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Sheffield Economic Research Paper Series.

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ISSN 1749-8368

SERPS no. 2018007

May 2018

Unhappiness in unemployment – is it the same for everyone?

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16th April 2018

Abstract

Many studies have shown that there is a general tendency for men's subjective wellbeing to be more badly affected by unemployment when compared to women, although the extent varies across countries. The existing literature notes the gender differences and offers possible explanations, but does not formally compare competing hypotheses. We analyse whether gender differences in life satisfaction associated with the experience of unemployment can be attributed to degrees of specialisation in the labour market, differences in the types of work undertaken by men and women, differences in personality traits, work identity or gender norms. We find that it is not all, but some, women who suffer less than men when experiencing a transition into unemployment. The experience of unemployment for women is differentiated by pay, work identity and, most powerfully, gender attitudes.

Keywords: gender attitudes, life satisfaction, unemployment, wellbeing
JEL codes: I31, J16, J64

Acknowledgement: This work is part of the Work, Learning and Wellbeing programme of the What Works Centre for Wellbeing (www.whatworkswellbeing.org). We acknowledge the support of our funding partners, administered through Economic and Social Research Council Grant ES/N003586/1. We are grateful for very helpful comments from Sarah Brown, Bert van Landeghem, the WWCW Advisory Panel and associated reviewers, and seminar participants at the Universities of East Anglia, Essex and Sheffield.

1. Introduction

There has been a growing interest in providing evidence on the non-pecuniary costs associated with unemployment by investigating how it relates to people's subjective wellbeing.[1] International evidence (reviewed by Gedikli et al, 2017) suggest that life satisfaction drops upon unemployment and never returns to the pre-unemployment levels. The damaging experience of unemployment is not always the same, it seems to be greater for particular groups, the young, and those with particular personality types or employability skills (Gedikli et al, 2017). Furthermore, studies have shown that there is a general tendency for men to be more adversely affected by unemployment when compared to women, although the extent varies across countries. Whilst the existing literature notes the gender differences and offers possible explanations - type of job, commitment to work and gendered roles - it does not formally compare these competing hypotheses.

Even within groups, individuals experience unemployment differently. For example, while some individuals experience large drops in life satisfaction due to unemployment, others experience smaller changes while some may even experience increases in life satisfaction (see Gielen and Van Ours, 2014 for Germany). Figure 1 shows that this is the case also for the UK: most people show only small changes in life satisfaction following unemployment; however, while some experience a drop in life satisfaction, other experience an increase. As expected, the distribution is more skewed towards the left for men than for women.

[1] Our analysis focus on life satisfaction but we use other terms, such as wellbeing, happiness, and so on, when discussing previous work using measures different than life satisfaction.

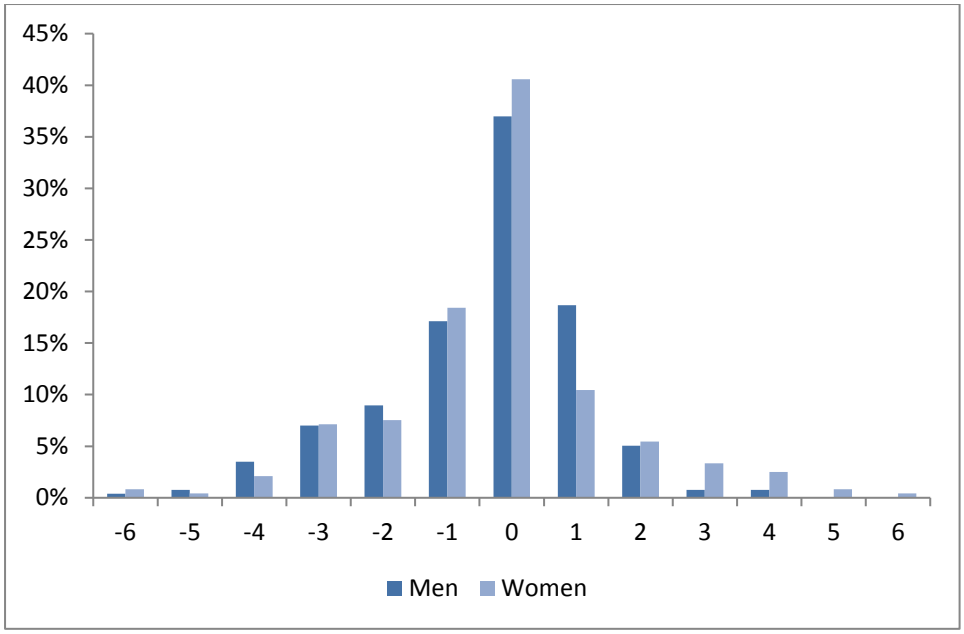


Figure 1: Change in life satisfaction (1-7 scale) for men and women following unemployment (UKHLS, 2009-2014)

This paper contributes to the wellbeing literature by using a UK household longitudinal survey (Understanding Society, 2009-2014) to undertake a systematic exploration of how the experience of unemployment might differ across individuals. We explore two main channels by which unemployment may affect men and women's life satisfaction differently: labour market (with a focus on the degrees of specialisation in the labour market and on differences in the types of work undertaken by men and women), and individual characteristics (with focus on personality traits, work identity and gender attitudes). Other mechanisms, for example household financial commitments, may be relevant, but we do not explore them here and leave their analysis for future research.

We find that the experience of unemployment is always damaging for men, but that it is more differentiated for women. While the negative impact of unemployment does not depend on the quality of the job lost, the amount of hours worked, or personality, we find that it is related to work identity and gender attitudes. Whilst, on average, unemployment is less damaging for women than men, there are some women – those with strong work identity or commitment to gender equality – for whom the experience is more damaging. Our findings emphasise that it is not just objective circumstances, but the values associated with those circumstances which determine life satisfaction. As gender egalitarian attitudes become more prevalent, the wellbeing costs of unemployment may increase.

2. Background

Research provides clear evidence that the effect of unemployment goes well beyond a loss in earnings (Winkelmann and Winkelmann, 1998) – unemployment has a detrimental impact on individuals' happiness and their satisfaction with life (see, for example, Binder and Coad, 2015 for Britain; Blanchflower and Oswald, 2004 for the US; Milner, 2016 for Australia; Powdthavee, 2007 for South Africa; Kassenboehmer and Haisken-DeNew, 2009 for Germany; Urbanos-Garrido and Lopez-Valcarcel, 2015, Ferreira et al., 2016 for southern Europe). Furthermore, people never fully adapt to unemployment (Clark et al., 2001; Clark et al., 2008; Hahn et al., 2015; Lucas et al., 2004; Oesch and Lipps, 2013). The negative effect of unemployment on life satisfaction remains even after controlling for income along with several other potential contributors, such as the duration of unemployment, marital status, age, education and personality traits.

Several studies have shed light on which groups experience the largest drop in life satisfaction upon unemployment. Whilst some have found that the young suffer more, the importance of personality traits and the employability potential of the unemployed were also noted (Boyce, Wood and Brown, 2010; Green, 2011; Hahn et al., 2015; Winkelmann, 2009). Many studies have shown that there is a general tendency for men to be more adversely affected by unemployment when compared to women, although the extent varied across the countries potentially due to the differences in the gender regimes affecting work centrality or the meaning of work for men and women (Strandh et al., 2013). However, recent work argues that the difference in the wellbeing outcomes of unemployment amongst men and women appears to become less pronounced in more recent years, although the negative effect of unemployment on wellbeing remains larger for men (see Carroll, 2007 and Strandh et al, 2013).

As noted in early theoretical contributions, alongside the economic need for employment, the negative association between unemployment and subjective wellbeing could be explained by the degree to which unemployment relates to the agency and social status or the identity of the individual (Fryer, 1992; Jahoda, 1982). Empirical research based on the British Household Panel Survey (BHPS) shows that unemployment is less detrimental for an individual's subjective wellbeing when the unemployment rate in their reference group (usually captured by regional unemployment rates) are higher, particularly for men (Clark et al., 2003 and Gathergood, 2013). Therefore, unemployment is less damaging for men if there are more unemployed around, implying a role for social comparison or norms effects in Britain. Similarly, the negative effect of unemployment on men's subjective wellbeing is smaller if

their partners are also unemployed, whereas this is not statistically significant for women (Clark et al., 2003). In parallel, evidence based on German Socio-Economic Panel (GSOEP) data suggests that women are more adversely influenced by their husband's job loss than vice versa (Marcus, 2013; Winkelmann and Winkelmann, 1995). These findings provide important insights into the underlying mechanisms behind the gender differentials. Different reactions to unemployment amongst men and women could reflect a social norm effect and could be explained by their different positions or roles in the family, labour market and society in general (Strandh et al, 2013; Winkelmann and Winkelmann, 2009).

Female homemaker, male breadwinner household types and the associated "provider" role for men can make unemployment a more stressful event for men, whilst, for women, it might be socially acceptable to be out of the labour market (Winkelmann and Winkelmann, 1998). The masculine identity that is strongly tied to having a job in Western societies (Paul and Moser, 2008), and employment being traditionally more attached to reputation and self-esteem for men can provide an explanation for the historically more pronounced negative wellbeing effect of unemployment for men (Carroll, 2007). However, given the increase in participation of women in the labour market and changing gender roles, it is equally possible that work has become increasingly important for women and more strongly linked to their identities. This may provide an explanation for the evidence from Scandinavian countries which, contrary to the general trend, shows that women's wellbeing levels are equally influenced by unemployment when compared to men (Hammarström et al. 2011, Strandh et al, 2013). This can also explain the smaller gender differences of the effect of unemployment on subjective wellbeing which are observed over time (Carroll, 2007; Strandh et al, 2013).[2]

Although the potential impact of traditional gender norms alongside role specialisation at home and in the labour market is acknowledged in the literature, there is insufficient evidence to support this as an explanation for any observed gender differences. While cross-country comparisons make intuitive sense in terms of varying institutional settings and their contribution to the gender differences in the link between unemployment and wellbeing, single country analyses remain speculative without directly testing the effect of gender role identities. This paper therefore aims to contribute to the wellbeing literature by introducing traditional gender norms and attitudes into the analysis of life satisfaction, and by providing evidence for

[2] Carroll (2007) evaluates the trend in the relationship between unemployment and wellbeing and asserts that the effect of unemployment on life satisfaction has become rather similar for men and women in Australia, Germany, USA and the UK.

the UK using attitudinal measures collected by Understanding Society. It, thereby, sheds light on the mechanisms behind the effect of unemployment on life satisfaction.

