

# Don't Worry, Be Happy? Happiness and Re-Employment\*

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## Abstract

An individual's well-being can be considered the ultimate goal in life. In the economic literature it is primarily treated as an outcome variable. But is happiness also a driver of behavior and life's outcomes? Rich survey data of recent entrants into unemployment in Germany show that there exists a significant inverted u-shaped effect of residual happiness on an unemployed individual's future re-employment probability and re-entry wage. Residual life satisfaction displays higher (or lower) satisfaction levels than a number of socioeconomic and demographic characteristics would predict. Moreover, it is found that male individuals are driving the result and the concept of locus of control is able to explain part of the effect. If re-employment is considered the desirable outcome for the unemployed individual and the society, the shape of the effect suggests there to be an optimal level of happiness, which is not necessarily the highest.

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# 1 Introduction

Analyzing individual's happiness or life satisfaction has become increasingly important in economic research, starting with the pioneering work Easterlin (1974) on income, GDP per capita and happiness.<sup>1</sup> A person's subjective well-being displays a wider empirical concept of an individual's utility by incorporating both, income and non-income determinants. The Stiglitz report on the measurement of economic performance and social progress also points out that "*emphasising well-being is important because there appears to be an increasing gap between the information contained in aggregate GDP data and what counts for common people's well-being*" (Stiglitz et al., 2009, p.12). Subjective well-being and detecting its determinants can be considered the main goal in most people's lives (for a detailed overview, see e.g., Frey and Stutzer, 2002). However, the direction of this paper is a different one – namely what stands behind considering happiness as a goal. Is happiness also a driver of behavior and life's outcomes? There is no doubt that people do certain things to become happier or stay as happy, but do happier people also do different things than less happy people *because* they have different well-being levels?

This paper is set in the field of labor economics, more precisely unemployment dynamics. The unemployment-happiness literature to date has been rather concerned with the effect of general and individual unemployment on happiness (e.g., Clark and Oswald, 1994; Winkelmann and Winkelmann, 1995, 1998; Clark et al., 2001; Di Tella et al., 2001; Kassenboehmer and Haisken-DeNew, 2009). There is a broad consensus among researchers that unemployment leads to a reduction of life satisfaction. Since there seems to be high psychological distress related to the state of unemployment, it is constantly an important topic for public welfare and policies. On that note it is obviously important to understand what brings unemployed people back into employment. In particular, it is interesting to ask whether the unemployment-happiness relationship is exclusively a one-way street and whether this can contribute to the underlying discussion about voluntary and involuntary unemployment. The main questions of this paper are whether individual happiness has an influence on an unemployed individual's re-employment probability and if re-employed, on re-entry wages. Rich survey data of recent entrants into unemployment in Germany are used

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<sup>1</sup>The terms happiness, subjective well-being and life satisfaction are used interchangeably in this paper as most economists do so, see, e.g. Graham et al. (2004).

for the empirical analysis. To the best of my knowledge, this is the first study looking at these specific questions with such a valuable dataset. The contributions of this paper are first, a deeper understanding about what life satisfaction might influence and possibilities on the mechanisms and second, new insights about determinants of re-employment and re-entry wages. Since there seems to be no adaptation in life satisfaction with respect to unemployment compared to other life events (Clark et al., 2008), the relationship with re-employment appears to be of particular importance.

What does life satisfaction stand for when regarding it as a determinant? It can probably not be seen as personality trait itself, but a factor correlated with personality such as optimism, self-esteem and motivation, which likely influences life's choices and outcomes. This can happen from the individual side through the individual's own behavior as well as through a "charisma" effect, where other people react differently to happier people. Obviously there is an endogeneity issue with happiness. For an actual causal effect of happiness, one would need a kind of random assignment, which I do not have with the observational survey data I use. A problem of the endogeneity arises if an unobserved variable influences life satisfaction *and* future employment probability, since in this case one would falsely interpret an effect from life satisfaction as causal even though it is the other factor actually determining the pattern in the relationship. However, I am of course trying to minimize the possible worries by using lagged life satisfaction as well as a sample where individuals are actually searching for job and have not found a new one yet. In particular, the empirical strategy is based on using "residual happiness" rather than absolute happiness as explanatory variable, much in the spirit of Graham et al. (2004). The idea is to investigate whether people who had higher (or lower) happiness levels than a number of socioeconomic and demographic characteristics would predict, have different labor market outcomes one year later. This residual element of happiness is interpreted as some sort of underlying inner disposition or cognitive bias (e.g., Cummins and Nistico, 2002) and therefore psychological differences between the respondents. Moreover, by definition, it is unrelated to individual characteristics. Since I use rich data on unemployed individuals, much is known about their search behavior and other variables compared to other datasets. Moreover, the respondents all have been unemployed for the same amount of time, so their happiness levels are not influenced by a different unemployment duration.

The main results are that residual happiness has a positive statisti-

cally significant effect on the individual's re-employment probability, which, however, has a nonlinear – concave – shape. At the highest values of residual happiness, the re-employment probability decreases. The relationship between residual happiness and re-entry hourly wages is similar and even more statistically robust. Residual happiness and job search intensity are negatively related, which displays a sort of puzzle since this rather important possible mechanism in this relationship actually works in the reverse direction. However, there are rather strong gender differences with respect to the re-employment relationship, where men are driving the result and the concept of locus of control (the subjective belief about future outcomes being determined by the own actions or external factors) is able to explain part of the effect.

