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Abstract: This article tests for social-norm effects in labour market status. We extend previous research which has examined the relationship between aggregate unemployment and well-being as a mechanism for uncovering social-norm effects, by using a more spatially disaggregated (neighbourhood as opposed to regional) measure of unemployment. Our fixed effects regression results indicate that while unemployment hurts, it hurts much less when individuals live in neighbourhoods where the prevailing rate of unemployment is high. In keeping with the social-norm hypothesis, we also find that unemployment hurts less when individuals think of themselves as being similar to their neighbours.

Keywords: social norms, unemployment, well-being

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Abstract: This article tests for social-norm effects in labour market status. We extend previous research which has examined the relationship between aggregate unemployment and well-being as a mechanism for uncovering social-norm effects, by using a more spatially disaggregated (neighbourhood as opposed to regional) measure of unemployment. Our fixed effects regression results indicate that while unemployment hurts, it hurts much less when individuals live in neighbourhoods where the prevailing rate of unemployment is high. In keeping with the social-norm hypothesis, we also find that unemployment hurts less when individuals think of themselves as being similar to their neighbours.

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1. Introduction

Much previous research has documented a large negative effect of unemployment on subjective well-being (Clark and Oswald, 1994; Blanchflower and Oswald, 2004; Winkelmann and Winkelmann, 1998; Winkelman, 2014 Helliwell and Huang, 2014). Moreover, this loss in subjective well-being from unemployment is substantial as, for instance, being unemployed is typically associated with a larger well-being reduction than marital separation or widowhood (Clark and Oswald, 1994). Commonly identified mechanisms behind the loss in well-being associated with unemployment include a loss of economic identity and a sense of insecurity and personal failure (Winkelman, 2014). While a number of papers have demonstrated that unemployment takes a heavy toll on subjective well-being, there is also an emerging literature on the effect of aggregate unemployment on the well-being of the unemployed. This work seeks to examine if the disutility experienced from unemployment is less in regions with high, as opposed to low, levels of unemployment. Findings of smaller utility gaps between the employed and unemployed in areas where aggregate unemployment rates are high has been posited as evidence of a 'social-norm effect'. The intuition here is that as more people become unemployed, one's own unemployment is less of a deviation from the social norm towards work (Clark et al. 2010). This leads to a smaller loss in well-being from being unemployed in areas with high overall rates of unemployment, because the stigma associated with joblessness is weaker. Under this interpretation, unemployment can become 'a way of life' that people get used to and this, in turn, has been offered up as one explanation for unemployment persistence or hysteresis (Oesch and Lipps, 2012).

The empirical evidence relating to the presence of social-norm effects in the labour market is, however, mixed and often contradictory. Early evidence for the social-norm hypothesis comes from Clark and Oswald (1994) who found that regions with the highest rate of joblessness had smaller utility gaps between those who were unemployed and employed. Whilst the analysis by Clark and Oswald was based on one wave of the British Household Panel Survey (BHPS), Clark (2003) revealed similar findings using 7 waves of the BHPS, namely that the unemployed's well-being is strongly

positively correlated with regional unemployment rates[1] or in other words, the utility gap between employed and unemployed persons is less in regions with high rates of unemployment. Using the German Socio-Economic Panel, Clark et al. (2010) found that aggregate unemployment reduces the well-being of unemployed men which is consistent with their results using the BHPS, but they observed no clear relationship for women. They also presented evidence that the appropriate distinction may not be between employment and unemployment, but rather between higher and lower levels of labour market security. Powdthavee (2007) found similar findings as to that reported by Clark (2003), but using a different data set, namely the South African Labour and Development Research Unit.

Whilst this research points to the presence of social-norm effects in the labour market, some more recent research has emerged which draws very different conclusions to the research described above. Specifically, this research questions the notion that unemployment hurts individuals less when there is more of it around (Oesch and Lipps, 2012; Chadi 2014). For instance, Chadi (2014) using the German Socio-Economic Panel found that higher regional unemployment is significantly correlated with *lower* not higher levels of subjective well-being for the unemployed. They describe one potential reason why they observed a negative interaction effect between unemployment and aggregate unemployment levels in contrast to the findings by Clark et al. (2010), which used the same dataset as their own, is that they applied a differentiated model which took into account the general disparity between East and West Germany. They suggest that the 'enormous' disparity between East and West that persist both socially and empirically means that it is necessary to conduct a differentiated analysis when seeking to uncover social norm effects in employment. They also note that the positive interaction effect observed by Clark et al. (2010) can only be observed when women are dropped from the sample which they argue is unjustified on theoretical grounds[2]. Oesch and Lipps (2011) uses both the German Socio-Economic as well as the Swiss Household Panel and also found no evidence for habituation, i.e. unemployment hurts as much, if not more so, when regional unemployment rates are high as when they are low. Both Chadi (2014) and Oesch and Lipps (2011) note that while researchers have focused on the role of aggregate unemployment attenuating the harmful effect of unemployment on well-being, one could also suggest that high unemployment rates have a particularly negative impact on the well-being of unemployed people, because the fewer the jobs that are available, the bleaker the labour market conditions are for the