This paper also considers the likely effect of the different jobs that men and women hold prior to becoming unemployed. While the literature sometimes included controls for job characteristics (see, for example, Grun et al., 2010; Marcus, 2013; Schmitz, 2011), we are not aware of any study looking on how job characteristics influence the relationship between job loss and life satisfaction. It is possible that the gender differentials observed in the relationship between unemployment and wellbeing might reflect the varying experiences of paid work amongst men and women and the type of jobs they hold. Despite the increasing participation rates of women in the labour market, their position remains substantially different than that of men. Evidence across the EU and the UK indicates that women continue to spend more time on unpaid domestic work, they are more likely to work part-time or hold atypical contracts and earn less than men (Chzhen and Mumford 2011; Connolly and Gregory, 2008; Kan, 2008; Tijdens 2002). Given that the wellbeing effect of unemployment has a strong association with the quality of the job, women's segregation into occupations that are less paid, less prestigious and mostly part-time could offer an alternative explanation why their loss in wellbeing following unemployment is lower than that of men (Lennon, 1987; Broman, 1999; Strandh, 2000: Llena, 2009).

3. Method

Our analysis proceeds in two steps. First, we estimate the impact that a transition from a paid job into unemployment has on life satisfaction. Second, we use interactions to analyse whether the impact of the transition differs across groups of individuals; for example, unemployment may have a larger impact on workers with strong – as opposed to weak – work identity and on workers who lost a 'good' – as opposed to a 'bad' – job. We analyse how the impact of a transition into unemployment varies with various types of characteristics of the individual or of the previous job for men and women separately.

In the first step we estimate the impact of a transition into unemployment on life satisfaction using the following model:

$$LS_{it} = \alpha + \beta_1 LS_{it-1} + \beta_2 U_{it} + \beta_3 X_{it} + \varepsilon_{it} \quad (1)$$

The dependent variable is the level of life satisfaction of individual i at time t, while the main variable of interest is U_{it}, a dummy variable which is one for those who are unemployed at time t and zero for those who are still employed.

The sample includes only individuals who are in paid employment at time t-1 and are either in paid employment or unemployed at time t. Those who are not in paid employment (i.e. inactive, unemployed and self-employed) at time t-1 as well as those who are not in paid employment nor unemployed at time t (i.e. those who are inactive or self-employed at time t) are excluded from the sample. We focus on transitions into unemployment for the sake of simplicity. It is likely that the impact of a job loss differs for people who enter unemployment and therefore actively look for an alternative job compared to those who enter inactivity and therefore do not actively look for a job, whether because they do not want a job, are unable to take up one, or because they are too discouraged to search. Since the analysis of the impact on life satisfaction of moves into inactivity in addition to moves into unemployment would make the analysis and interpretation of results too complicated, the analysis of moves into inactivity is therefore left for future research.

Our aim is to analyse whether the transition into unemployment differs depending on the characteristics of the job prior to unemployment. Since we only observe job characteristics for the job that the individual had at the time of the interview, we also exclude from our sample all individuals who had multiple employment spells between interviews and only keep those for whom the last job was the one they had at the time of the previous interview (at t-1). Given the way our sample is selected, U_{it} identifies transitions from employment into unemployment.

To control for individual unobserved confounders we include the level of life satisfaction in the previous year LS_{it-1} among the explanatory variables. For this analysis we prefer to use the lag of the dependent variable instead of individual fixed effects since it is likely that the individual unobserved confounders are not time-invariant. This approach allows us to control for the fact that individuals who are employed at t-1 but are unemployed at t may already have a lower level of life satisfaction at t-1 (while still in work) compared to those who are employed at both points in time. Since we condition on the level of life satisfaction at t-1 we can then treat the transition into unemployment as exogenous (see Angrist and Pischke 2009: 243-244) and β_2 can then be interpreted as the causal impact of a transition into unemployment on life satisfaction.

Individual fixed effects are often used instead of the lag of the explanatory variable under the assumption that individual unobserved confounders are time-invariant. Angrist and

Pischke (2009: 246-247) discuss the relationship between models using individual fixed effects and models using the lag of the dependent variable. In their example they specify a treatment effect which is positive and assume a negative correlation between the lagged dependent variable and the treatment which signs the bias. In our case the treatment effect is negative rather than positive and there is also a negative correlation between the lagged dependent variable (LS_{it-1}) and the treatment (unemployment). It follows that the fixed effects estimates of β_2 should be less negative than those from a model with a lagged dependent variable, but we also include interaction terms which make the relationship less clear cut. In this paper we use the lagged dependent variable but also estimate fixed effect models – results are available from the authors upon request – obtaining results consistent with the above discussion but generally very close to the ones shown in this paper.

Our models also include (in X_{it}) a set of other controls that have been found to have an impact on life satisfaction (Dolan, Peasgood and White 2008); these, together with the other covariates, are discussed in Section 4. Finally, since research has shown that in the context of life satisfaction linear and non-linear models produce similar results (Ferrer-i-Carbonell and Frijters 2004), for ease of interpretation our models are estimated using OLS.

In the second step we focus on heterogeneity across groups and analyse whether the transition into unemployment has a different impact on people with different individual or job characteristics. To this aim we estimate models similar to equation (1), but with the inclusion of additional covariates (Z_{it-1}) and the interaction between these covariates and the unemployment transition dummy ($Z_{it-1}U_{it}$). The resulting model is:

$$LS_{it} = \alpha + \beta_1 LS_{it-1} + \beta_2 U_{it} + \beta_3 X_{it} + \beta_4 Z_{it-1} + \beta_5 Z_{it-1} U_{it} + \varepsilon_{it} \qquad (2)$$

In these models the coefficient β_5 measures whether the transition into unemployment has a different impact on people with different job and/or individual characteristics. In addition, as discussed in Section 4, we include measures of job quality, gender attitudes, personality and work identity. However, because of small sample sizes we cannot include all covariates at once but include a different subset of variables in each specification.

Since we expect unemployment to have a different impact on men and women, we estimate all models separately for men and women. Our aim is to analyse whether the impact of unemployment transitions on life satisfaction is different for different types of men and women with types being measured by the quality of their jobs, personality and other attitudes.

4. Data and variables

We estimate equations (1) and (2) using a nationally representative longitudinal household survey, Understanding Society: the UK Household Longitudinal Survey (UKHLS). In the survey all adult (aged 16 and older) members of the sampled households are eligible for interviews every year; most respondents are interviewed face to face with some questions, such as life satisfaction, asked in a short self-completion questionnaire. The survey started in 2009 and we use data from the first five waves which cover the period 2009-2014. The longitudinal nature of the survey and the questions asked make it particularly suited to our analysis.

Understanding Society includes questions on socio-demographic factors, education, labour market experience, partnership and fertility, health and wellbeing and attitudes. The wellbeing outcome (LS_{it}) that we focus on is the question on overall life satisfaction, which is measured on a 7 point fully-labelled scale ranging from 1 (being completely dissatisfied) to 7 (being completely satisfied).

The main variable of interest is transition into unemployment (U_{it}) and is measured by respondents' self-reported main activity status at each interview. This variable takes a value 1 for those who were in paid employment in year t-1 and unemployed in year t, and 0 for those who were in paid employment at year t-1 and t. As mentioned in Section 3, all models also include a set of covariates (X_{it}). These include various individual characteristics: a measure of self-reported health, which we recode into three groups (excellent or very good used as reference, good or fair, poor), a dummy for lack of disability (which is 1 for those who report not being long term sick or disabled and 0 otherwise), age groups (20-29 used as a reference, 30-39, 40-49, and 50-59 years; older people are excluded), six levels of educational qualification (university degree used as reference, other higher, A-level etc., GCSE etc., other qualification, no qualification). As household characteristics we include three types of marital status (never married used as reference; cohabiting as a couple, married or in civil partnership; and separated, divorced or widowed), a three category variable to measure the number of own children in the household (no children used as reference, one, two or more) and a four category variable that measures the age of the youngest own child in the household (0-4 years, 5-11 years, 12-16 years, 16 years or older used as reference). We also include the log of gross monthly household income equivalised using the modified OECD scale, and a seven category region of residence measure (London used as reference; North East, North West and Yorkshire and Humberside; East Midlands and West Midlands; East of England, South East and South West; Wales; Scotland; Northern Ireland).

Since part of the data were collected during the recession period, while other were collected in the period following the recession, we also include year dummies to capture year-specific general effects on life satisfaction over and above the impact of individual circumstances.

As mentioned in Section 3, we expect the loss of life satisfaction associated with a transition to unemployment to vary by some factors or moderators and in particular by the characteristics of the job lost, by personality and attitudes. All these factors (Z_{it-1}) are measured at year t-1.

Job quality indicators

First, we expect the transition into unemployment to have a more negative impact on life satisfaction for those who lost a good as opposed to a bad job, and for this we use various measures of job quality. The first measure is the percentile ranking in the distribution of usual gross hourly wages (men and women combined), where the gross hourly wage is computed by dividing usual gross monthly earnings by 4.3 and hours worked per week. The second measure of job quality is occupation, measured by the 9 groups of the SOC2000 classification. The third and fourth measures of job quality are measures of whether the employing firm or organisation belonged to the public sector (reference), private sector or other (charity, voluntary organisation, trust or some other sort of organisation), and whether the job lost was permanent or not.

Losing a part-time job may have a less negative impact on life satisfaction than losing a full-time job since the loss in terms of income is comparatively lower; on the other hand, the gain in terms of leisure time is comparatively lower too. The difference in the impact of the transition into unemployment may be even larger if the job lost required an extremely high number of working hours. We analyse whether losing a long working hours' job mediates the impact of unemployment by including in Z_{it-1} dummies for usual hours of work per week: 0-15 hours used as reference, 16-35 hours, and 36 hours or more. As a measure of the overall quality of the job lost in a further model we include job satisfaction which is also measured on the same 7 point scale as life satisfaction; we use this as a continuous variable. The expectation is that any transition into unemployment will have a less negative impact if the respondent was dissatisfied with the job lost. Because of the correlation between life satisfaction and job satisfaction, in this model the measure of life satisfaction at time t (LS_{it-1}) is omitted.