There are still only few papers which use happiness as a determinant rather than an outcome. These include studies that find a weak effect from happiness on growth (Kenny, 1999). Happier people are found to save more, spend less and have a lower marginal propensity to consume (Güven, 2012). Goudie et al. (2012) show that happiness is a driver of risk-avoiding behavior. There are two papers looking at residual happiness. Güven (2011) finds an inverted u-shaped effect of residual happiness on social capital and Graham et al. (2004) find individuals with higher residual happiness to make more money and being in better health 5 years later. Psychologists and economists have looked at positive affect as an explanatory variable, where the findings suggest that positive affect engenders success (Lyubomirsky et al., 2005) and significantly reduces time preference over money (Ifcher and Zarghamee, 2011). Studies connecting happiness and labor outcomes include Marks and Fleming (1999), whose findings suggest that those with higher lagged subjective well-being levels are more likely to remain employed and more likely to be re-employed. Clark et al. (2008) find that future unemployment reduces current well-being which can be interpreted as a lead or anticipation effect. Looking at the drop in well-being when becoming unemployed, Clark (2003) finds that those with a higher drop in mental well-being are less likely to remain unemployed one year later whereas Gielen and van Ours (2011) find this drop in life satisfaction does not stimulate job finding. Psychologists find that high trait positive affect leads to more success at obtaining follow-up job interviews (Burger and Caldwell, 2000) and that higher well-being at age 18 predicting higher levels of occupational attainment (Roberts et al., 2003). Overall, the findings in the related literature suggest that higher happiness leads to “better”

outcomes.

The remainder of this paper is organized as follows. Section 2 introduces some theoretical considerations. Section 3 describes the data and sample. Section 4 shows the results of the empirical analysis and Section 5 concludes.

## 2 Theoretical Considerations

The standard model of job search (McCall, 1970; Mortensen, 1970) suggests that an individual's re-employment probability depends on the probability of receiving a job offer as well as accepting it, which is usually displayed by the individual's reservation wage. Factors determining the job offer probability include the individual's job search effort, education and experience whereas the probability of accepting a job offer depends on the expected wage distribution, possible search costs, the job arrival rate and unemployment benefits. As Lynch (1989) points out analyzing re-employment probabilities of young unemployed, motivation is an unobserved and omitted in the empirical analysis which might bias the estimates.

This is, from a theoretical point of view, where considerations with respect to the unemployed individual's happiness come into play (see e.g., Verkley and Stolk, 1989). This possible determinant of employability, which has been mostly overlooked in the literature so far, may be an important driver of the probability to be hired itself and of job search. An exception are Hermalin and Isen (2008), who incorporate current emotional state into an economic modelling and decision making framework, which suggests that employers prefer workers with initial happiness levels greater than some cutoff value or try to induce this happiness level by, e.g., giving the employee a signing bonus. This direct "charisma" channel displays a sort of unobservable characteristic for the hiring probability besides qualification, experience and possibly other factors. The assumption is that happier individuals are more likely to be hired because of their "charisma", so the employer sees something more valuable in the happier job candidate. These can be factors such as teamwork abilities, creativity and sympathy for the candidate. This means, the job offer probability would theoretically increase with happiness. Besides this direct impact, there are several indirect channels that happiness can work through affecting re-employment. The most obvious one is probably job search effort. However, the direction of this effect is the-

oretically ambiguous. Unemployed individuals can be very unhappy with the situation and try their best to get out of it, which then increases their job search intensity and therefore their re-employment probability. On the other hand happier people might be more resilient and more motivated to search, so that in this case higher happiness increases the prospective employment probability through higher job search effort. Other channels are, e.g., health and social contacts which are both positively related to happiness and re-employment.

Since the other outcome in the empirical analysis is the wage of the new job, given the individual is re-employed, some considerations in this regard are also made. First, there may be an indirect channel through education, such that happier people being more educated, having higher reservation wages and in turn earning higher re-entry wages. Second, there may be rather direct associations, where the following is similar to the one discussed for re-employment probabilities: The employers may see higher potential or prospective productivity in the happier job candidates so which results in higher wages offers. On the other side are the job candidates, where happier candidates may exert greater bargaining power or abilities through higher self-esteem. Likewise, re-entry wages would increase with happiness. Therefore, theoretically it is assumed that the happier the unemployed individual, the higher is his or her wage when re-entering the labor market.

### 3 Data and Sample

I use data from the *IZA Evaluation Dataset S* (Caliendo et al., 2011). This is a survey of almost 18,000 individuals who entered unemployment between June 2007 and May 2008.<sup>2</sup> Each month one cohort of respondents was interviewed. The analysis is based on the first wave of the survey, which took place on average about two months after unemployment entry and the second wave, which took place about one year after this respective unemployment entry.<sup>3</sup> One advantage of the data is the specific focus on entrants into unemployment. The *IZA Evaluation Dataset* is thus very appropriate

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<sup>2</sup>There is also an administrative part (*IZA Evaluation Dataset A*) of the complete dataset, which is not used in this paper.

