Furthermore, we define the calendar time period between the survey and the previous survey when all unemployed still had a job as $\bar{t}_e$ and the time period between the survey and the next survey as $\bar{t}_r$.

To be able to estimate job finding rates we have to deal with several problems that are related to the nature of the GSOEP data. There are issues of left truncation, left censoring, right censoring and interval censoring. The sample of unemployed workers is drawn at a particular survey date which implies that some unemployed have short elapsed unemployment durations while others were unemployed for quite some time. In the specification of the likelihood we take this stock sampling into account by conditioning on the survival taking into account that all unemployed still have a job at time $-\bar{t}_e$.

We distinguish six combinations of left truncation, left censoring, right censoring and interval censoring with separate contributions to the likelihood.[7]

1. Left truncation, the unemployed found a job at time t_r so that total unemployment duration is in between t_e+t_r-1 and t_e+t_r months: $\frac{S(t_e+t_r-1)-S(t_e+t_r)}{\int_0^{\bar{t}_e} S(s)ds}$

2. Left censoring, the unemployed found a job at time t_r so that total unemployment duration is in between t_r and $\bar{t}_e+t_r$ months: $\frac{S(t_r)-S(t_r+\bar{t}_e)}{\int_0^{\bar{t}_e} S(u|s)ds}$

3. Left truncation while the unemployed found a job before the next survey but with unknown residual duration: $\frac{S(t_e)-S(t_e+\bar{t}_r)}{\int_0^{\bar{t}_e} S(s)ds}$

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[7]We assume a stationary labor market, i.e. an entry rate into unemployment that is constant over time; see D'Addio and Rosholm (2002) for a nice overview of censoring and truncation mechanisms.

4. Left censoring while the unemployed found a job before the next survey but with unknown residual duration: $\frac{S(\bar{t}_r) - S(\bar{t}_r + \bar{t}_e)}{\int_0^{\bar{t}_e} S(s)ds}$

5. Left truncation while the unemployed still had not found a job at the next survey: $\frac{S(t_e + \bar{t}_r)}{\int_0^{\bar{t}_e} S(s)ds}$

6. Left censoring while the unemployed still had not found a job at the next survey: $\frac{S(\bar{t}_r) - S(\bar{t}_r)}{\int_0^{\bar{t}_e} S(s)ds}$

4.2.2 Specification of the job finding rate

Job finding rates are analyzed using a mixed proportional hazard framework. Differences between individuals in job finding rates are assumed to be related to observed characteristics including the drop in life satisfaction and the elapsed unemployment duration. The job finding rate, at duration t conditional on observed characteristics x and unobserved characteristics u, is specified as

$$\theta(t \mid x, u, \Delta ls) = \lambda(t) \exp(x'\beta + \delta I(\Delta ls < 0) + u) \tag{1}$$

where the I represent an indicator function that has the value of 1 if $\Delta ls < 0$ and a value of zero otherwise, where Δls represents the change in life satisfaction. Furthermore, $\lambda(t)$ represents individual duration dependence, β represents a vector of parameters and δ is the main parameter of interest. We model flexible duration dependence by using a step function:

$$\lambda(t) = \exp(\Sigma_k \lambda_k I_k(t)) \tag{2}$$

where $k \ (= 1,..,5)$ is a subscript for duration interval and $I_k(t)$ are time-varying dummy variables that are one in subsequent duration intervals. We distinguish quarterly duration intervals over the first year of unemployment and the aggregate category 12+ months. Because we also estimate a constant term, we normalize $\lambda_1 = 0$.

We assume that the random effects u come from a discrete distribution G with two points of support (u_1, u_2), related to two groups of individuals. The first group has a high job finding rate, the other has a low job finding rate. The associated probabilities are denoted as follows: $\Pr(u = u_1) = p_1$, $\Pr(u = u_2 - u_1) = p_2$. Here $p_j \ (j = 1, 2)$ is assumed

to have a logit specification: $p_j = \frac{\exp(\alpha_j)}{\Sigma_j \exp(\alpha_j)}$ and the normalization is $\alpha_2 = 0$.

Calculating the change in life satisfaction implies that unobserved fixed effects are removed. Even if there is a correlation between time-invariant unobservables affecting life satisfaction and unobservables affecting job finding rates this correlation can be ignored. We consider the change in life satisfaction when individuals become unemployed as exogenous to the job finding rate.