In a similar way, since research has shown a negative impact of commuting on life satisfaction (Roberts et al, 2011; Chatterjee et al, 2016), it is possible that the impact of unemployment is lower if the job lost required long travel times or required commuting by public transport. We analyse this in three ways. First we include commuting time either as dummies (less than 10 minutes used as reference, 10-20 minutes, 20-30 minutes, 30 minutes to 1 hour, and greater than one hour) or in actual minutes. Finally, we include a three category variable representing commuting mode: car (car, van, motorcycle, moped, scooter, taxi, minicab used as reference), public transport (bus, coach, train, tube, tram), and cycle, walk, or other.

Personality traits

Research has shown that personality is highly correlated with life satisfaction (Diener et al 1999), but are certain personality types more sheltered than others from the negative impact of unemployment? We analyse this by including in Z_{it-1} the Big Five personality traits included in the survey.

In the third wave of Understanding Society, respondents were asked to answer the 15 item personality module, which is used to measure the Big Five personality traits: Openness to experience, Conscientiousness, Extraversion, Agreeableness and Neuroticism. Although personality traits may change with age (Brown and Taylor 2014), especially for people younger than 30, and in response to life events, there is no evidence that it changes within the short period (2-4 years) that our analysis covers (Cobb-Clark and Schurer 2012, Roberts and Mroczek 2009, Costa and McCare 1988). Hence, under this assumption that personality does not change significantly within our short period, the scores obtained from wave three are also used for all other waves of data.

Work identity

As existing studies have shown that the adverse effect of long working hours on wellbeing is less for those with strong work identity, we expect a larger impact of unemployment for those who have a strong work identity (Bryan and Nandi 2015).

In the second wave of Understanding Society respondents were asked "How important is your profession to your sense of who you are?" with response options "very important", "fairly important", "not very important", "not at all important", "don't know/doesn't apply". Based on these answer we identify respondents with a strong work identity as those who answered "very" or "fairly important". The answers obtained from

wave two are also used for all other waves of data under the assumption that work identity does not change significantly within this period. Work identity, like other aspects of identity, develops during adolescence and remains stable throughout life except when there are dramatic life changes (see Phinney 1990, 1991 for a discussion of Erickson's model of ego identity formation). As unemployment constitutes such a life change, we expect it to have an impact on work identity although not over such a short period as one year. However, to exclude this possibility, we also re-estimate the model with work identity after excluding all transitions between waves 1 and 2, i.e. before the transition into unemployment; our results do not change.

Gender attitudes

As already mentioned, unemployment may have a more negative effect on men who hold traditional gender attitudes since they are more likely to consider their breadwinner role within the household very important; for women, it is likely that those with more traditional gender attitudes will be less negatively affected by unemployment since they are more likely to see their role as homemakers rather than breadwinners.

To analyse whether gender role attitudes moderate the effect of unemployment we use data from the second and fourth waves of Understanding Society, when respondents were asked a series of five questions with an agree-disagree fully labelled 5 point scale (with 1 meaning strongly agree, and 5 meaning strongly disagree) to evaluate their gender attitudes. The questions were: (1) A pre-school child is likely to suffer if his or her mother works; (2) All in all, family life suffers when the woman has a full-time job; (3) Both the husband and wife should contribute to the household income; (4) A husband's job is to earn money; a wife's job is to look after the home and family; (5) Employers should make special arrangements to help mothers combine jobs and childcare. We reverse-coded questions 3 and 5 so that for all questions higher scores on every question meant more egalitarian values. We used the answers reported in wave 2 for waves 1 to 3, and the answers reported in wave 4 for waves 4 and 5. We then carried out a factor analysis pooling all observations and retained one factor which loaded positively on all 5 question items (noting the reverse coding), with the heaviest loadings on items (1), (2) and (4).

As discussed in Section 2, it is also likely that the impact of gender attitudes differs depending on the household structure, specifically, whether a partner and children are present in the household. For example, women with traditional gender role attitudes may be less affected by job loss if they have children as they may consider motherhood as a more

important aspect of their lives than being employed, while women with more egalitarian attitudes may not have this "protective" quality. It may also be the case that women who are in partnerships are less affected by job loss as they have the partner's income to fall back on. Note the difference in the interpretation of these two channels: the first is a preference based explanation while the second is a constraint based explanation. To analyse these effects we also estimate the models with unemployment transitions interacted with gender attitudes separately for individuals who are in partnerships and those who are not, as well as individuals whose children are living with them in the household or not.

Sample Selection

We restrict the sample to 20-59 year old labour market participants to have a homogenous sample in which most people are likely to have completed their full-time education and that excludes retirees. As ethnic minorities' labour market experience may include additional issues of discrimination, direct or indirect, English language difficulties and unfamiliarity with the labour market in case of immigrants, we only include those who self-report their ethnic group as White – British/English/Scottish/Welsh/Northern Irish. Finally, those who reported any additional paid employment spells in between two consecutive interviews are excluded. This results in a sample of 11,434 person-year observations for men and 15,554 for women. The number of transitions is 257 for men and 239 for women.

Descriptive statistics of all variables are reported in Tables A1-A3 in the Appendix.

4. Results

We begin with a set of benchmark specifications that establish the impact of a transition into unemployment on life satisfaction, looking at men and women separately. We first control only for life satisfaction at *t*-1 and then introduce controls for the standard determinants of life satisfaction (specifications 1 and 2 in Table 1). We confirm that people who become unemployed experience a large decline in life satisfaction. The unconditional estimate (controlling only for life satisfaction at t-1) effect is a drop of 0.5 points for men and 0.39 points for women (specification 1). However, about 40-50% of these effects can be explained when we add socio-demographic characteristics (specification 2) which are also likely associated with unemployment (for instance, those in poorer health suffer a much larger decline in life satisfaction than those in good health). Nonetheless, the remaining impact of unemployment is still large even accounting for these factors, thus *ceteris paribus* life

satisfaction declines by 0.32 points among men who lose their jobs and by 0.22 points among women (specification 2).

TABLE 1 ABOUT HERE

Job characteristics and quality

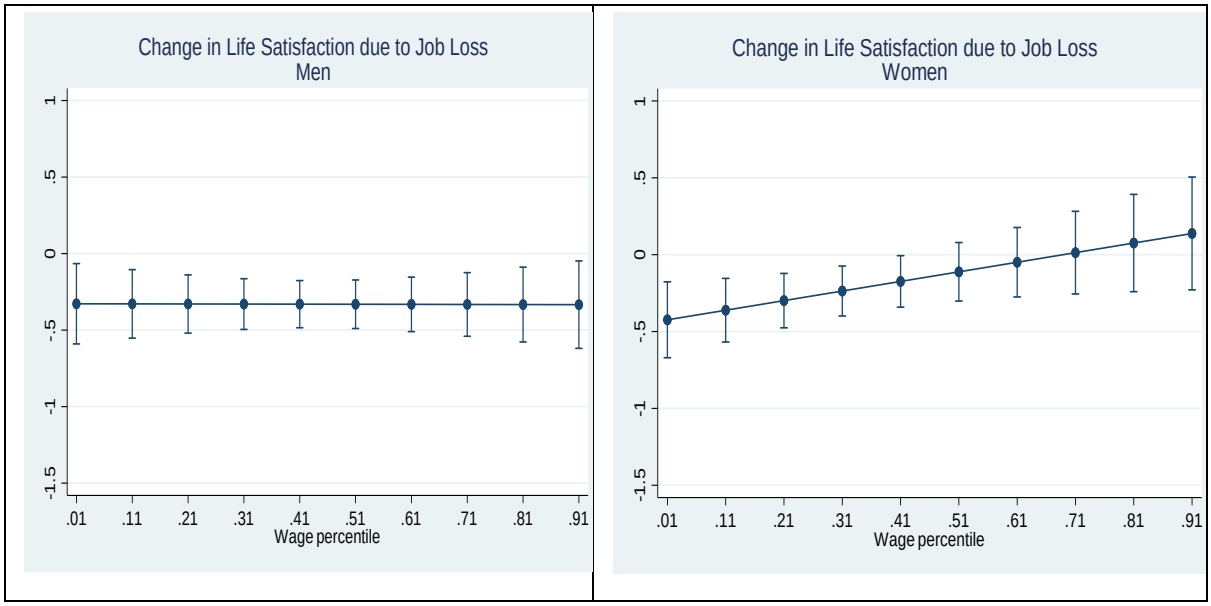
We now focus on the role played by various measures of job type and quality. There is almost no change in the unemployment effect when we add controls for one-digit occupation or for the position in the wage distribution (specification 3, Table 1). The effects of occupation and wage on life satisfaction are relatively weak (men in sales or elementary jobs are less satisfied while more highly paid men are more satisfied; there are no effects for women), probably because we control for life satisfaction at t-1.

As our main interest is in whether the effects of unemployment vary across occupations and pay levels, we next add interactions of these variables with unemployment (Table 2). For men there is some indication that the reduction in life satisfaction due to unemployment is greater if they were in sales or elementary occupations and less if they were in personal services (specification 5). These effects are not precisely estimated (significant at only 10%), but may suggest that unemployment is a particularly harsh blow for men in some lower-skilled occupations. On the other hand, there is no evidence that the wage level itself changes the impact of unemployment on life satisfaction (specification 4).

TABLE 2 ABOUT HERE

The picture is somewhat different for women. Here we find no evidence of occupational effects (specification 5) but we do find that women suffer less from a transition into unemployment if they were more highly paid (see specification 4). Figure 2 graphs the marginal effects (and 95% confidence intervals) across the wage distribution. While the impact of unemployment on life satisfaction is constant for men (at about -0.3 points), it is differentiated amongst women, with those at the lower end of wage distribution – perhaps where the contribution of income to the household is more important – experiencing a much bigger loss in life satisfaction. The impact is about -0.4 points in the lowest decile group (which is larger than the effect for men) but essentially disappears (and loses statistical significance) above the median. This may be capturing something about the motivation for work, for example greater financial need.

Figure 2 – Marginal effect of a transition into unemployment and wage on life satisfaction



Note: These are marginal effect on life satisfaction at t, controlling for life satisfaction at *t*-1, calculated from estimates shown in Table 2 (specification 4).

The remaining specifications (6-17, Tables 3 and 4) investigate the role of employment sector, contract type, hours worked and commuting behaviour, first adding in these characteristics as controls only and then interacting them with unemployment (still controlling in all specifications for occupation and wage). Neither a person's sector of employment nor their contract type (permanent or not) influence their life satisfaction (again, controlling for life satisfaction at t-1) or the impact of a transition into unemployment on life satisfaction (Table 3). There is some influence of hours worked and commuting time and mode – generally, longer hours and long commutes tend to reduce life satisfaction relative to previous levels, and women commuting by public transport experience lower life satisfaction (Table 4), but none of these factors affects the impact of a transition into unemployment on life satisfaction.