[1] Clark (2003) also showed that the unemployed's well-being was strongly positively correlated with reference group unemployment at the partner and household level

[2] While not commentated on in the study by Clark one could argue that finding that men are more negatively affected by unemployment than women could be viewed as evidence of a social-norm effect, in particular in more traditional orientated communities where men are seen as the breadwinners (Winkelman, 2014)

unemployed. They argue that their studies in turn suggest that if indeed there are any social-norm effects, these effects are outweighed by the reduced job prospects available to unemployed people in regions with high rates of joblessness.

While the research described above has made a significant contribution to the literature relating to social-norm effects, one limitation and potential explanation for contradictory findings is that when looking at the effect of aggregate unemployment rates, their analysis is constrained to the regional level. There are 12 and 16 spatially defined regions within the UK and Germany and one may conjecture that the relevant comparison group for individuals may be much more narrowly defined than the regional level. For instance, there is likely to be significant differences in unemployment not just between, but also within regions. It is also possible that when focusing on the regional level, there may be confounding variables also linked to regional unemployment levels, thus confounding regional differences with social-norm effects.

In this paper, we attempt to shed some more light on the social-norm effect of unemployment by using a much more spatially disaggregated measure of aggregate unemployment than regional unemployment rates. More specifically, we spatially link data from the UK Household Longitudinal Study (UKHLS) (a comprehensive household survey recording individual well-being) with a measure of employment deprivation in 32,482 small areas or neighbourhoods, in England. Using this measure of unemployment provides a much more spatially disaggregated and relevant comparison group (neighbourhood as opposed to regional) for individuals than just focusing on regional differences in rates of unemployment. We then test if the disutility loss experienced from unemployment is less when individuals live in neighbourhoods with high rates of unemployment.

The key well-being indicator used in the analysis is responses to the GHQ-12. This is perhaps the most common well-being indicator used in the literature in this area. As a useful sensitivity check, we also conduct this analysis using an alternative metric of subjective well-being, namely self-reported happiness. In addition to cross sectional results, we take advantage of the panel nature of the UKLS by running individual fixed effects, thereby controlling for time invariant unobserved heterogeneity (e.g. personality traits). Using both measures of well-being, and across a number of specifications, we find that the well-being gap between unemployed and employed individuals is less in neighbourhoods with relatively high rates of unemployment. In other words, unemployment hurts, but it hurts much less when the prevailing neighbourhood unemployment rate is high, which supports the hypothesis of social-norm effects in labour market status.

An additional novel feature of this study is that we examine if the well-being effects from unemployment are moderated by the extent to which individuals think of themselves as 'being similar to people that live in their neighbourhood'. There is a wide literature documenting how one of the mechanisms behind residential sorting is that individuals prefer to live close to people they see as similar to themselves (see Mare et al., 2012). In keeping with this literature, we find a positive association between our variable measuring the extent to which respondents think of themselves as being similar to their neighbours and our indicators of well-being. We also observe a significant interaction effect between this variable and unemployment, i.e. unemployment hurts less when individuals think of themselves as being similar to their neighbours. Taken together, these results supports the social-norm hypothesis, i.e. the disutility from unemployment partly depends on how much an individual conforms to or deviates from the prevailing norm toward work, in this instance captured by the employment status of neighbours and how similar individuals think they are to their neighbours.