4.2.3   Parameter estimates

Panel A of Table 4 shows the baseline parameter estimates. From the first column it is clear that for men a drop in life satisfaction has a positive but insignificant effect on the job finding rate. Furthermore, age has a negative effect, while household income, UI entitlement and being married have a positive effect on the job finding rate. The number of children of the unemployed workers does not affect the job finding rate. Finally, the first column of Panel A shows clear presence of unobserved heterogeneity. Conditional on elapsed duration and observed characteristics there are two groups of unemployed of that are different in job finding rates. The larger group representing about 55% has a substantial lower job finding rate than the other group of unemployed men. The second column shows the parameter estimates for females. Most of the parameter estimates are very similar to those of men with one exception. Whereas married men have a higher job finding rate than unmarried men, this is opposite for women. Married women have a smaller job finding rate than unmarried women. Also the distribution of unobserved heterogeneity is somewhat different. For women the group with a low job finding rate is substantially larger. About one-third of women have a high job finding rate while two-thirds have a substantially lower job finding rate.

To test the robustness of our main findings we performed a number of sensitivity analyses of which the results are reported in panels B to F of Table 4. In panel B we add expectations regarding the difficulty of finding a new job as additional explanatory variables. Workers who think that it is extremely difficult to find a job have a lower job finding rate while those who expect it to be easy have a higher job finding rate. However, the effect of the drop in happiness on the job finding rate is not affected.[8]

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[8] Also interaction terms between the drop in happiness and expected difficulties in finding a job do not have a significant effect on the job finding rates.

In panel C we investigate whether alternative specifications of the change in life satisfaction generate different results. In panel $C1$ we use the full range of the change in life satisfaction as one of the explanatory variables. In panel $C2$ we include the change in life satisfaction with a truncation at both ends of -2 and +2. In panel $C3$ we use a dummy for the drop in life satisfaction to be more than one unit. In all cases the relevant parameter estimates do not change.

In the estimates presented in panel D of Table 4 we included job satisfaction in the pre-unemployment job as additional explanatory variable. This job satisfaction has a positive effect on the job finding rate but only for women this effect is different from zero at conventional levels of significance. Including job satisfaction hardly affects the parameter estimates for the change in life satisfaction. In the last two panels of Table 4 we investigate the importance of our model specification. Panel E shows that for women it is important to account for potential unobserved heterogeneity. If we ignore this and use a proportional hazard specification we find that the drop in life satisfaction has a significant positive effect on the job finding rate. Panel F shows that the positive effect of the drop in life satisfaction on the job finding rate is also found if we pool the data for men and women.[9]

All in all the results do not show that the change in life satisfaction upon entering unemployment affects the job search behavior of unemployed individuals.

5 Quality of post-unemployment jobs and post-unemployment life

Although changes in life satisfaction do not affect job search intensity, they might affect the quality of re-employment matches. The effect on the quality of the re-employment job match is ambiguous ex ante. On the one hand, a larger drop in life satisfaction may lower the reservation wage leading to a post-unemployment wage loss. In addition, unhappiness may give rise to poor job search, i.e. individuals may be more concerned

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[9]The findings in panels E and F may also explain why Clark (2003) and Mavridis (2010) find positive effects of the drop in mental well-being on the job finding rates. In both studies the authors do not allow the job finding rate to be influenced by unobserved heterogeneity. In addition to that Mavridis (2010) pools data for men and women. Of course the differences in findings may also have to do with the difference in measures of well-being – self-reported life satisfaction rather than a measure for mental well-being, GHQ-12.

about finding a job than about the quality of this new job, which may result in poor matching efficiency. On the other hand, a small drop in life satisfaction could also have negative effects on re-employment job quality via the effect on unemployment duration. If a small drop in happiness causes the unemployment duration to be longer, skills are more likely to become obsolete and a worse post-unemployment situation arises through loss of human capital. This section investigates how the change in happiness affects the quality of the post-unemployment job by comparing wages and job satisfaction in the pre- and post-unemployment job. In addition, we compare pre- and post-unemployment life satisfaction.

Table 5 gives an impression of the change in the pre- and post-unemployment life satisfaction, job satisfaction and wage. Panel a shows that there are some differences in life satisfaction for those who found a new job. It seems that people who experienced a drop in happiness upon entering unemployment are more likely to be less satisfied with their lives once re-employed. This points to incomplete habituation, where previous unemployment experiences have permanent negative effects on individual well-being (e.g. Clark et al. (2001); Lucas et al. (2004); Clark, 2006; Clark et al. (2008)). Panel b shows that, in general, once in a new job people are more likely to rate this new job better than their previous job, but this is unrelated to the experienced change in life satisfaction at the time of becoming unemployed. From Panel c it appears that people who experienced a drop in happiness when entering unemployment are equally likely to obtain a wage increase after re-employment as people who did not experience such a drop in happiness.