Overall, while we find a large and robust effect of unemployment on life satisfaction, it appears to be little affected by standard measures of job type or quality, except for occupation (for men) and the wage (for women). Our cell sizes are admittedly quite small in some specifications but we adopt a stepwise approach to mitigate this issue. In the final models we use job satisfaction as an indicator of overall job quality.[3] The interaction term

[3] A caveat to this specification is that job satisfaction may be endogenous if job and life satisfaction share a common underlying factor. We are including job satisfaction here in the spirit of the two-layer model

between job quality and the transition into unemployment is marginally significant for men when we include lagged life satisfaction but not in any of our other specifications. Thus there is little evidence that the damaging effect of unemployment is larger for those who lose a 'better' job or one that brings more satisfaction (see Appendix Table A4).

TABLES 3, AND 4 ABOUT HERE

Personality type

We now focus on the effects of personality and attitudinal variables (still controlling for the standard socio-demographic characteristics, occupation and wage), beginning with the Big 5 personality traits (Table 5). For those in employment, life satisfaction (controlling for life satisfaction at *t*-1) is higher for those who score more highly on conscientiousness, extraversion and agreeableness scales, and lower for those scoring highly on the neuroticism scale (specification 18). However, we find no evidence that a transition into unemployment has a differential effect for those of different personality types (specification 19). As a further check, we re-estimated this model with only conscientiousness but not the other personality traits, following Boyce et al (2010). This suggests that conscientious women suffer a smaller drop in life satisfaction following unemployment, in contrast with Boyce et al (2010) who found the opposite, for both genders combined, using German data and somewhat different models). However, the other results are unchanged and since the Big 5 personality indicators are designed to be included as a full set, we do not pursue this result further (see Appendix Table A5).

TABLE 5 ABOUT HERE

Work identity

There is a higher level of life satisfaction (controlling for life satisfaction at *t*-1) for those in employment with a stronger work identity, and this is true for both men and women (see specification 20, Table 6). However, a more complex pattern emerges when looking at the interactions of strong work identity and unemployment (specification 21). The coefficient is positive for men but negative (though not significant) for women. Figure 3 shows the

implemented by Powdthavee (2012), in which domain satisfactions are intermediate variables between external factors and life satisfaction.

aggregate marginal effects: there is a loss of life satisfaction for all those who experience a transition into unemployment, but the impact is smaller for men with a stronger work identity and greater for women with a stronger work identity.

Figure 3 – Marginal effect of a transition into unemployment and work identity on life satisfaction

Note: These are marginal effects on life satisfaction at t, relative to life satisfaction at *t*-1, calculated from estimates shown in Table 6 (specification 21).

TABLE 6 ABOUT HERE

While the confidence intervals around these effects are quite wide, the result for women follows our expectations – those who identify most with work are the ones who suffer most from losing it. However, the result for men is a puzzle. Why should those with a weaker work identity suffer more? To see whether the work identity measures may be mediating the effects of family structure on life satisfaction, we estimated the correlates of work identity using multivariate regressions (full results available on request from the authors). For both men and women, education and occupational status are strong predictors of work identity (for women, hours of work also predict work identity). Marital status and children (number and ages) have almost no effect, although married or cohabiting women report slightly weaker work identity than singles. Thus, the work identity measure does not seem to be picking up the effect of family.

We further analysed the robustness of the results by checking sensitivity to our choice of control variables (X_{it}), specifically whether the definition of work identity ("How important is your profession to your sense of who you are?") interacts with occupation or

with personality type but the finding is robust to the choice of specification (see Appendix Table A6). To check whether the identity question could have been interpreted differently across occupational groups (and so may be picking up occupational effects), we estimated models separately for those in professional occupations (SOC 1-3) and for those in non-professional occupations (SOC4-9), see Appendix Tables A7-8. The interaction coefficients are essentially unchanged (though less precisely estimated) and in fact the clearest result we get is for men in non-professional occupations – suggesting that question wording is not driving the results.

We also considered whether the result might be related to the reason for the transition into unemployment – allowing for different effects for those who left a job voluntarily and those who were dismissed or made redundant – again the finding is robust (see Appendix Table A9). Finally, one possible issue may be that work identity is measured in Wave 2 and we include unemployment transitions between Waves 1 and 2, and unemployment may have affected the work identity; therefore we also estimate our models excluding Wave 2, but again the finding is robust (see Appendix Table 10). We speculate that men with a stronger work identity who experience a transition into unemployment may be more confident in their employability or job search skills, similarly, they may engage in more job search activity or engage in other satisfying activities.

Gender attitudes

Finally, we analyse whether a transition into unemployment has a different impact on workers with more egalitarian compared with those who have more traditional gender values, by including the scores of the factor analysis measuring gender attitudes in Z_{it} (Table 7). For both men and women in employment life satisfaction (relative to life satisfaction at *t*-1) is higher for those with more gender equal attitudes (specification 22) and the interaction of gender attitudes and unemployment is negative (though not significant for men, specification 23). We illustrate our results by comparing the total impact of a transition into unemployment on life satisfaction across the range of gender attitudes – from those with more traditional gender attitudes to those with more gender egalitarian attitudes (Schober and Scott, 2012). Figure 4 shows this range, going from those reporting the lowest 10% of scores (very traditional attitudes) to those reporting the highest 10% of scores (very egalitarian attitudes).

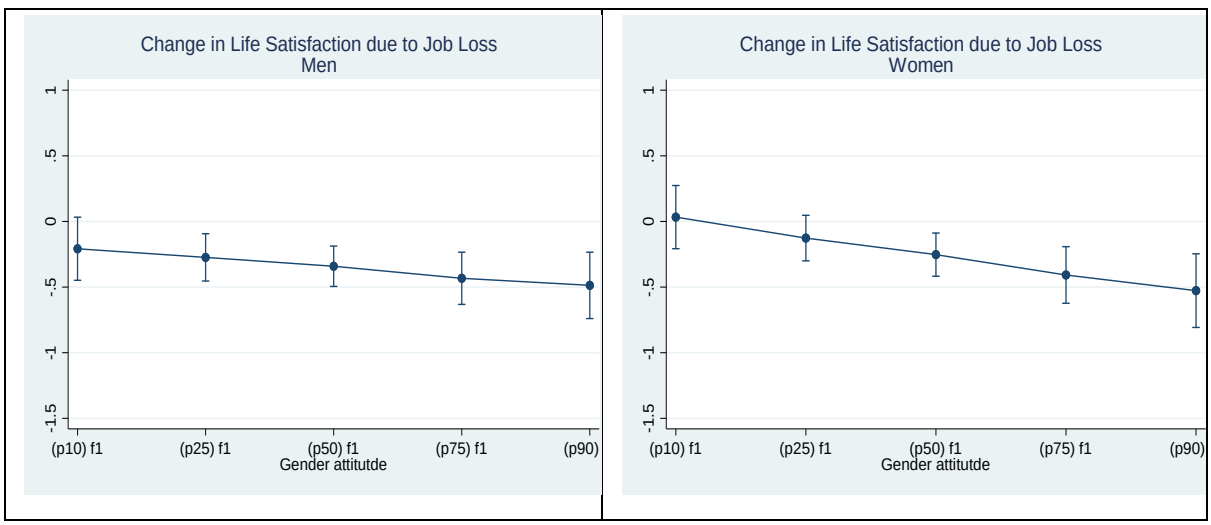
For men, the loss of life satisfaction associated with unemployment has a fairly shallow gradient as we move along the distribution from traditional to egalitarian values – although as the interaction term is not statistically significant, we also cannot reject a flat line

(crossing the vertical axis at -0.33, see Table 7). For women, however, the gradient is not only steeper but the marginal effect of a transition into unemployment for those women with the most traditional gender values is positive, suggesting that their life satisfaction increases slightly, though this is not statistically significant. Furthermore, the marginal effect for women with the most egalitarian gender attitudes is not only negative, but the point estimate here is greater than that for men across the whole distribution of attitudes – these women suffer more than all men in terms of lost life satisfaction. Our results suggest that at least 25% of women suffer more than men do.

TABLE 7 ABOUT HERE

In summary, similar to the findings for work identity, the results for women suggest that those with strong gender egalitarian attitudes are more attached to the labour market and suffer more from a transition into unemployment. Among men we do not find that those with more traditional gender norms suffer more. In fact, if anything, we find that the opposite is true, and it is possible that this reflects that work has always been part of men's social identity, regardless of whether they hold an egalitarian or conservative attitudes. However, the importance of our results relates to the fact that paid work has now become the norm for women too (ILO, 2017).

Figure 4 – Marginal effect of a transition into unemployment by gender attitudes on life satisfaction

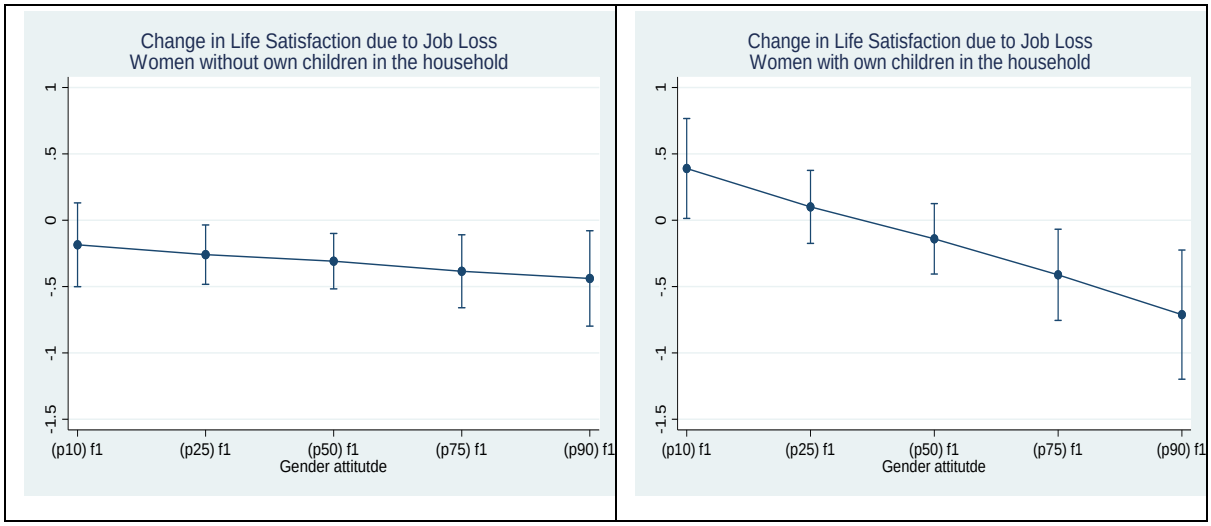


Note: These are marginal effect on life satisfaction at t, relative to life satisfaction at *t*-1, calculated from estimates shown in Table 7 (specification 23).