<sup>3</sup>The survey consists in total of three rounds of interviews. Respondents are interviewed again three years after unemployment entry.

for studying the processes of job search and labor market reintegration. Similar household surveys are generally designed to be representative of the whole population (e.g. the German Socio-Economic Panel Study, SOEP), which has an important drawback when studying unemployed individuals because sample sizes decrease substantially.

The data address a large variety of topics such as the individual's detailed search behavior (number of applications, search channels, reservation wages etc.) and life satisfaction. The exact wording of the question is "How satisfied are you with your life as a whole these days?" and is measured on a 0-10 scale, where 10 represents complete satisfaction. Self-reported life satisfaction has shown to be valid and consistent measure of subjective well-being in the literature. Self-reports and other measures such as interview ratings, peer reports and the average daily ratio of pleasant to unpleasant moods show a strong convergence (e.g., Diener and Lucas, 2000).

The sample is selected with respect to the following characteristics. All individuals in the first wave are unemployed. So I exclude those who are already re-employed at the time of the first interview, since it takes place on average about 2 months after unemployment entry. This is the case for about 25 % of the individuals in the first wave. Respondents who claim to not have searched for a job since unemployment entry are excluded. Most of these individuals had already found a job. Moreover, I exclude those individuals who claim to certainly have a prospective job. Thereby I try to minimize the potential bias arising from already having a job or knowledge about a future job which causes individual happiness and future re-employment probability to increase simultaneously. The selected sample is a balanced panel of the first and second wave. After excluding observations with missing information, I am left with a sample of 2,534 individuals per wave.

Table A1 displays summary statistics of the main variables. All this information stems from the first interview, except for the employment status in the second wave. The mean of the unemployed's life satisfaction is at value 6.1, which is slightly higher than results from other studies using GSOEP data, a representative German panel dataset, where the unemployed's life satisfaction lies rather below 6 (e.g., Winkelmann and Winkelmann, 1998; Gielen and van Ours, 2011). Almost 60 percent of the sample are employed one year after unemployment entry. The average age is 38 years and slightly less than half the sample are men. About 17 percent of the sample are either first or second generation migrants and about 30 percent live in East Germany. 51 percent are married and most respondents have an intermedi-

ate school and vocational degree. Every fifth respondent has a degree from a technical college or university. The average past hourly wage is 7.5 euros and the average duration of the last job before unemployment entry was 52.5 months. On average, the individuals have written 15 applications since unemployment entry and use about five search channels (out of 10 possibilities including other search channel). 64 percent of the sample look for a full-time position as opposed to looking for a part-time position or either of the two. The most common reason for terminating the last job is layoff with about 44 percent of the sample. The two other prevalent reasons are the end of a temporary contract and quitting the job.

## 4 Empirical Analysis

### 4.1 Residual Happiness

To calculate residual or unexplained happiness, I first estimate a life satisfaction regression for the first wave with several determinants of happiness. The life satisfaction looks as follows:

$$Life\ Satisfaction_i = \beta X_i + \epsilon_i, \quad (1)$$

where  $X_i$  are individual, household and regional characteristics and  $\epsilon_i$  are the residuals. Demographic and socioeconomic control variables are included as well as wage and duration information about the last job, the amount of unemployment benefits the person is receiving and the employment status of the spouse or partner. Moreover, the federal state unemployment rate, the reason for termination of the last job and the living area's social class are controlled for. Geographical dummies for German federal states, interview cohorts and the amount of time between unemployment entry and interview are added as additional control variables.

In a second step, the residual  $\epsilon$  for each individual is predicted. By definition, the residuals are uncorrelated with the individual characteristics in the first wave and as such present a measure for unexplained happiness laying above or below what would be expected by these observable individual characteristics. This variable may be interpreted as a proxy for inner individual disposition or cognitive bias, but also contains some noise. The living area's social class (number of households in living area belonging to upper, upper-middle, middle, lower-middle, lower social class) serves as ex-



clusion restriction, which is included in the first regression, but not in the main regression of interest for identification reasons. This variable determines life satisfaction, but re-employment probability not directly. Since most of the variables in this dataset are somehow related to re-employment, this variable seemed as a reasonable fit.

Table A2 shows the results of the life satisfaction regression, which are generally similar to standard happiness equations with a representative sample of the society or the working population. In this case the sample consists only of unemployed individuals, where one advantage is that they all have been unemployed for a similar amount of time, which is usually not the case in other datasets. Men are significantly less happy and happiness is u-shaped over the life cycle. Having a disability, being married to a spouse who does not have a full-time or part-time job or being single, all have a statistically significant negative effect on life satisfaction. Having a higher schooling degree is mostly associated with higher happiness and also having a spouse who has a full-time position. Second generation migrants are significantly less happy than natives and the past hourly wage affects happiness positively. Compared to having had a job for under a year, having had a job for up to 10 years or also more has a significant positive effect on the happiness on newly unemployed individuals. The reason for the end of the last job does not play an important role in this estimation.<sup>4</sup> Finally, living in an area with a higher number of households belonging to the upper social class significantly raises life satisfaction, whereas a higher number of upper-middle households decreases it significantly. A larger number of middle class, lower-middle class and lower class households does not influence life satisfaction.