To investigate the effect of the drop in life satisfaction when becoming unemployed on the post-unemployment life satisfaction and job quality we estimate linear probability models. Table 6 presents parameter estimates explaining the probability that there is a decrease in life satisfaction, job satisfaction or wage compared to the pre-unemployment situation. These parameter estimates confirm that there are no effects on post unemployment job quality, but that a drop in life satisfaction upon becoming unemployed does have permanent effects on life satisfaction later in life, even after re-employment.

The finding that post-unemployment job quality is unaffected by the drop in happiness is in line with the finding that the drop in happiness does not influence the job finding rate. Apparently, the drop in happiness has no effect on labor market behavior.

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6 Conclusions

When workers become unemployed on average their happiness drops substantially. This drop in happiness goes beyond the loss of income that most individuals experience when they become unemployed. This is a common finding in many studies. Another common finding in the literature is that unemployed find a job more quickly once they are stimulated to do so either through labor market activation programs or through the threat or imposition of benefit sanctions.

These two findings are puzzling. If unemployed experience a drop in happiness why are activation programs still needed to bring the unemployed back to work more quickly? In this paper we address this puzzle. One important finding of our paper is that there is no drop in happiness across the board but there is substantial variation in the change in life satisfaction across individuals. In fact, half of the unemployed do not become unhappy while in unemployment; this mostly concerns people who were unhappy with their job, people who have sufficient alternative household income sources, or those who had a previous unemployment spell.

The fact that not for every unemployed worker there is a drop in happiness explains why at least some workers would need to be activated. However, our findings go beyond that. We find that even workers who experience a substantial drop in happiness have no higher job finding rate. Apparently unhappiness does not trigger a more active search for a job or the use of a lower reservation wage. This finding is confirmed when studying the effects of the drop in happiness on the quality of the post-unemployment job. Neither the post-unemployment wage nor the post-unemployment job quality is affected by the drop in happiness. Apparently, the drop in happiness when becoming unemployed does not affect labor market behavior of unemployed workers. We do however find a scarring effect. For unemployed who experienced a drop in life satisfaction finding a job does not lead to full recovery of life satisfaction.

How can we interpret our findings? Why does the drop in happiness not provide sufficient incentives to unemployed workers to find a job more quickly? Perhaps it is just a matter of how unemployed balance cost and benefits of providing additional effort. Della Vigna and Paserman (2005) and Paserman (2008) stress the importance of impatience and hyperbolic discounting. If unemployed are impatient they assign a lower value to future benefits of job search while the costs of job search are felt immediately. In addition to this

they may have hyperbolic time preferences which implies that they are present biased in the sense that they discount highly in the short run while in the long run they discount less. Both phenomena might explain why unemployed workers exert less effort in job search even though they became less happy. Van der Klaauw and Van Ours (2011) find that for the same reason benefit sanctions of which the "pain" is felt immediately may be more effective in bringing unemployed back to work while reemployment bonuses have less of an effect because they are a future phenomenon. Knabe et al. (2010) argue that there is a difference between life satisfaction measured as a general feeling and momentary satisfaction related to specific activities. Employed workers are more satisfied with their life and with various specific activities than unemployed workers. Nevertheless, since unemployed workers have more time to spend on activities that generate a higher satisfaction when weighting over all activities there is no difference in total life satisfaction. On the one hand, individuals are unhappy because they are unemployed, but on the other hand they are happy to spend their time in more satisfactory activities. According to Knabe et al. (2010), when considering life satisfaction individuals have a different reference framework than when they consider specific activities. Unemployed consider being employed as a desirable state but they do not value the activities which would speed up the transition to this state. Job search is among the activities which are not a very popular.

Whatever the reason may be, our paper clearly shows that even unemployed workers who became unhappy when losing their job do not exert additional effort to find a job quickly. Unhappiness does not stimulate job finding. In this respect there is no contradiction between unemployed being unhappy and the need for activation policies to stimulate unemployed to find a job more quickly.

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Table 1: Parameter estimates life satisfaction

	Males	Females
Unemployed (dummy; 1=yes)	$-1.06\,(20.1){**}$	$-0.84\,(14.9){**}$
Married (dummy; 1=yes)	$0.10\,(1.0)$	$-0.13\,(1.3)$
Kids (dummy; 1=yes)	$0.03\,(0.4)$	$-0.01\,(0.1)$
Household income (log)	$0.61\,(8.4){**}$	$0.45\,(5.6){**}$
Year dummies	yes	yes
-Loglikelihood	5173.06	4124.87
Individuals	1636	1354
Observations	11418	8959

Note: The dependent variable is self-reported life satisfaction, which is estimated in a fixed effects ordered logit model. Coefficients for year dummies are not presented. Absolute t-statistics in parentheses; a ** (*) indicates that the coefficient is different from zero at a 5% (10%) level of significance.