The change in life satisfaction associated with a transition into unemployment may interact differently with gender attitudes for parents of young children or for those with other potential earners in the household; alternatively, the attitudes held may vary with partnership or parenthood status. For example, women reporting more traditional attitudes may disproportionately be those with young children to care for, or be secondary earners who can fall back on their partner's earnings in case of job loss. Thus, the results may reflect family structure rather than attitudes. To allow more fully for these factors we estimate separate models by parenthood and partnership status. These results are presented in Tables 8a and 8b.

We find that for women the coefficient for the gender attitudes variable is the same regardless of parenthood status, but that the interaction term with unemployment is negative and significant only for mothers (Table 8a and Figure 5). For non-mothers, the impact of gender attitudes upon life satisfaction and how this interacts with the experience of unemployment is similar to that reported by men – that is, a transition into unemployment results in a lower level of life satisfaction which does not change significantly with gender attitudes. However, for mothers who lose their jobs, life satisfaction rises with more traditional attitudes but falls for those with more gender egalitarian views. These effects are considerably larger than those in Figure 3: the impact of unemployment is +0.39 points for mothers with traditional attitudes and -0.71 points for mothers with egalitarian attitudes. It does not appear that gender attitudes are just reflecting motherhood because all women in the sample are mothers – on the contrary it seems that among mothers, gender attitudes are even more important than among women generally.

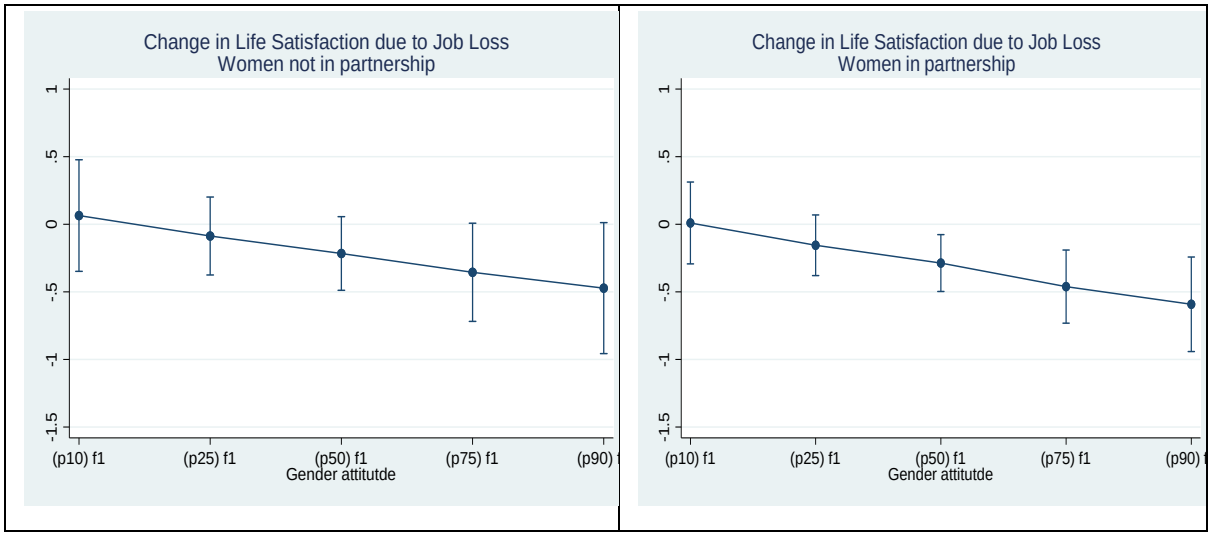
Figure 5 – Marginal effect of a transition into unemployment and gender values on life satisfaction for women by parenthood status



Note: These are marginal effect on life satisfaction at t, relative to life satisfaction at *t*-1, calculated from estimates shown in Table 8a.

Turning to single women (Table 8b and Figure 6), the impact of unemployment does not appear to be sensitive to gender attitudes but partnered women with gender egalitarian attitudes suffer more from unemployment than those women with more gender traditional attitudes. For men, fatherhood and partnership status is less of a discriminator in terms of the interaction of gender attitudes with the experience of unemployment. These results are consistent with much of the literature on gender and work, which finds that patterns of work are reasonably similar between men and single women or women without children, and our results suggest that work plays a similar role in terms of life satisfaction and social identity. However, work interacts differently with gender attitudes for women who are married or who have children; as might be expected, it plays a much more important role for women holding more gender egalitarian views.

Figure 6 – Marginal effect of a transition into unemployment and gender values on life satisfaction for women by partnership status



Note: These are marginal effect on life satisfaction at t, relative to life satisfaction at *t*-1, calculated from estimates shown in Table 8b.

TABLES 8A AND 8B ABOUT HERE

5. Conclusions

In common with the existing literature we find gender differences in the impact of transition into unemployment on life satisfaction – the damage being greater for men on average. We extend previous studies exploring possible explanations: different degrees of specialisation in the labour market, differences in the types of work undertaken by men and women, and differences in personality traits, work identity and gender attitudes. Whilst factors such as type of job (occupation, hours of work, length/type of commute) and personality types all influence levels of life satisfaction – relative to life satisfaction at t-1 – we do not find evidence that the experience of a transition into unemployment differs by indicators of job quality or personality traits.

Interestingly, controlling for household income and life satisfaction in t-1, the loss in life satisfaction associated with a transition into unemployment for men is unaffected by how well or poorly paid the job was (this remains constant at roughly -0.33 points), but there is a differentiated experience for women. Those women who experience the loss of a poorly paid job experience a much greater reduction in life satisfaction than those who lose a moderately paid job (-0.45 in the bottom decile compared with -0.2 at the median), and the effects of a transition into unemployment from jobs paying above the median are not statistically significant. Despite the controls for household income (at time t), the effect might capture something about the motivation for work, for example greater financial need. Furthermore,

there is evidence not only that levels of life satisfaction (relative to life satisfaction at t-1) are higher for those in continued employment with a strong work identity but also that for men, but not women, those with strong work identity cope better with unemployment. This provides a partial contribution to our understanding of the gender differential in the impact of a transition into unemployment upon life satisfaction. More importantly, in terms of understanding the gender difference, we find that for women (particularly for mothers or women in couples) the experience of a transition into unemployment is much more damaging if they have egalitarian compared with traditional gender attitudes.

We therefore throw light on underlying mechanisms behind the effect of unemployment on life satisfaction. It is not all, but some, women who suffer less than men when experiencing a transition into unemployment. The approach taken in this paper reveals that whilst on average women experience a lower drop in life satisfaction associated with unemployment, this masks experiences which are differentiated by pay, work identity and, most importantly, gender attitudes. Women who lose a job that is low paid, and those with a strong work identity or with gender egalitarian attitudes, actually suffer more.

Whilst life satisfaction is influenced by a range of socio-demographic factors, job type, personality and attitudes, it is interesting that in the recent experience in the UK, the damage to life satisfaction associated with unemployment does not seem to depend upon the type of job lost or personality traits. The experience of a transition into unemployment is mostly influenced by how each individual identifies with their work and by gender role attitudes, and this differs for men and women. Over time, as gender norms are expected to become more egalitarian across the population (ILO, 2017), the gender difference in loss of life satisfaction from unemployment may disappear and the total wellbeing cost from the similar levels of unemployment could be higher. In terms of how this evidence may influence policy and practice, whilst recognising that unemployment is always damaging, it might inform not only the level of support given but also that the approach might be differentiated amongst the unemployed.

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Table 1. Factors influencing life satisfaction, no controls, standard demographic controls, standard job characteristics (Empirical Specifications: 1-3)

	Men						Women					
	Specification 1		Specification 2		Specification 3		Specification 1		Specification 2		Specification 3	
Life Satisfaction t-1	0.44**	(0.01)	0.40**	(0.01)	0.39**	(0.01)	0.43**	(0.01)	0.37**	(0.01)	0.37**	(0.01)
Unemployed	-0.50**	(0.08)	-0.32**	(0.08)	-0.34**	(0.08)	-0.39**	(0.08)	-0.22**	(0.08)	-0.22**	(0.08)
Health status (ref: excellent/very good)												
Good/fair			-0.30**	(0.02)	-0.29**	(0.02)			-0.31**	(0.02)	-0.32**	(0.02)
Poor			-0.94**	(0.09)	-0.93**	(0.09)			-0.91**	(0.08)	-0.91**	(0.08)
No long term disability			0.06*	(0.03)	0.06*	(0.03)			0.09**	(0.02)	0.09**	(0.02)
Age group (ref: 24 – 29)												
30 – 39			0.02	(0.04)	0.00	(0.04)			-0.05	(0.04)	-0.05	(0.04)
40 – 49			-0.03	(0.04)	-0.07	(0.04)			-0.07+	(0.04)	-0.07+	(0.04)
50 – 59			-0.03	(0.04)	-0.07	(0.05)			-0.12**	(0.04)	-0.12**	(0.04)
Marital Status (ref.: never married)												
Cohabiting			0.10*	(0.04)	0.09*	(0.04)			0.22**	(0.04)	0.22**	(0.04)
Married/civil partners.			0.19**	(0.04)	0.18**	(0.04)			0.32**	(0.03)	0.31**	(0.03)
Separated, divorced etc			-0.10+	(0.06)	-0.11+	(0.06)			0.01	(0.04)	0.01	(0.04)
Number of children (ref.: no children)												
One			-0.05	(0.04)	-0.06	(0.04)			-0.05	(0.03)	-0.05	(0.03)
Two or more			-0.08+	(0.05)	-0.09*	(0.05)			-0.10**	(0.04)	-0.10**	(0.04)
Age of youngest child (ref.: 16+)												
0-4			-0.02	(0.05)	0.01	(0.05)			0.00	(0.04)	0.00	(0.04)
5-11			0.00	(0.05)	-0.01	(0.05)			-0.02	(0.04)	-0.03	(0.04)
12-16			0.05	(0.05)	0.05	(0.05)			-0.02	(0.04)	-0.02	(0.04)
16+												
Household income			0.11**	(0.02)	0.07**	(0.03)			0.09**	(0.02)	0.09**	(0.02)
Educational qualifications (ref.: having a degree)												
Other higher qualif.			0.00	(0.04)	0.03	(0.04)			0.02	(0.03)	0.02	(0.03)
A level			0.03	(0.03)	0.07*	(0.03)			-0.01	(0.03)	-0.01	(0.03)
GCSE			0.01	(0.03)	0.07*	(0.04)			-0.03	(0.03)	-0.02	(0.03)
Other qualifications			0.00	(0.05)	0.06	(0.05)			-0.11*	(0.05)	-0.09+	(0.05)