Figure A1 shows a graph plotting the relationship between the residuals of the aforementioned regression and the employment probability in the second wave. There seems to be a non-linear connection. The larger fraction of the graph is increasing until slightly above the residuals at zero and then it experiences a sharp decrease at the higher residuals. The lowest re-employment probability is found for the individuals with the highest unexplained happiness. Basically, the graph suggests that individuals who are very unhappy or very happy, both have a lower re-employment probability than individuals in between, pointing to an inverse-u-shaped relationship.

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<sup>4</sup>The negative significant effect of taking care for relatives or others is driven only by two observations.

Possible explanations are lack of motivation, either because the person is really depressed with the situation and the driving force is missing or the person is so happy with the situation that there is no motivation to change it.

A very important channel in this regard is job search effort. Table A3 shows the distribution of the means of various job search information comparing individuals with positive and negative residuals. Moreover, a t-test between the two subsamples is conducted. From this table it becomes apparent that on average individuals with higher residual happiness are significantly more likely to be employed one year later, which reflects the largely increasing relationship between the residuals and re-employment, but neglects the sharp decrease at the highest values. The other numbers in the table suggest that happier individuals exert less job search effort. For instance, they write significantly less applications and use significantly less search channels. When it comes to the use of single search channels, there is no significant difference for most of them, except, searching via the job information system of the employment agency and sending out speculative applications. Happier individuals are less likely to use both of these channels. With respect to the number of formal, formal active and formal passive search channels, the picture remains the same. There is no difference between happy and unhappy individuals regarding the rate to try to become self-employed. However, happier individuals seem to be less likely to search for a full-time position, which could be one reason why they are searching less – the pressure may be lower.

## **4.2 Main Results**

The second step in the empirical analysis is to investigate whether residual happiness has any additional effects on the re-employment probability. Table A4 shows the main results when adding residual happiness as a regressor next to several other control variables. To detect any non-linearities, squared terms and quintile dummies are used besides full values of the residual variable. Column (1) presents linear effects, which point to a positive significant effect of increasing residual happiness on future re-employment probability. When dividing this effect up in negative and positive residuals by setting the positive or negative residuals to zero, respectively, it becomes clear that this positive effect is driven by individuals who are less happy than what would be predicted. No significant positive effect of positive residual

happiness alone can be detected. The negative sign of the negative residual variable is due to the change of the variable from the negative values into its absolute values, so that a negative sign denotes a positive effect of an increasing residual on re-employment probability. Interestingly, when adding a squared term of the positive and negative residual, the inverse u-shaped effect becomes apparent for the positive residual fraction, where having a residual of 1.633 is the turning point. This quadratic effect is not driven by outliers since there are over 500 observations with a residual of 1.633 or higher. There is no non-linear effect for individuals with negative residuals. Finally, four dummies are added in four separate regressions that indicate having a residual value higher than the first, second, third and fourth quintile of residual happiness. This demonstrates again the positive effect at the lower part of the residual distribution and the diminishing trend the higher the residuals are. Statistical significance is also given only at the two dummies at the lower spectrum. In sum, these results suggest a positive significant effect of residual life satisfaction, in particular at the lower part of the distribution, whereas the linear effect turns into a non-linear inverse u-shaped one at the higher part of the distribution. The effect at the top of the residual distribution might display voluntary unemployment. These individuals may be so happy with their life that their re-employment probability decreases.

Table A5 displays regression results for the smaller sample of individuals who found a job in the second wave. The dependent variable is the individual's logarithmic hourly wage at this job. Column (1), (2) and (3) show that there is a statistically significant positive effect of residual happiness on future hourly wages. However, as can be seen in column (4), the effect is not completely linear – the squared term of positive residual happiness is negative. Therefore similar to the probability of re-employment, the highest values of positive residual happiness lead to lower hourly wages. The turning point here is similar as before, at a residual value of 1.36. With respect to negative residual happiness and its squared term, both coefficients show a positive statistically significant effect, keeping in mind the “reversed” sign for the non-quadratic negative residual coefficient. The quintile dummies confirm the former results with positive significant effects until the fourth quintile. A negative effect at the highest quintile, however, is not apparent. Besides having a mostly positive effect on the re-employment probability, happier individuals also earn more at the new job. Since past hourly wage and education is controlled for in the regression, there must be something

the employers appreciate in or expect from the happier individuals such that they get paid higher wages. Happier individuals might also be better bargainers. The negative effect at the top could be explained by individuals with the highest residual happiness not caring about wages much, such that they do not bargain as intensely. Oishi et al. (2007) also report that the highest levels of income are not reported by the most satisfied individuals, but by the moderately satisfied individuals.

The first question that arises at this point is, why these effects arise. The next subsection makes an attempt to explain where the effect comes from.