Table 2: Parameter estimates for life satisfaction among unemployed workers

	Males			Females		
	Employed	Unemployed	Change	Employed	Unemployed	Change
A. Baseline model						
Job satisfaction (t-1)	0.37 (16.8)**	0.15 (7.7)**	−0.12 (6.3)**	0.29 (13.5)**	0.12 (6.2)**	−0.12 (5.8)**
Age 25-34	−0.31 (1.8)*	−0.09 (0.5)	−0.01 (0.1)	−0.22 (1.1)	−0.00 (0.0)	0.13 (0.6)
Age 35-44	−0.91 (4.9)**	−0.46 (2.5)**	0.06 (0.7)	−0.65 (3.1)**	−0.57 (2.7)**	0.05 (0.3)
Age 45-54	−1.11 (5.6)**	−0.67 (3.4)**	0.03 (0.9)	−0.68 (3.3)**	−0.72 (3.5)**	−0.18 (0.9)
Married	0.43 (3.8)**	0.11 (1.0)	−0.16 (1.4)	0.14 (1.2)	0.16 (1.4)	0.01 (0.1)
Kids	−0.08 (0.8)	−0.12 (1.1)	−0.04 (0.3)	−0.09 (0.9)	−0.01 (0.1)	0.03 (0.3)
UI entitled		−0.03 (0.3)	−0.11 (1.1)		−0.14 (1.3)	−0.06 (0.6)
H.h. income (log)	0.78 (7.0)**	0.70 (7.8)**		0.70 (6.0)**	0.74 (7.1)**	
Δ h.h. income (log)			0.51 (4.1)**			0.50 (3.9)**
Educational qual.	yes	yes	yes	yes	yes	yes
Vocational qual.	yes	yes	yes	yes	yes	yes
Year dummies	yes	yes	yes	yes	yes	yes
B. Extended model						
Job satisfaction (t-1)	0.39 (15.8)**	0.13 (5.8)**	−0.16 (7.0)**	0.30 (12.7)**	0.12 (5.3)**	−0.13 (5.3)**
H.h. income (log)	0.67 (5.5)**	0.65 (6.1)**		0.76 (5.7)**	0.79 (6.5)**	
Δ h.h. income (log)			0.49 (4.0)**			0.61 (4.0)**
Difficulty to find job						
- Extremely difficult		−0.68 (4.4)**	−0.28 (1.7)*		−0.16 (1.1)	0.09 (0.6)
- Easy		0.75 (4.1)**	0.64 (3.5)**		0.99 (4.0)**	0.68 (2.7)**
Repeated U (1=yes)	−0.42 (3.8)**	0.00 (0.0)	0.34 (3.0)**	−0.09 (0.7)	0.13 (1.0)	0.04 (0.3)
Firm closure (1=yes)	−0.14 (0.9)	−0.23 (1.5)	−0.14 (0.8)	−0.07 (0.1)	−0.04 (0.3)	−0.08 (0.5)
Educational qual.	yes	yes	yes	yes	yes	yes
Vocational qual.	yes	yes	yes	yes	yes	yes
Year dummies	yes	yes	yes	yes	yes	yes

Note: Samples of 1636 males and 1354 females; Ordered Logit model; Repeated U refers to a dummy for having a repeated unemployment spell (yes=1). The parameter estimates for educational (4 dummies) and vocational attainment (3 dummies), year of entrance (12 dummies), and the auxiliary parameters are not reported; absolute *t*-statistics in parentheses; a ** (*) indicates that the coefficient is different from zero at a 5% (10%) level of significance. Job loss refers to job loss due to firm closure.

Table 3: Parameter estimates job finding probability

	Males		Females	
	Probit	Probit	Probit	Probit
	Job (one year later)	Δ ls< 0	Job (one year later)	Δ ls< 0
A.				
Age 25-34	-0.17 (1.4)	0.12 (0.9)	-0.26 (1.8)$*$	-0.05 (0.3)
Age 35-44	-0.42 (3.3)$**$	0.01 (0.1)	-0.31 (2.1)$**$	-0.09 (0.6)
Age 45-54	-0.73 (5.2)$**$	0.02 (0.1)	-0.48 (3.3)$**$	0.04 (0.3)
Married	0.23 (2.8)$**$	0.11 (1.4)	-0.09 (1.2)	-0.04 (0.5)
Kids	-0.03 (0.4)	0.03 (0.3)	0.04 (0.5)	0.05 (0.6)
UI entitled	-0.05 (0.7)	0.05 (0.7)	0.06 (0.7)	0.07 (0.9)
Δ ls	0.03 (1.1)	–	0.02 (0.9)	–
ρ	0.10 (1.6)		0.11 (1.7)$*$	
-Loglikelihood	2188.8		1805.2	
B.				
Difficulty to find job				
- Very difficult	-0.63 (6.0)$**$	0.08 (0.8)	-0.11 (1.1)	-0.01 (0.1)
- Easy	0.27 (2.3)$**$	-0.26 (2.3)$**$	0.56 (3.4)$**$	-0.21 (1.3)
Δ ls	0.01 (0.3)	–	0.04 (1.4)	–
ρ	0.09 (1.3)		0.12 (1.7)$*$	
-Loglikelihood	2015.5		1574.8	