2. Data

The dataset used in this analysis is Understanding Society: the UK household longitudinal study (UKLS). This is a comprehensive household survey that started in 2009 with a nationally-representative stratified, clustered sample of around 50,000 adults (16+) living in the United Kingdom. It uses an overlapping panel design with data collection for a single wave conducted across 24 months. Interviews are typically carried out face-to-face in respondents' homes by trained interviewers. The indicator of psychological well-being we use is the Generalised Health Questionnaire (GHQ) which consists of a 12 item scale designed to assess somatic symptoms, anxiety and insomnia, social dysfunction and severe depression (Jackson, 2007). Some examples of the types of statements include: 'Have you found everything getting on top of you?'; 'Have you been getting scared or panicky for no good reason?' and 'Have you been getting edgy and bad tempered?' Each item is accompanied by four possible responses, typically being 'not at all', 'no more than usual', 'rather more than usual' and 'much more than usual'. A score ranging from 0 (best mental well-being) to 36 (worst mental well-being) for each participant is then computed – the higher the score then the more likely it is that respondents are suffering from some form of psychological distress. For simplicity, I reorder this variable so that individuals are scored from 0 (worst mental well-being) to 36 (best mental well-being) and label this variable as psychological well-being. An additional indicator of well-being used in this study is self-reported happiness which like the GHQ-12 is recorded across all waves of the UKLS. To measure happiness, respondents were given a four point scale ranging from 1 more so than usual to 4 much less than usual and asked to rate their general

happiness. This measure can be seen as a combination of how people experience the quality of their lives (evaluative) and affect (moods and emotions). Again for ease of use, we reversed this scale so that higher numbers reflected more as opposed to less happiness.

Based on prior research, we include a rich set of commonly observed predictors of psychological well-being as control variables (see Dolan, 2008 for a review of this literature). These include socio-economic variables such as age, gender, relationship status, health, number of children, education and labour force status. We include household income in its natural logarithm which reflects the diminishing marginal utility of income (see Layard et al., 2008). We also controlled for the square root of household size to make a real equivalent household income variable, i.e. make household income comparable across different household compositions. Finally we supplement these variables with a full set of regional controls to capture any differences in labour market policies or other sources of heterogeneity that is time-invariant at the regional level[3].

ii) Neighbourhood unemployment

The measure of neighbourhood unemployment we use is an employment deprivation index produced by the Department for Communities and Local Government. The Employment Deprivation Index released in 2015 measures the proportion of the working age population in 32,482 small areas or neighbourhoods, called Lower Super Output Areas (LSOAs), in England, involuntarily excluded from the labour market[4]. This includes people who would like to work but are unable to do so due to unemployment, sickness or disability, or caring responsibilities. Lower Super Output Areas are small areas designed to be of a similar population size, with an average of approximately 1,500 residents. The Employment Deprivation index ranks every neighbourhood (LSOA) in England from 1 (most deprived area) to 32,844 (least deprived area). Therefore, LSOAs with a bigger index score have a higher percentage of working age adults in the neighbourhood unemployed than neighbourhoods with a lower score. For ease of use, hereafter we refer to this variable as *employment deprivation*. As the UKHLS is geo-referenced at the LSOA level, we are able to match each individual in this survey with this index of employment deprivation, thereby obtaining an estimate of the prevailing rate of unemployment in individuals neighbourhoods. By using this measure of unemployment, we are defining the reference group at the neighbourhood as opposed

[3] They are 9 regions in England (12 in the UK as a whole) and they define areas (constituencies) for the purposes of elections to the European Parliament and Eurostat also uses them as Territorial units for statistical purposes. The 9 regions in England are South East, London, North West, East of England, West Midlands, South West, Yorkshire and the Humber, East Midlands, North East.

[4] https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/464597/English_Indices_of_Deprivation_2015_-_Research_Report.pdf

to regional level and this, in turn, should be a much more relevant comparison group for individuals than aggregate unemployment at the regional level.

ii) Perception of neighbours

In waves 1 and 3 of the UKHLS, there was an additional question added to the main stage questionnaire which asked respondents to indicate on a scale from 1 (strongly agree) to 5 (strongly disagree), whether they '*think of themselves as similar to people that live in their neighbourhood'*. For ease of use, we reorder this scale to go from 1 strongly disagree to 5 strongly agree – i.e. higher numbers represent individuals who think of themselves as being similar to other people that live in their neighbourhood and label this variable as *perception of neighbours*. Using this measure, we are again defining the reference group for individuals at the neighbourhood level, albeit this time it is respondents own subjective evaluation of their neighbours. We hypothesise that the disutility experienced from unemployed will be reduced when individuals 'think of themselves as being similar to their neighbours', via the social-norm effect.

3. Analysis

The analysis begins by assuming that well-being (W) is explained by a vector of socio-economic and demographic characteristics (X), unemployment (U) and neighbourhood unemployment levels (NU). This yields the following explanatory model where *a* is the individual fixed effect and r is a set of regional dummy variables:

$$W = a_0 + \beta_1 X + \beta_2 U + \beta_3 NE + \beta_4 (U * NU) + r + \varepsilon$$

Support for the hypothesis of social norm effects can be obtained when the interaction between the latter two disutility determinants (U*NU) is positive, which would suggest that higher neighbourhood unemployment rates implies less disutility from being unemployed.