### 4.3 Potential Mechanisms

Table A6 show the results for re-employment divided up by gender. To the best of my knowledge, differential effects for men and women have never been shown in this respect. Interestingly, the results suggest that it is the male unemployed who are driving the main results. The effects for women are not statistically significant and largely smaller than for men. The linear residual happiness coefficients are significantly different from each other. Moreover, when including both, the positive residual term and the squared positive residual term, the non-squared term coefficients are also significantly different between males and females. The difference between negative residual happiness is almost statistically significant. This pattern is interesting and perhaps unexpected, because one would assume it affects both genders, so all humans equally. Why should happiness be a driver only for unemployed males with respect to their re-employment probability? It could be that this selected sample out of the whole population displays a non-representative selection for males and females in the sense that men may still feel more attached to the labor market than women, so that not being very unhappy is more important for men. Additionally, men are on average less happy than women, so that this former difference might induce differential effects, whereas their re-employment rate is virtually the same. It would be interesting for further research whether this differential pattern also exists in other settings not connected only to unemployed individuals.<sup>5</sup> Dividing the sample by education does not lead to differential

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<sup>5</sup>Graham and Chattopadhyay (2012) look at gender differences with respect to well-being around the world. However, well-being serves as an outcome variable in their study and not as a driver.

results. Moreover, this differential pattern is not found for re-entry wages.

One advantage of the data set used for this analysis is the variety of topics covered, so that the main results can be connected to variables, which to my knowledge has not happened in this way. There are a couple of personality questions in the questionnaire and some of them refer to the locus of control. This is a concept about the subjective belief whether one life's outcomes are outside one's control and can be rather attributed to fate or luck (*external*) or whether life's outcomes depend on one's own decisions and behavior (*internal*). Individuals with an internal locus of control have been found to be associated with higher happiness (Verme, 2009; Becker et al., 2012) and external individuals associated with lower probability of full-time employment (Braakmann, 2009) and lower reservation wages (Caliendo et al., 2010), whereas internal individuals exert higher job search effort (Caliendo et al., 2010). Can the locus of control concept explain the residual life satisfaction effect by adding this personality dimension to the relationship? Table A7 displays the results when including the standardized locus of control index.<sup>6</sup> They show that the residual happiness effect can be partly explained by locus of control. All coefficients decrease at least slightly when including the standardized index of locus of control as control variable. However, the effects of only negative residual happiness as well as the inverse u-shaped effect at the high positive residual values are still significantly different from zero.

## 5 Conclusions

This study investigates the effect an individual's happiness level has on future labor market outcomes. In particular, an inflow sample into unemployment in Germany is used to calculate residual happiness, which displays higher (or lower) satisfaction levels than a number of socioeconomic and demographic characteristics would predict. The effect of this residual on future labor market outcomes is then analyzed in a second step. There is

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<sup>6</sup>Constructing the locus of control index relies heavily on Caliendo et al. (2010). Respondents are asked ten statements related to attitudes towards life and the future and are supposed to agree on a scale from 1 to 7. Caliendo et al. (2010) performed a factor analysis, which attributed certain items to the internal locus of control concept and certain others to the external one. For the full index, all items are standardized and the aggregated external ones are subtracted from the aggregated internal items. The full index is then standardized once more and enters the regression as such. A higher value refers to a more internal locus of control.

a significant inverted u-shaped effect of residual happiness on unemployed individual's future re-employment and re-entry wages. Moreover, there are rather strong gender differences with respect to the re-employment relationship, where men are driving the result and the concept of locus of control is able to explain part of the effect. This study is only representative of the unemployment population in Germany and the question of the generalization of course arises. Future research investigating gender effects could shed light upon whether significant differences between men and women exist also outside the unemployment or labor market context. Moreover, whenever possible, the connection between happiness and personality traits should be investigated in more detail to better understand the driving forces behind it.

One motivation for this study is to understand what happiness displays for humans. There is no doubt that for most people it can be considered as the ultimate goal in life. People do certain things because they perceive utility or satisfaction from them. So, happiness seems to be a goal in itself. But there is also a second goal, which goes one step further: an individual's satisfaction also makes him or her do things or not do them, which in turn leads to certain outcomes. So if there is a positive connection, happiness would lead people to make "better" choices for themselves and their lives, which hopefully for the most part translates into "better" choices for the society. Generally, there does seem to be this positive connection between happiness and future outcomes. However, this study shows that this effect is not linear, at least in this special setting with unemployed individuals. If re-employment and higher re-entry wages are considered desirable outcomes for the unemployed individual and the society, the shape of the effect suggests there to be an optimal level of happiness, which is not necessarily the highest (Frey and Stutzer, 2000). Being too happy may lead to the loss of motivation and resilience to pursue one's life in a conscious and healthy manner. In the same spirit, psychologists have found the optimal level of happiness in the domains of volunteer work and personal relationships to be the highest, whereas the optimal level for happiness for achievement outcomes such as income and education is a moderate high level (Oishi et al., 2007). They state that a slight dissatisfaction can serve as motivation to achieve more, earn more money, in other words to (self-)improve. The findings in this paper confirm this claim. Maximizing happiness may not be the goal future policy makers should consider – optimizing happiness instead seems to be the enduring and long-term ambition.