Note: Panel A: Samples of 1636 males and 1354 females; the parameter estimates for year of entrance dummies (21), educational and vocational attainment, and the constants are not reported. Panel B: Samples of 1636 males and 1354 females; the parameter estimates for age, marital status, kids, UI entitlement, year of entrance dummies (21), educational and vocational attainment, and the constants are not reported. Absolute t-statistics in parentheses; a ** (*) indicates that the coefficient is different from zero at a 5% (10%) level of significance.

Table 4: Parameter estimates job finding rate

	Males	Females
A. Baseline		
Δ ls < 0	0.08 (0.9)	0.03 (0.2)
Age 25-34	-0.31 (2.0)$**$	-0.96 (3.6)$**$
Age 35-44	-0.77 (4.3)$**$	-1.07 (3.9)$**$
Age 45-54	-1.38 (6.2)$**$	-1.49 (5.5)$**$
Household income	0.27 (3.0)$**$	0.37 (2.9)$**$
Married	0.25 (2.2)$**$	-0.40 (2.7)$**$
Kids	-0.06 (0.6)	-0.08 (0.8)
UI entitled	0.27 (2.6)$**$	0.27 (2.0)$**$
α_1	-0.22 (1.0)	-0.74 (3.8)$**$
$u_2 - u_1$	-1.86 (10.0)$**$	-2.46 (10.3)$**$
-Loglikelihood	7326.4	5865.5
B. Including difficulty to find job		
Δ ls < 0	-0.08 (0.9)	0.06 (0.5)
Very difficult to find job	-0.99 (5.3)$**$	-0.46 (2.9)$**$
Easy to find job	0.48 (3.8)$**$	1.21 (4.4)$**$
-Loglikelihood	7298.7	5850.3
C. Alternative specifications change in life satisfaction		
1. Δ ls	0.01 (0.3)	0.00 (0.0)
-Loglikelihood	7326.7	5865.6
2. Δ ls$_{capped}$	0.01 (0.3)	-0.00 (0.1)
-Loglikelihood	7326.7	5865.6
3. Δ ls < -1	-0.06 (0.7)	-0.08 (0.6)
-Loglikelihood	7326.5	5865.4
D. Including job satisfaction		
Δ ls < 0	0.06 (0.6)	0.03 (0.3)
Job satisfaction	0.02 (1.1)	0.06 (2.6)$**$
-Loglikelihood	7325.7	5862.4
E. Ignoring unobserved heterogeneity		
Δ ls < 0	0.04 (0.8)	0.15 (2.2)$**$
-Loglikelihood	7333.3	5880.8
F. Pooling - no unobserved heterogeneity		
Δ ls < 0	0.09 (2.1)$**$	
Female	-0.43 (9.3)$**$	
-Loglikelihood	13243.0	
Observations	1636	1354

Note: Results are from a mixed proportional hazards model; LSU–LSE < 0 is a dummy for having experienced a reduction in happiness upon entering unemployment; the parameter estimates for educational and vocational attainment (5 dummies), year of entrance (12 dummies), duration dependence (4 parameters) and the constants are not reported; absolute t-statistics in parentheses; a $**$ ($*$) indicates that the coefficient is different from zero at a 5% (10%) level of significance.

Table 5: Quality of post-unemployment jobs

	Δ ls			Δ ls		
	< 0	≥ 0	Total	< 0	≥ 0	Total
A. Life satisfaction						
Δ LSE < 0	34	14	25	28	8	18
Δ LSE ≥ 0	31	49	39	27	41	34
Still unemployed	35	37	36	45	50	48
Total	100	100	100	100	100	100
B. Job satisfaction						
Δ JS < 0	23	21	22	19	15	17
Δ JS ≥ 0	42	42	42	35	34	35
Still unemployed	35	37	36	46	51	48
Total	100	100	100	100	100	100
C. Wages						
Δ wage < 0	35	32	34	28	25	26
Δ wage ≥ 0	26	27	26	25	24	25
Still unemployed	39	41	40	47	51	49
Total	100	100	100	100	100	100
Observations	882	754	1636	679	675	1354