No qualification			0.13*	(0.07)	0.23**	(0.07)			-0.22**	(0.06)	-0.20**	(0.06)
Region of Residence (ref: London)												
North			0.07	(0.05)	0.08	(0.05)			0.03	(0.05)	0.04	(0.05)
Midlands			0.03	(0.05)	0.03	(0.05)			0.02	(0.05)	0.02	(0.05)
East South			0.11*	(0.05)	0.12*	(0.05)			0.03	(0.05)	0.04	(0.05)
Wales			0.09	(0.07)	0.11	(0.07)			0.03	(0.07)	0.04	(0.07)
Scotland			0.14*	(0.06)	0.15*	(0.06)			-0.05	(0.06)	-0.04	(0.06)
Northern Ireland			0.07	(0.07)	0.08	(0.07)			0.20**	(0.07)	0.20**	(0.07)
Year dummies												
2010			0.05	(0.05)	0.05	(0.05)			0.07+	(0.04)	0.07+	(0.04)
2011			-0.05	(0.04)	-0.05	(0.04)			0.02	(0.04)	0.02	(0.04)
2012			-0.06	(0.04)	-0.06	(0.04)			0.00	(0.04)	0.00	(0.04)
2013			-0.13**	(0.04)	-0.13**	(0.04)			-0.05	(0.04)	-0.05	(0.04)
2015			-0.01	(0.13)	-0.02	(0.13)			-0.03	(0.10)	-0.03	(0.10)
Job characteristics at t-1												
Wage percentile / 100					0.14**	(0.06)					0.02	(0.05)
Occupation (ref: Managers and Senior Officials												
Professional Occ.					0.06	(0.04)					0.05	(0.04)
Associate Professional and Technical Occ.					-0.04	(0.04)					0.00	(0.04)
Admin. and Secretarial					0.00	(0.05)					0.04	(0.04)
Skilled Trades Occ.s					0.02	(0.04)					0.02	(0.09)
Personal Service Occ.					0.02	(0.07)					0.06	(0.04)
Sales and Customer Service Occ.					-0.14*	(0.07)					0.04	(0.05)
Process Plant and Machine Operatives					-0.06	(0.04)					-0.01	(0.09)
Elementary Occ.					-0.09+	(0.05)					-0.03	(0.05)
Don't know					0.12	(0.18)					0.17	(0.19)
Constant	2.87**	(0.05)	2.19**	(0.21)	2.42**	(0.22)	2.93	(0.04)	2.50**	(0.19)	2.47**	(0.20)
No of Observations	11,434		11,434		11,434		15,554		15,554		15,554	

Note: Standard errors are in parenthesis. + statistically significant at 10%, * statistically significant at 5%, ** statistically significant at 1%

Table 2. Factors influencing life satisfaction, interactions between transition into unemployment and job characteristics (Empirical Specifications: 4-5)

	Men				Women			
	Specification 4		Specification 5		Specification 4		Specification 5	
Life Satisfaction t-1	0.40**	(0.01)	0.39**	(0.01)	0.37**	(0.01)	0.37**	(0.01)
Unemployed	-0.33*	(0.14)	-0.19	(0.18)	-0.43**	(0.13)	-0.12	(0.22)
Wage percentile / 100	0.20**	(0.06)	0.14*	(0.06)	0.00	(0.05)	0.02	(0.05)
Unemployed* wage percentile / 100	-0.01	(0.26)			0.62*	(0.29)		
Occupation (ref.: Managers and Senior Officials)								
Professional Occupations			0.06	(0.04)			0.05	(0.04)
Associate Professional and Technical Occupations			-0.03	(0.04)			0.00	(0.04)
Administrative and Secretarial Occupations			0.00	(0.05)			0.04	(0.04)
Skilled Trades Occupations			0.03	(0.04)			0.01	(0.09)
Personal Service Occupations			0.00	(0.07)			0.07	(0.04)
Sales and Customer Service Occupations			-0.12+	(0.07)			0.04	(0.05)
Process Plant and Machine Operatives			-0.06	(0.04)			0.01	(0.09)
Elementary Occupations			-0.08	(0.05)			-0.02	(0.05)
Don't know			0.13	(0.19)			0.17	(0.19)
Unemployed*Professional Occupations			-0.01	(0.31)			-0.15	(0.36)
Unemployed*Associate Professional and Technical Occupations			-0.27	(0.30)			0.11	(0.33)
Unemployed*Administrative and Secretarial Occupations			0.13	(0.32)			0.06	(0.29)
Unemployed*Skilled Trades Occupations			-0.21	(0.27)			0.98	(0.75)
Unemployed*Personal Service Occupations			0.66+	(0.39)			-0.26	(0.29)
Unemployed*Sales and Customer Service Occupations			-0.70+	(0.38)			0.05	(0.33)
Unemployed*Process Plant and Machine Operatives			-0.06	(0.26)			-0.64	(0.53)
Unemployed*Elementary Occupations			-0.47+	(0.26)			0.03	(0.03)
Unemployed*don't know			-0.37	(0.88)			0.00	.
Number of observations	11,434				15,554			

Note: Standard errors are in parenthesis. + statistically significant at 10%, * statistically significant at 5%, ** statistically significant at 1%. The models control for health status, age, education, marital status, number of children, age of youngest child, logarithm of equivalised gross monthly household income, region of residence and year dummies.

Table 3. Factors influencing life satisfaction, interactions between transition into unemployment and measures of job quality: sector of employment, length of contract, and hours of work (Specifications 6-11)

	Men				Women			
Sector of employment	Specification 6		Specification 7		Specification 6		Specification 7	
Life Satisfaction t-1	0.39**	(0.01)	0.39**	(0.01)	0.37**	(0.01)	0.37**	(0.01)
Unemployed	-0.34**	(0.08)	-0.16	(0.19)	-0.21**	(0.08)	-0.07	(0.16)
Sector of Employment (ref.: public sector)								
Private sector	0.02	(0.03)	0.02	(0.03)	-0.03	(0.02)	-0.02	(0.02)
Other	0.08	(0.07)	0.07	(0.07)	0.03	(0.04)	0.04	(0.04)
Unemployed*private sector			-0.24	(0.21)			-0.17	(0.19)
Unemployed*other			0.20	(0.38)			-0.45	(0.37)
Length of contract	Specification 8		Specification 9		Specification 8		Specification 9	
Life Satisfaction t-1	0.39**	(0.01)	0.39**	(0.01)	0.37**	(0.01)	0.37**	(0.01)
Unemployed	-0.34**	(0.08)	-0.35+	(0.19)	-0.21	(0.08)	-0.16	(0.22)
Length of contract (ref: not permanent)								
Permanent job	0.00	(0.06)	0.00	(0.06)	0.07	(0.05)	0.07	(0.05)
Unemployed*Permanent job			0.02	(0.21)			-0.05	(0.23)
Hours of work	Specification 10		Specification 11		Specification 10		Specification11	
Life Satisfaction t-1	0.39**	(0.01)	0.39**	(0.01)	0.37**	(0.01)	0.37**	(0.01)
Unemployed	-0.34**	(0.08)	-0.53	(0.50)	-0.22**	(0.08)	-0.08	(0.22)
Hours worked (ref.: 0-15)								
16-35 hours	-0.17	(0.11)	-0.19+	(0.12)	-0.05	(0.04)	-0.04	(0.04)
36 hours and above	-0.19+	(0.11)	-0.20+	(0.11)	-0.10*	(0.04)	-0.09*	(0.04)
Unemployed*16-35 hours			0.43	(0.53)			-0.16	(0.25)
Unemployed*36 hours and above			0.15	(0.51)			-0.15	(0.25)
Number of observations	11,434				15,554			

Note: Each set of results come from different specifications. Standard Errors are in parenthesis. + statistically significant at 10%, * statistically significant at 5%, ** statistically significant at 1%. The models control for health status, age, education, marital status, number of children, age of youngest child, logarithm of equivalised gross monthly household income, percentile of usual gross hourly wage rate, occupation, region of residence, and year dummies.

Table 4. Factors influencing life satisfaction, interactions between transition into unemployment and length and type of commute to work (Empirical Specifications: 12-17)

	Men				Women			
Length of commute (dummies)	Specification 12		Specification 13		Specification 12		Specification 13	
Life Satisfaction t-1	0.39**	(0.01)	0.39**	(0.01)	0.37**	(0.01)	0.37**	(0.01)
Unemployed	-0.32**	(0.08)	-0.23	(0.22)	-0.21*	(0.08)	-0.40*	(0.19)
Time spent (ref.: less than 10 min)								
10-20 min	-0.02	(0.04)	-0.02	(0.04)	-0.03	(0.03)	-0.04	(0.03)
20-30 min	0.00	(0.04)	0.01	(0.04)	-0.06+	(0.03)	-0.06+	(0.03)
30m-1hr	-0.02	(0.04)	-0.02	(0.04)	-0.06+	(0.03)	-0.07*	(0.03)
1 hr +	-0.10*	(0.04)	-0.10*	(0.04)	-0.18**	(0.05)	-0.19**	(0.05)
Unemployed*10-20 min			-0.20	(0.26)			0.32	(0.24)
Unemployed*20-30min			-0.30	(0.28)			-0.15	(0.28)
Unemployed*30min-1hr			0.04	(0.26)			0.32	(0.25)
Unemployed*1hr+			0.00	(0.28)			0.26	(0.32)
Length of commuting time	Specification 14		Specification 15		Specification 14		Specification 15	
Life Satisfaction t-1	0.39**	(0.01)	0.39**	(0.01)	0.37**	(0.01)	0.37**	(0.01)
Unemployed	-0.33**	(0.08)	-0.36**	(0.12)	-0.21*	(0.08)	-0.30*	(0.13)
Travel to work time (minutes)	-0.00+	(0.00)	-0.00+	(0.00)	-0.00**	(0.00)	-0.00**	(0.00)
Unemployed* Travel to work time			0.00	(0.00)			0.00	(0.00)
Mode of transport	Specification 16		Specification 17		Specification 16		Specification 17	
Life Satisfaction t-1	0.39**	(0.01)	0.39**	(0.01)	0.37**	(0.01)	0.37**	(0.01)
Unemployed	-0.33**	(0.08)	-0.37**	(0.10)	-0.21*	(0.08)	-0.17	(0.11)
Travel mode (ref.: car, taxi, minicab etc.)								
Public transport	-0.03	(0.04)	-0.03	(0.04)	-0.09*	(0.04)	-0.09*	(0.04)
Walk or cycle	-0.03	(0.03)	-0.04	(0.03)	0.04	(0.03)	0.04	(0.03)
Unemployed*public transport			0.01	(0.21)			0.07	(0.22)
Unemployed*walk or cycle			0.19	(0.20)			-0.25	(0.20)
Number of observations	11,434				15,554			

Note: Each set of results come from different specifications. Standard Errors are in parenthesis. + statistically significant at 10%, * statistically significant at 5%, ** statistically significant at 1%. The models control for health status, age, education, marital status, number of children, age of youngest child, logarithm of equivalised gross monthly household income, percentile of usual gross hourly wage rate, occupation, region of residence, and year dummies.