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## Appendix

Table A1: Descriptive Statistics of Main Variables

Variable	Mean	Std. Dev.
Life Satisfaction	6.144	(2.128)
Employed at Wave 2	0.588	(0.492)
Age	38.243	(9.863)
Male	0.467	(0.499)
Native	0.826	(0.379)
1st Generation Migrant	0.092	(0.289)
2nd Generation Migrant	0.082	(0.274)
Eastern Germany	0.285	(0.452)
Married	0.507	(0.5)
No formal educ. degree	0.01	(0.099)
Secondary school (9 yrs.)	0.276	(0.447)
Secondary school (10 yrs.)	0.421	(0.494)
Technical college entrance qualification (11-12 yrs.)	0.058	(0.233)
General qualification for university entrance (12-13 yrs.)	0.235	(0.424)
No formal vocational degree	0.085	(0.279)
Apprenticeship (dual system)	0.592	(0.492)
Specialized vocational school	0.14	(0.347)
University, technical college	0.183	(0.387)
Net Hourly Wage of Last Job (Euros)	7.488	(3.981)
Duration of Last Job (in Months)	52.542	(77.663)
Number of Applications Sent	15.424	(19.277)
Number of Search Channels Used	5.273	(1.616)
Search for Full-Time Job	0.643	(0.479)
Reason for Termination of Last Job:		
Quit	0.107	(0.309)
Layoff	0.44	(0.496)
Employer and Employee Agreed on Termination of Contract	0.082	(0.275)
End of Temporary Contract	0.219	(0.414)
Firm Closure	0.073	(0.26)
End of Self-Employment	0.013	(0.115)
Parental Leave	0.018	(0.132)
Care for Person in Need	0.001	(0.028)
Other Reason	0.047	(0.212)
# of Observations	2,534	

Source: IZA Evaluation Dataset S, own calculations.

Notes: All variables display characteristics from wave 1 except being employed at wave 2.

Table A2: OLS Life Satisfaction Estimation First Wave

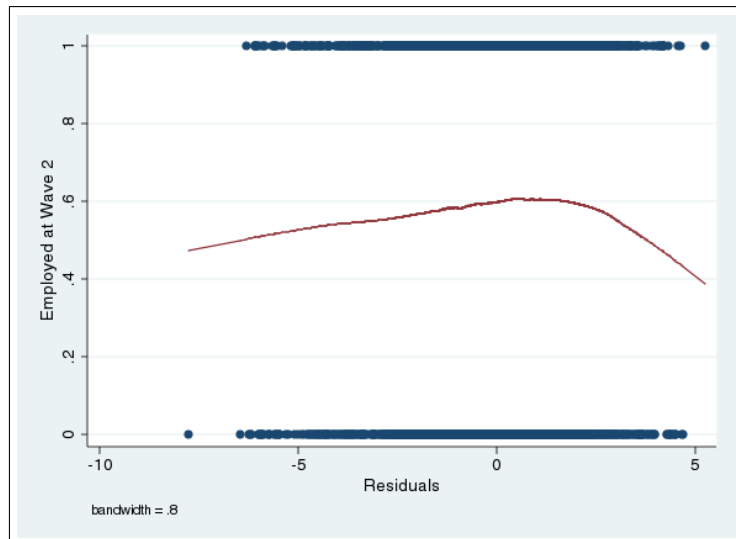
	Life Satisfaction in Wave 1	
Male	-0.212**	(0.0912)
Age	-0.0875**	(0.0379)
Age Squared	0.0899*	(0.0501)
Disabled	-0.305*	(0.170)
Married	-0.542***	(0.167)
Single	-0.540***	(0.142)
Partner	-0.286	(0.236)
Employment Status Spouse: Full-Time Employed	0.888***	(0.140)
Employment Status Spouse: Part-Time Employed	0.328	(0.230)
Employment Status Partner: Full-Time Employed	-0.0847	(0.258)
Employment Status Partner: Part-Time Employed	0.710	(0.529)
Secondary school (9 yrs.)	0.597	(0.418)
Secondary school (10 yrs.)	0.723*	(0.418)
Technical college entrance qualification (11-12 yrs.)	0.546	(0.447)
General qualification for university entrance (12-13 yrs.)	0.806*	(0.429)
Apprenticeship (dual system)	0.124	(0.156)
Specialized vocational school	0.0502	(0.186)
University, technical college	-0.117	(0.199)
Children in Household	0.208	(0.175)
Number of Children in Household	0.117	(0.0985)
1st Generation Migrant	0.0321	(0.148)
2nd Generation Migrant	-0.331**	(0.151)
Net Hourly Wage of Last Job (Euros)	0.0456***	(0.0116)
Duration of Last Job Until 5 Years	0.143	(0.0973)
Duration of Last Job Until 10 Years	0.367***	(0.137)
Duration of Last Job More than 10 Years	0.331**	(0.146)
Duration of Last Job 0 Months	-0.692*	(0.411)
Log of Unemployment Benefits	0.0189	(0.0159)
State Unemployment Rate	-0.0780	(0.212)
Quit	0.102	(0.159)
Layoff	-0.0907	(0.111)
Employer and Employee Agreed on Termination of Contract	0.216	(0.175)
Firm Closure	0.0628	(0.181)
End of Self-Employment	-0.328	(0.365)
Parental Leave	0.313	(0.332)
Care for Person in Need	-2.507*	(1.452)
Other Reason for Termination of Last Job	-0.207	(0.212)
Number of Households in Living Area Belonging to Upper Social Class	0.00120*	(0.000669)
Number of Households in Living Area Belonging to Upper-Middle Social Class	-0.000970**	(0.000432)
Number of Households in Living Area Belonging to Middle Social Class	0.000247	(0.000276)
Number of Households in Living Area Belonging to Lower-Middle Social Class	0.000143	(0.000249)
Number of Households in Living Area Belonging to Lower Social Class	-0.0000810	(0.000623)
Constant	7.758***	(1.960)
# of Observations	2,534	
$R^2$	0.114	

Source: IZA Evaluation Dataset S, own calculations. State unemployment rates are taken from the federal unemployment agency.