Note: Still unemployed also include missing observations on Δ LSE, Δ JS or Δ wage

Table 6: Parameter estimates linear probability models

	Probability of decrease in		
	Life satisfaction	Job satisfaction	Hourly Wages
A. Males			
Δ ls < 0	0.29 (10.2)**	−0.02 (0.6)	−0.02 (0.7)
Age 25-34	−0.01 (0.1)	0.02 (0.4)	−0.00 (0.0)
Age 35-44	−0.05 (0.9)	0.06 (0.9)	0.12 (1.9)*
Age 45-54	−0.12 (1.9)*	0.03 (0.4)	0.09 (1.4)
Household income	0.06 (1.8)*	0.03 (0.7)	0.09 (2.4)**
Married	0.08 (2.1)**	−0.03 (0.7)	0.00 (0.1)
Kids	−0.04 (1.2)	−0.00 (0.1)	−0.06 (1.7)*
UI entitled	−0.03 (0.9)	−0.03 (0.8)	0.02 (0.6)
R²	0.14	0.03	0.05
Observations	1050	1047	996
B. Females			
Δ ls < 0	0.34 (10.0)**	−0.03 (0.9)	0.00 (0.0)
Age 25-34	0.03 (0.5)	−0.01 (0.1)	0.13 (1.7)*
Age 35-44	0.09 (1.2)	0.08 (1.1)	0.11 (1.4)
Age 45-54	0.01 (0.2)	0.12 (1.6)	0.20 (2.5)**
Household income	0.03 (0.6)	0.10 (2.4)**	0.16 (3.4)**
Married	0.01 (0.3)	−0.08 (1.9)*	−0.03 (0.5)
Kids	−0.05 (1.4)	0.04 (1.0)	0.00 (0.0)
UI entitled	0.03 (0.9)	0.01 (0.3)	0.03 (0.6)
R²	0.12	0.04	0.06
Observations	706	703	677

Note: see footnote Table 4.

Figure 1: Distribution life satisfaction of unemployed workers; when employed and unemployed