Table 5. Factors influencing life satisfaction, interactions between transition into unemployment and personality type (Empirical Specifications: 18-19)

	Men				Women			
	Specification 18		Specification 19		Specification 18		Specification 19	
Life Satisfaction t-1	0.36**	(0.01)	0.36**	(0.01)	0.34**	(0.01)	0.34**	(0.01)
Unemployed	-0.32**	(0.08)	-0.10	(0.64)	-0.20*	(0.08)	-0.81	(0.67)
Personality traits								
Openness	0.00	(0.01)	0.00	(0.01)	-0.01	(0.01)	-0.01	(0.01)
Conscientiousness	0.02+	(0.01)	0.03*	(0.01)	0.07**	(0.01)	0.06**	(0.01)
Extraversion	0.05**	(0.01)	0.05**	(0.01)	0.02*	(0.01)	0.02*	(0.01)
Agreeableness	0.05**	(0.01)	0.05**	(0.01)	0.03**	(0.01)	0.03**	(0.01)
Neuroticism	-0.12**	(0.01)	-0.11**	(0.01)	-0.11**	(0.01)	-0.11**	(0.01)
Unemployed* Openness			0.05	(0.06)			-0.05	(0.07)
Unemployed* Conscientiousness			-0.09	(0.07)			0.12	(0.08)
Unemployed* Extraversion			-0.04	(0.06)			0.06	(0.06)
Unemployed* Agreeableness			0.10	(0.07)			0.02	(0.09)
Unemployed* Neuroticism			-0.09	(0.06)			-0.05	(0.06)
Number of Observations	11,433		11,433		15,554		15,554	

Note: Standard Errors are in parenthesis. + statistically significant at 10%, * statistically significant at 5%, ** statistically significant at 1%. The models control for health status, age, education, marital status, number of children, age of youngest child, Logarithm of equivalised gross monthly household income, percentile of usual gross hourly wage rate, occupation, region of residence, and year dummies.

Table 6. Factors influencing life satisfaction, interactions between transition into unemployment and work identity (Empirical Specifications: 20-21)

	Men				Women			
	Specification 20		Specification 21		Specification 20		Specification 21	
Life Satisfaction t-1	0.39**	(0.01)	0.39**	(0.01)	0.37**	(0.01)	0.37**	(0.01)
Unemployed	-0.33**	(0.08)	-0.51**	(0.12)	-0.21*	(0.08)	-0.06	(0.13)
Strong Work Identity	0.08**	(0.03)	0.07**	(0.03)	0.04+	(0.02)	0.05+	(0.03)
Unemployed*Strong work identity			0.30*	(0.15)			-0.25	(0.17)
Number of Observations	11,434		11,434		15,554		15,554	

Note: Standard Errors are in parenthesis. + statistically significant at 10%, * statistically significant at 5%, ** statistically significant at 1%. The models control for health status, age, education, marital status, number of children, age of youngest child, Logarithm of equivalised gross monthly household income, percentile of usual gross hourly wage rate, occupation, region of residence, and year dummies.

Table 7. Factors influencing life satisfaction, interactions between transition into unemployment and gender attitudes (Empirical Specifications: 22-23)

	Men				Women			
	Specification 22		Specification 23		Specification 22		Specification 23	
Life Satisfaction t-1	0.39**	(0.01)	0.39**	(0.01)	0.37**	(0.01)	0.37**	(0.01)
Unemployed	-0.34**	(0.08)	-0.33**	(0.08)	-0.21*	(0.08)	-0.18*	(0.08)
Gender attitude	0.06**	(0.01)	0.06**	(0.01)	0.06**	(0.01)	0.07**	(0.01)
Unemployed*gender attitudes			-0.13	(0.09)			-0.26**	(0.10)
Number of observations	11,434		11,434		15,554		15,554	

Note: Standard Errors are in parenthesis. + statistically significant at 10%, * statistically significant at 5%, ** statistically significant at 1%.The models control for health status, age, education, marital status, number of children, age of youngest child, Logarithm of equivalised gross monthly household income, percentile of usual gross hourly wage rate, occupation, region of residence, and year dummies.

Table 8a. Factors influencing life satisfaction, interactions between a transition into unemployment and gender attitudes by parenthood status

	Men				Women			
	Non-parents		Parents		Non-parents		Parents	
Life Satisfaction t-1	0.40**	(0.01)	0.38**	(0.01)	0.39**	(0.01)	0.34**	(0.01)
Unemployed	-0.42**	(0.10)	-0.22+	(0.13)	-0.28*	(0.11)	0.01	(0.13)
Gender attitude	0.08**	(0.02)	0.03	(0.02)	0.07**	(0.02)	0.07**	(0.02)
Unemployed*gender attitudes	-0.23*	(0.12)	0.04	(0.15)	-0.12	(0.13)	-0.47**	(0.15)
Number of observations	6,509		4,925		8,568		9,075	

Note: Standard Errors are in parenthesis. + statistically significant at 10%, * statistically significant at 5%, ** statistically significant at 1%.The models control for health status, age, education, marital status, number of children, age of youngest child, Logarithm of equivalised gross monthly household income, percentile of usual gross hourly wage rate, occupation, region of residence, and year dummies.

Table 8b. Factors influencing life satisfaction, interactions between a transition into unemployment and gender attitudes by partnership status

	Men				Women			
	Single		Couple		Single		Couple	
Life Satisfaction t-1	0.39**	(0.02)	0.39**	(0.01)	0.38**	(0.01)	0.36**	(0.01)
Unemployed	-0.46**	(0.14)	-0.27**	(0.10)	-0.13	(0.11)	-0.22*	(0.11)
Gender attitude	0.07+	(0.03)	0.05**	(0.02)	0.12**	(0.02)	0.05**	(0.01)
Unemployed*gender attitudes	-0.20	(0.17)	-0.09	(0.11)	-0.25	(0.17)	-0.28*	(0.12)
Number of observations	2,428		9,006		4,496		11,058	

Note: Standard Errors are in parenthesis. + statistically significant at 10%, * statistically significant at 5%, ** statistically significant at 1%.The models control for health status, age, education, marital status, number of children, age of youngest child, Logarithm of equivalised gross monthly household income, percentile of usual gross hourly wage rate, occupation, region of residence, and year dummies.

Online Appendix

Table A1. Descriptive Statistics for the control variables

	Men		Women	
	Employed	Unemployed	Employed	Unemployed
Life satisfaction	5.18	4.57	5.18	4.61
Life Satisfaction t-1	5.24	4.99	5.25	4.83
Health Status				
Excellent/very good	59.85	43.97	61.48	46.03
Good/fair	38.57	53.70	36.78	48.54
Poor	1.58	2.33	1.74	5.44
Presence of long-term illness/disability				
Yes	24.10	27.63	26.63	30.96
No	75.90	72.37	73.37	69.04
Age group				
20 - 29	13.84	21.79	12.90	22.18
30-39	25.65	20.23	22.44	20.08
40 – 49	33.10	27.24	33.86	29.29
50- 59	27.40	30.74	30.81	28.45
Marital Status				
Never married/single	15.11	29.18	15.04	30.13
Cohabiting	18.32	24.90	15.25	16.74
Married/Civil partnership	60.82	37.35	56.08	39.75
Separated/widowed/divorced	5.74	8.56	13.63	13.39
Presence/number of children				
No children	44.95	54.86	40.09	46.44
1 child	20.48	15.18	24.96	23.01
2 or more children	34.57	29.96	34.95	30.54
Age of youngest child				
0-4 years old	18.41	19.07	11.54	13.39
5-11 years old	15.46	8.17	16.96	19.25
12-16 years old	9.37	8.56	13.20	6.28
16 or older	11.81	9.34	18.21	14.64
Household income	7.73	6.73	7.64	6.82
Educational qualifications				
Has a degree	30.67	20.23	30.94	20.50
Has other higher degree	12.98	11.67	16.95	10.04
A-level	24.74	19.46	20.27	23.43
GCSE	21.39	33.07	22.63	29.71
Other qualifications	7.01	8.17	5.84	10.04
No qualifications	3.20	7.39	3.36	6.28
Region of Residence				
London	6.16	5.06	4.37	7.11
North	25.38	27.24	26.23	33.05
Midlands	16.68	19.07	17.63	13.81
East South	34.90	31.91	34.17	29.71

Wales	4.97	7.39	4.94	6.28
Scotland	7.95	5.84	8.77	6.28
Northern Ireland	3.95	3.50	3.89	3.77
Years				
2010	12.43	15.56	12.38	9.62
2011	26.00	28.40	25.93	35.15
2012	26.51	30.74	25.99	26.78
2013	22.46	15.95	23.06	17.57
2014	11.78	7.78	11.60	10.46
2015	0.82	1.56	1.03	0.42
Number of observations	11,177	257	15,315	239

Note: All in percentages except the life satisfaction and life satisfaction t-1 which are presented in means.