Notes: Standard errors in parentheses. Further control variables include dummies for German federal states, interview cohorts, time between unemployment entry and interview.

\*\*\* significant at 1%; \*\* significant at 5%; \* significant at 10%.

Figure A1: Residual Happiness and Future Re-Employment Probability



Source: IZA Evaluation Dataset S, own calculations.  
Note: Based on results from a locally weighted regression.

Table A3: Job Search Effort

	Negative Residual	Positive Residual	p-value of t-test
Employed in Second Wave	0.565 (0.496)	0.607 (0.489)	0.034
Number of Applications Sent	17.221 (22.957)	13.921 (15.393)	0.000
Number of Search Channels Used	5.377 (1.608)	5.186 (1.617)	0.003
Number of Formal Search Channels Used	4.515 (1.511)	4.342 (1.488)	0.004
Search for Self-Employment	0.002 (0.042)	0.002 (0.047)	0.803
Search for Full-Time Job	0.675 (0.469)	0.617 (0.486)	0.002
Search Channel Used:			
Newspaper Advertisement	0.881 (0.324)	0.869 (0.338)	0.347
Advertisement Posted	0.150 (0.357)	0.128 (0.335)	0.116
Job Information System	0.678 (0.468)	0.628 (0.483)	0.009
Informal Search (Friends and Relatives)	0.862 (0.345)	0.844 (0.363)	0.203
Agent of Employment Agency	0.736 (0.441)	0.717 (0.450)	0.304
Internet	0.895 (0.306)	0.888 (0.316)	0.548
Private Agent with Agency Voucher	0.098 (0.297)	0.091 (0.288)	0.571
Private Agent without Agency Voucher	0.179 (0.384)	0.159 (0.366)	0.166
Speculative Application	0.696 (0.460)	0.659 (0.474)	0.051
Other Search Channel	0.205 (0.404)	0.202 (0.402)	0.885
# of Observations	1,154	1,380	

Source: IZA Evaluation Dataset S, own calculations.

Notes: All variables display characteristics from wave 1 except being employed at wave 2.

Table A4: Main Results – Employed at the Second Interview

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Residual Happiness	0.027 (0.013)**								
Positive Residual Happiness		0.020 (0.026)							
Negative Residual Happiness			-0.053 (0.020)***						
Positive Residual Happiness Squared				0.160 (0.066)**					
Negative Residual Happiness Squared				-0.049 (0.021)**					
Negative Residual Happiness					-0.087 (0.052)*				
Negative Residual Happiness Squared					0.008 (0.012)				
> 1st Quintile of Residual Happiness						0.182*** (0.065)			
> 2nd Quintile of Residual Happiness							0.121 (0.053)**		
> 3rd Quintile of Residual Happiness								0.061 (0.053)	
> 4th Quintile of Residual Happiness									0.032 (0.066)
# of Observations	2,534	2,534	2,534	2,534	2,534	2,534	2,534	2,534	2,534
Log Likelihood	-1616.050	-1618.039	-1614.720	-1615.393	-1614.464	-1614.396	-1615.735	-1617.675	-1618.211

Source: IZA Evaluation Dataset S, own calculations. State unemployment rates are taken from the federal employment agency.

Note: Probit regressions. Parameter estimates are shown. Murphy and Topel (1985) standard errors in parentheses. Positive and negative residual happiness are variables containing the residual values while setting the negative or positive values to zero, respectively. Negative residual happiness displays the absolute values of the residual variable. Further control variables are dummies for German federal states, interview cohorts, time between unemployment entry and interview, state unemployment rate wave 1 and wave 2, reason for unemployment, male, migrant status, age and age squared, marital status, disability children, employment status of spouse/partner, duration and hourly wage of last employment, logarithm of unemployment benefits, educational and vocational degrees, search variables of wave 1 (number of search channels and applications, search for full-time or part-time job).

\*\*\* significant at 1%; \*\* significant at 5%; \* significant at 10%.

Table A5: Main Results – Hourly Wage of New Job at the Second Interview

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Residual Happiness	0.017 (0.006)***								
Positive Residual Happiness		0.022 (0.011)**							
Negative Residual Happiness			-0.027 (0.009)***						
Positive Residual Happiness Squared				0.079 (0.028)***					
Negative Residual Happiness Squared				-0.028 (0.010)**					
Negative Residual Happiness Squared					-0.085 (0.023)***				
> 1st Quintile of Residual Happiness					0.014 (0.005)***				
> 2nd Quintile of Residual Happiness						0.081 (0.027)***			
> 3rd Quintile of Residual Happiness							0.092 (0.022)***		
> 4th Quintile of Residual Happiness								0.051 (0.022)**	
# of Observations	1,379	1,379	1,379	1,379	1,379	1,379	1,379	1,379	1,379
R <sup>2</sup>	0.321	0.318	0.321	0.321	0.325	0.321	0.325	0.319	0.317

Source: IZA Evaluation Dataset S, own calculations. State unemployment rates are taken from the federal unemployment agency.