a. Males

b. Females
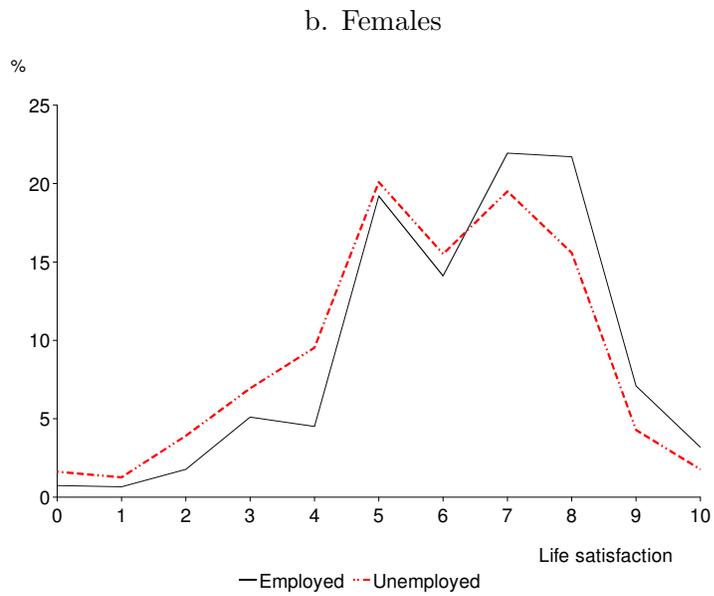
Figure 2: Distribution of the drop in life satisfaction upon entering un-employment
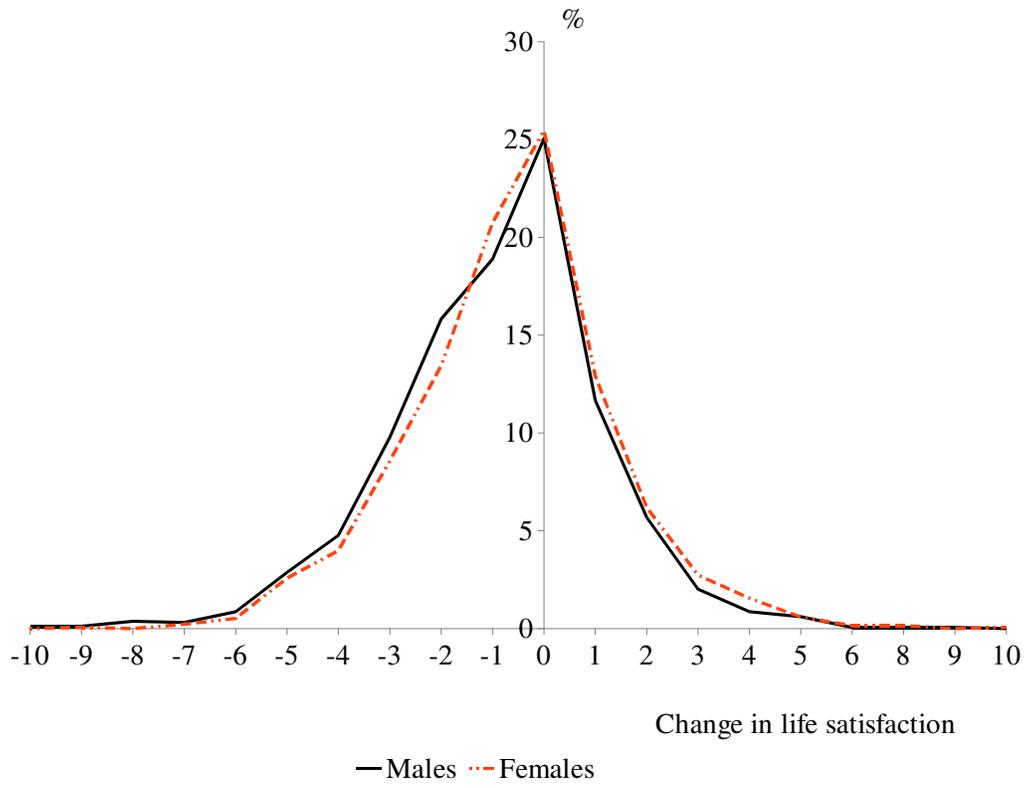
Figure 3: Probability of having work one survey later
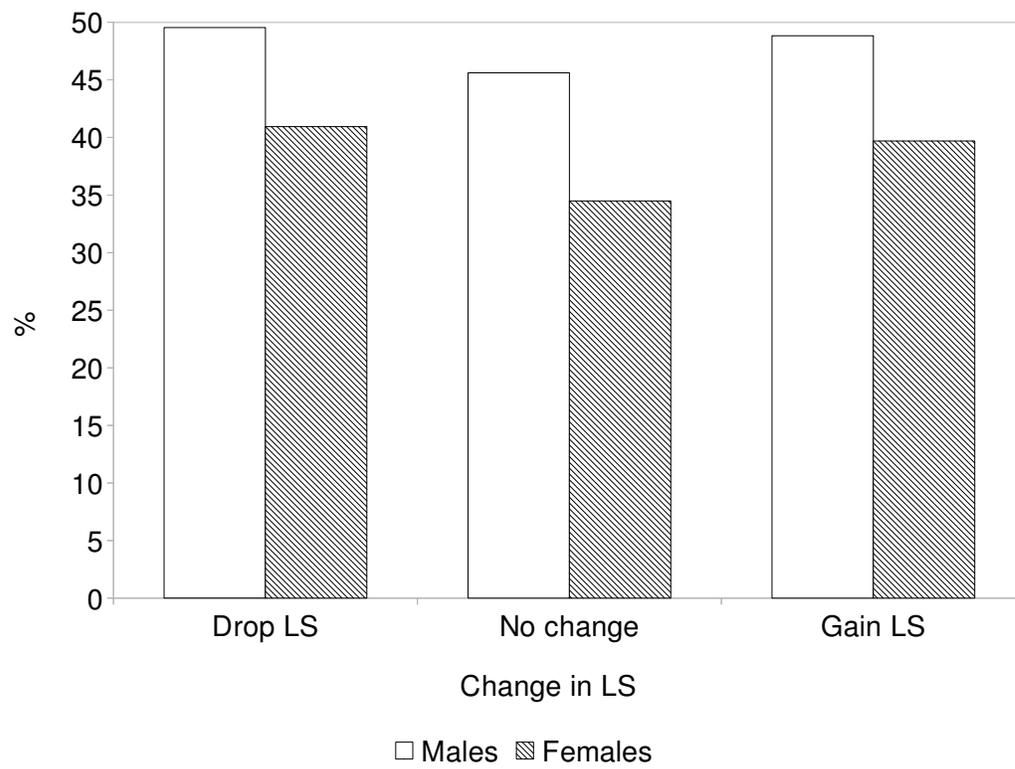
Appendix: Details about the GSOEP data

A1. Unemployment duration

When someone is observed to transit from employment in the first year to unemployment in the following year, the start and end date of the unemployment spell is obtained from the calendar information, which contains retrospective occupational information on a monthly basis. We can distinguish 8 different types of unemployment spells, for which we calculate the unemployment duration follows:

1. For those who have a job one interview later $(t+1)$ we take the unemployment duration as the difference between the interview date at which the individual was first observed in unemployment (t) and the actual end date of the unemployment spell;