Table A2. Descriptive Statistics for the Job Characteristics

	Men		Women	
	Employed	Unemployed	Employed	Unemployed
Percentile of hourly wage	61.89	44.02	48.96	33.71
Occupation				
Managers and Senior Officials	21.45	17.12	12.28	13.39
Professional Occupations	15.35	8.56	13.84	7.95
Associate Professional and Technical Occupations	15.93	10.12	18.99	10.46
Administrative and Secretarial Occupations	6.63	7.78	18.31	17.15
Skilled Trades Occupations	12.58	13.62	1.58	1.26
Personal Service Occupations	2.96	4.67	16.06	18.41
Sales and Customer Service Occupations	3.57	5.06	8.89	11.30
Process Plant and Machine Operatives	11.66	15.56	1.48	2.93
Elementary Occupations	9.49	16.73	8.28	17.15
Do not know	0.38	0.78	0.28	0.00
Sector of Employment				
Public	25.89	15.18	44.84	24.69
Private	70.89	79.38	49.36	69.46
Other	3.22	5.45	5.80	5.86
Do not have a permanent job	3.33	16.73	4.64	14.64
Have a permanent job	96.67	83.27	95.36	85.36
Total number of hours worked per week				
0-15 hours	1.07	2.33	7.01	13.81
16-35 hours |	9.15	17.90	43.92	44.35
36 hours or above	89.77	79.77	49.07	41.84
Time spent in commuting to work				
Less than 10 minutes	15.16	12.06	17.86	17.99
10-20 minutes	25.20	25.68	30.73	34.31
20-30 minutes	19.20	17.12	20.05	15.06
30 minutes - 1hour	27.92	27.63	24.25	23.01
More than an hour	12.52	17.51	7.11	9.62
Travel to work time (minutes)	28.37	30.21	22.88	23.94
Travel mode to work				
Car etc.	74.35	64.98	73.69	60.25
Public Transport	10.75	16.34	9.40	17.99
Walk or cycle	14.91	18.68	16.92	21.76
Number of observations	11,177	257	15,315	239

Note: All in percentages except the log hourly wage and Travel to work time which are presented in means.

Table A3. Descriptive Statistics for the Attitudinal Moderators

	Men		Women	
	Employed	Unemployed	Employed	Unemployed
Gender attitudes	0.09	0.05	0.26	0.13
	(0.84)	(0.81)	(0.83)	(0.84)
Work Identity				
Do not have strong work identity	26.32	40.08	23.13	38.49
Have strong work identity	73.68	59.92	76.87	61.51
Personality Traits				
Openness to experience	4.67	4.59	4.44	4.52
	(1.18)	(1.24)	(1.23)	(1.24)
Conscientiousness	5.47	5.32	5.75	5.46
	(1.00)	(1.07)	(0.95)	(1.07)
Extraversion	4.47	4.31	4.78	4.79
	(1.25)	(1.31)	(1.26)	(1.35)
Agreeableness	5.40	5.24	5.78	5.77
	(1.02)	(1.13)	(0.94)	(0.96)
Neuroticism	3.31	3.54	3.83	4.04
	(1.32)	(1.41)	(1.36)	(1.37)
Number of observations	11,177	257	15,315	239

Note: Mean values for gender attitudes and personality traits, standard deviations for continuous variables are in parenthesis. Descriptive statistics for work identity are shown in percentages.

Table A4. Factors influencing life satisfaction, interactions between transition into unemployment and job satisfaction (with and without controlling for last wave's life satisfaction)

	Men				Women			
Life Satisfaction t-1	0.36**	(0.01)			0.36**	(0.01)		
Unemployed	0.07	(0.22)	0.07	(0.24)	0.18	(0.25)	0.12	(0.27)
Job satisfaction	0.10**	(0.01)	0.19**	(0.01)	0.06**	(0.01)	0.13**	(0.01)
Unemployed*Job satisfaction	-0.08+	(0.04)	-0.07	(0.05)	-0.08	(0.05)	-0.07	(0.05)
Constant	2.09**	(0.22)	3.14**	(0.23)	2.17**	(0.20)	3.32**	(0.21)
Number of Observations	11,426		11,426		15,541		15,541	

Note: Standard Errors are in parenthesis. + statistically significant at 10%, * statistically significant at 5%, ** statistically significant at 1%. The models control for health status, age, education, marital status, number of children, age of youngest child, Logarithm of equivalised gross monthly household income, percentile of usual gross hourly wage rate, occupation, region of residence, and year dummies.

Table A5. Factors influencing life satisfaction, interactions between transition into unemployment with conscientiousness only

	Men		Women	
Life Satisfaction t-1	0.39**	(0.01)	0.37**	(0.01)
Unemployed	-0.22	(0.38)	-0.88*	(0.42)
Conscientiousness	0.07**	(0.01)	0.09**	(0.01)
Unemployed* Conscientiousness	-0.02	(0.07)	0.12	(0.08)
Constant	2.10**	(0.23)	2.03**	(0.21)
Number of Observations	11,434		15,554	

Note: Standard Errors are in parenthesis. + statistically significant at 10%, * statistically significant at 5%, ** statistically significant at 1%. The models control for health status, age, education, marital status, number of children, age of youngest child, Logarithm of equivalised gross monthly household income, percentile of usual gross hourly wage rate, occupation, region of residence, and year dummies.

Table A6. Factors influencing life satisfaction, interactions between transition into unemployment and work identity, with personality types

	Men				Women			
Life Satisfaction t-1	0.36**	(0.01)	0.36**	(0.01)	0.34**	(0.01)	0.34**	(0.01)
Unemployed	-0.32**	(0.08)	-0.48**	(0.12)	-0.20*	(0.08)	-0.04	(0.13)
Strong Work Identity	0.05+	(0.03)	0.04	(0.03)	0.01	(0.02)	0.01	(0.02)
Unemployed*Strong work identity			0.27+	(0.15)			-0.26	(0.16)
Personality traits								
Openness	0	(0.01)	0	(0.01)	-0.01	(0.01)	-0.01	(0.01)
Conscientiousness	0.02+	(0.01)	0.02+	(0.01)	0.07**	(0.01)	0.07**	(0.01)
Extraversion	0.05**	(0.01)	0.05**	(0.01)	0.02*	(0.01)	0.02*	(0.01)
Agreeableness	0.05**	(0.01)	0.05**	(0.01)	0.03**	(0.01)	0.03**	(0.01)
Neuroticism	-0.12**	(0.01)	-0.12**	(0.01)	-0.11**	(0.01)	-0.11**	(0.01)
Constant	2.52**	(0.24)	2.50**	(0.24)	2.55**	(0.22)	2.54**	(0.22)
Number of Observations	11,433		11,434		15,554		15,554	

Note: Standard Errors are in parenthesis. + statistically significant at 10%, * statistically significant at 5%, ** statistically significant at 1%. The models control for health status, age, education, marital status, number of children, age of youngest child, Logarithm of equivalised gross monthly household income, percentile of usual gross hourly wage rate, occupation, region of residence, and year dummies.

Table A7. Factors influencing life satisfaction, interactions between transition into unemployment and work identity amongst SOC 1-3

	Men		Women	
Life Satisfaction t-1	0.39**	(0.01)	0.39**	(0.01)
Unemployed	-0.45+	(0.24)	0.12	(0.25)
Strong Work Identity	0.07+	(0.04)	0.05	(0.04)
Unemployed*Strong work identity	0.21	(0.28)	-0.34	(0.29)
Constant	2.65**	(0.29)	2.50**	(0.28)
Number of Observations	5,986		6,986	

Note: Standard Errors are in parenthesis. + statistically significant at 10%, * statistically significant at 5%, ** statistically significant at 1%. The models control for health status, age, education, marital status, number of children, age of youngest child, Logarithm of equivalised gross monthly household income, percentile of usual gross hourly wage rate, region of residence, and year dummies.

Table A8. Factors influencing life satisfaction, interactions between transition into unemployment and work identity amongst SOC 4-9

	Men		Women	
Life Satisfaction t-1	0.40**	(0.01)	0.36**	(0.01)
Unemployed	-0.50**	(0.14)	-0.11	(0.16)
Strong Work Identity	0.09*	(0.04)	0.06+	(0.03)
Unemployed*Strong work identity	0.32+	(0.20)	-0.24	(0.21)
Constant	1.88**	(0.33)	2.33**	(0.27)
Number of Observations	5,448		8,568	

Note: Standard Errors are in parenthesis. + statistically significant at 10%, * statistically significant at 5%, ** statistically significant at 1%. The models control for health status, age, education, marital status, number of children, age of youngest child, Logarithm of equivalised gross monthly household income, percentile of usual gross hourly wage rate, region of residence, and year dummies.

Table A9. Factors influencing life satisfaction, interactions between transition into unemployment and work identity, by reason for the transition into unemployment – allowing for different effects for those who left a job voluntarily and those who were sacked or made redundant

	Men		Women	
Life Satisfaction t-1	0.39**	(0.01)	0.37**	(0.01)
Voluntarily unemployed	-0.52*	(0.22)	-0.03	(0.19)
Involuntarily unemployed	-0.51**	(0.14)	-0.08	(0.18)
Strong Work Identity	0.07**	(0.03)	0.05+	(0.03)
Voluntarily unemployed*Strong work identity	0.23	(0.29)	-0.21	(0.25)
Involuntarily unemployed*Strong work identity	0.32+	(0.18)	-0.27	(0.22)
Constant	2.36**	(0.22)	2.44**	(0.02)
Number of Observations	11,434		15,554	

Note: Standard Errors are in parenthesis. + statistically significant at 10%, * statistically significant at 5%, ** statistically significant at 1%. The models control for health status, age, education, marital status, number of children, age of youngest child, Logarithm of equivalised gross monthly household income, percentile of usual gross hourly wage rate, occupation, region of residence, and year dummies.

Table A10. Factors influencing life satisfaction, interactions between transition into unemployment and work identity, (excluding wave 2)

	Men		Women	
Life Satisfaction t-1	0.39**	(0.01)	0.37**	(0.01)
Unemployed	-0.47**	(0.15)	-0.12	(0.17)
Strong Work Identity	0.05+	(0.03)	0.03	(0.03)
Unemployed*Strong work identity	0.34+	(0.19)	-0.01	(0.20)
Constant	2.34**	(0.27)	2.39**	(0.24)
Number of observations	8,581		11,654	

Note: Standard Errors are in parenthesis. + statistically significant at 10%, * statistically significant at 5%, ** statistically significant at 1%. The models control for health status, age, education, marital status, number of children, age of youngest child, Logarithm of equivalised gross monthly household income, percentile of usual gross hourly wage rate, occupation, region of residence, and year dummies.