Note: Probit regressions. Murphy and Topel (1985) standard errors in parentheses. The dependent variable is in logarithmic form. Positive and negative residual happiness are variables containing the residual values while setting the negative or positive values to zero, respectively. Negative residual happiness displays the absolute values of the residual variable. Further control variables are dummies for German federal states, interview cohorts, time between unemployment entry and interview, state unemployment rate wave 1 and wave 2, reason for unemployment, male, migrant status, age and age squared, marital status, disability children, employment status of spouse/partner, duration and hourly wage of last employment, logarithm of unemployment benefits, educational and vocational degrees, search variables of wave 1 (number of search channels and applications, search for full-time or part-time job).

\*\*\* significant at 1%; \*\* significant at 5%; \* significant at 10%.

Table A6: Employed at the Second Interview – Male and Female Sample

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Residual Happiness (M)	0.050 (0.019)***									
Residual Happiness (F)		0.002 (0.019)								
Pos. Residual Happiness (M)			0.053 (0.036)							
Pos. Residual Happiness (F)				-0.025 (0.038)						
Neg. Residual Happiness (M)					-0.086 (0.029)***					
Neg. Residual Happiness (F)						-0.019 (0.029)				
Pos. Residual Happiness (M)							0.301 (0.099)***			
Pos. Residual Happiness Sq. (M)								-0.082 (0.030)***		
Pos. Residual Happiness (F)								0.026 (0.098)		
Pos. Residual Happiness Sq. (F)									-0.019 (0.033)	
Neg. Residual Happiness (M)									-0.170 (0.076)**	
Neg. Residual Happiness Sq. (M)									0.020 (0.016)	
Neg. Residual Happiness (F)										-0.012 (0.075)
Neg. Residual Happiness Sq. (F)										-0.002 (0.017)
Equality of Coefficients Test (p-value)		0.074	0.140		0.105		0.044; 0.152		0.146; 0.381	
# of Observations	1,180	1,343	1,180	1,343	1,180	1,343	1,180	1,343	1,180	1,343
Log Likelihood	-731.593	-846.195	-734.124	-845.987	-730.720	-845.978	-730.214	-845.82964	-730.042	-845.972

Source: IZA Evaluation Dataset S, own calculations. State unemployment rates are taken from the federal unemployment agency.

Note: Probit regressions. Parameter estimates are shown. Murphy and Topel (1985) standard errors in parentheses. Positive and negative residual happiness are variables containing the residual values while setting the negative or positive values to zero, respectively. Negative residual happiness displays the absolute values of the residual variable. Further control variables are dummies for German federal states, interview cohorts, time between unemployment entry and interview, state unemployment rate wave 1 and wave 2, reason for unemployment, migrant status, age and age squared, marital status, disability children, employment status of spouse/partner, duration and hourly wage of last employment, logarithm of unemployment benefits, educational and vocational degrees, search variables of wave 1 (number of search channels and applications, search for full-time or part-time job).

\*\*\* significant at 1%; \*\* significant at 5%; \* significant at 10%.

Table A7: Employed at the Second Interview – With LOC Index

	(1)	(2)	(3)	(4)	(5)
Residual Happiness	0.018 (0.013)				
Locus of Control Index Std.	0.081 (0.028)***				
Pos. Residual Happiness		0.001 (0.026)			
Locus of Control Index Std.		0.089 (0.027)***			
Neg. Residual Happiness			-0.042 (0.020)**		
Locus of Control Index Std.			0.079 (0.027)***		
Pos. Residual Happiness				0.125 (0.067)*	
Pos. Residual Happiness Sq.				-0.042 (0.021)**	
Locus of Control Index Std.				0.084 (0.028)***	
Neg. Residual Happiness					-0.064 (0.053)
Neg. Residual Happiness Sq.					0.005 (0.012)
Locus of Control Index Std.					0.077 (0.028)***
# of Observations	2,534	2,534	2,534	2,534	2,534
Log Likelihood	-1611.790	-1612.745	-1610.597	-1610.7544	-1610.498

Source: IZA Evaluation Dataset S, own calculations. State unemployment rates are taken from the federal unemployment agency.

Note: Probit regressions. Parameter estimates are shown. Murphy and Topel (1985) standard errors in parentheses. Positive and negative residual happiness are variables containing the residual values while setting the negative or positive values to zero, respectively. Negative residual happiness displays the absolute values of the residual variable. Further control variables are dummies for German federal states, interview cohorts, time between unemployment entry and interview, state unemployment rate wave 1 and wave 2, reason for unemployment, migrant status, age and age squared, marital status, disability children, employment status of spouse/partner, duration and hourly wage of last employment, logarithm of unemployment benefits, educational and vocational degrees, search variables of wave 1 (number of search channels and applications, search for full-time or part-time job).

\*\*\* significant at 1%; \*\* significant at 5%; \* significant at 10%.