2. For those who left unemployment after having found a job, but lost this job again (and are now inactive) before the next interview date $(t+1)$, we take the unemployment duration as the difference between the interview date at which the individual was first observed in unemployment (t) and the actual end date of the unemployment spell;

3. For those who left unemployment to become inactive until the next interview date $(t+1)$ and are missing the year after $(t+2)$, we take the unemployment duration as the difference between the interview date at which the individual was first observed in unemployment (t) and the interview date one year later $(t+1)$. This is a censored spell since we do not observe a re-entry to employment;

4. For those who are still in unemployment two years later $(t+2)$, we take the unemployment duration as the difference between the interview date at which the individual was first observed in unemployment (t) and the interview date two years later $(t+2)$. This is a censored spell;

5. For those who are still unemployed one year later (or otherwise inactive) but found a job two years later $(t+2)$, we take the unemployment duration as the difference between the interview date at which the individual was first observed in unemployment (t) and the actual end date of the unemployment spell;

6. For those who are still unemployed one year later and inactive the year after $(t+2)$ but left unemployment for a job (between $t+1$ and $t+2$), we take the unemployment duration as the difference between the interview date at which the individual was first observed in unemployment (t) and the actual end date of the unemployment spell;

7. For those who are still unemployed one year later and inactive the year after $(t+2)$, we take the unemployment duration as the difference between the interview date at which the individual was first observed in unemployment (t) and the interview date two years later $(t+2)$;

8. For those who are still unemployed one year later and missing the year after ($t+2$), we take the unemployment duration as the difference between the interview date at which the individual was first observed in unemployment (t) and the interview date one year later ($t+1$).

A2. Means of variables

Table A1: Means of variables

	Mean	Std. Dev.	Min	Max	N
a. Males					
Unemployment duration (months)	15.9	10.0	0	39	1396
Year	2000.2	3.7	1994	2006	1636
Life satisfaction while employed (t-1)	6.4	1.8	0	10	1636
Life satisfaction while unemployed (t)	5.5	2.1	0	10	1636
Life satisfaction while re-employed (t+1)	6.4	1.7	0	10	790
Life satisfaction while still unemployed (t+1)	5.3	2.0	0	10	844
Job satisfaction (t-1)	6.3	2.3	0	10	1636
New job one year later (t+1) (0 = no, 1 = yes)	0.8	0.7	0	2	1636
Age 19-24	0.1	0.3	0	1	1636
Age 25 - 34	0.3	0.5	0	1	1636
Age 35 - 44	0.3	0.5	0	1	1636
Age 45 - 54	0.3	0.4	0	1	1636
Married (0 = no, 1 = yes)	0.6	0.5	0	1	1636
Kids	0.5	0.5	0	1	1636
Educational attainment	1.6	0.8	0	3	1636
Vocational attainment	1.0	0.5	0	2	1636
UI entitled (0 = no, 1 = yes)	0.5	0.5	0	1	1636
Monthly net household income (2005 euros)	1848.5	972.7	29.7	13000.0	1636
Gross hourly wage (t-1) (2005 euros)	10.7	6.0	0	109.5	1568
Expected difficulty of finding job	1.959398	0.4826496	1	3	1527
b. Females					
Unemployment duration (months)	18.9	9.9	0	42	1170
Year	1999.9	3.8	1994	2006	1354
Life satisfaction while employed (t-1)	6.4	1.9	0	10	1354
Life satisfaction while unemployed (t)	5.8	2.0	0	10	1354
Life satisfaction while re-employed (t+1)	6.6	1.8	0	10	527
Life satisfaction while still unemployed (t+1)	5.8	2.1	0	10	822
Job satisfaction (t-1)	6.1	2.5	0	10	1354
New job one year later (t+1) (0 = no, 1 = yes)	0.6	0.7	0	2	1354
Age 19-24	0.1	0.3	0	1	1354
Age 25 - 34	0.3	0.5	0	1	1354
Age 35 - 44	0.3	0.5	0	1	1354
Age 45 - 54	0.3	0.5	0	1	1354
Married (0 = no, 1 = yes)	0.6	0.5	0	1	1354
Kids	0.5	0.5	0	1	1354
Educational attainment	1.8	0.8	0	3	1354
Vocational attainment	1.0	0.5	0	2	1354
UI entitled (0 = no, 1 = yes)	0.7	0.4	0	1	1354
Monthly net household income (2005 euros)	1959.0	1052.2	289.4	11157.6	1354
Gross hourly wage (t-1) (2005 euros)	9.3	5.3	0	98.4	1317
Expected difficulty of finding job	1.879599	0.4670411	1	3	1196