Following the same procedure, albeit this time we are unable to use fixed effects as *perception of neighbours* is recorded in only 2 waves of the UKLS, we can test if respondents own perceptions as to how similar they think they are to their neighbours affect the disutility levels from being unemployed.

$$W = \beta_1 X + \beta_2 U + \beta_3 NE + \beta_4 P + \beta_5 (U * P) + r + \varepsilon$$

In this specification, well-being (W) is again a function of a vector of socio-economic and demographic characteristics (X), unemployment (U), neighbourhood unemployment levels (NE), but this time we add in perception of neighbours (P) as an additional explanatory variable. Support for the hypothesis of social-norm effects can be obtained if the interaction between unemployment (U) and perception of neighbours (P) is positive which would suggest that respondents who think of

themselves as being similar to their neighbours are less affected by being unemployed than respondents who think of themselves as being more dissimilar.

4. Results

i) Social norms at the neighbourhood level

Panel 1 of table 1 presents the basic pooled cross sectional well-being regression results using the generalised health questionnaire (GHQ) as our outcome variable. The results relating to the broad array of control variables do not contain any surprising results. The key explanatory variables of interest are the dummy variable *unemployment,* which represents the difference in psychological well-being between those that are unemployed as compared to those in full time employment, and *employment deprivation* which provides a measure of the prevailing levels of unemployment in respondent's neighbourhoods. Looking first at unemployment, it is as expected, statistically significant and negative. If this equation captured a causal effect then the effect of unemployment on psychological well-being, in comparison to many other factors associated with well-being, is quantitatively large. For instance, unemployed individuals experience a lower psychological well-being score of -1.9 in comparison to those that are in full time employment, whereas the difference in psychological well-being between those that are separated in comparison to those that are single comes to -0.25. Individuals who are married have a higher score of 0.35 in comparison to those that are single. Looking at the remaining control variables, we can see that with the exception of health status, unemployment has a more substantive relationship with psychological well-being than any other explanatory variable used in the regression analysis. Second, employment deprivation enters our psychological well-being equation negative and statistically significant, suggesting that individuals who live in neighbourhoods with high levels of unemployment are likely to have lower well-being scores than individuals who live in neighbourhoods with relatively lower levels of unemployment.

To test the significance of social-norms at the neighbourhood level, we interact our unemployment indicator with the variable employment deprivation. The coefficient on the resulting interaction variable (see the bottom of table 1 (panel 1)) attracts a strongly positive and significant coefficient, whereas the main relationship between employment deprivation and psychological well-being is negative and statistically significant. This result, therefore, suggests that the utility gap between unemployed and employed individuals may be less in neighbourhoods with high levels of unemployment.

Notwithstanding the inclusion of regional dummies, which should help control for any differences in labour market policies across regions, one may still be concerned that there are other sources of unobserved heterogeneity affecting the model estimates (e.g. personality traits). To address this concern, we take advantage of the panel nature of the dataset by using individual fixed effects (five waves of data). These results can be seen in panel 2 of table 1. The relationship between unemployment and psychological well-being and also between employment deprivation and psychological well-being are similar to that observed in our pooled cross sectional model. The coefficient representing the interaction between unemployment and employment deprivation is also statistically significant and positive and again is not substantively different to that reported in our pooled cross sectional analysis.

Figure 1 graphically illustrates this interaction effect. We can see that the gap in psychological well-being between the unemployed and the employed narrows, as unemployment in the neighbourhood increases (i.e. as the employment deprivation index rises). This is due to the differential effect on psychological well-being of living in neighbourhoods with high rates of unemployment for these two groups. For the employed, increases in the neighbourhood unemployment rate is negatively associated with psychological well-being. On the other hand, the psychological well-being of the unemployed actually improves as the neighbourhood unemployment rate rises. In addition to being statistically significant, as best illustrated in figure 1, the role of employment deprivation in moderating the disutility experienced from unemployment appears to be substantive.

ii) The role of subjective perceptions of neighbours

Next we examine if respondents own subjective perceptions relating to how they generally see themselves in comparison to their neighbours affects the extent to which they experience disutility from being unemployed. These results can be seen in table 2. Like the results in table 1, the results relating to the control variables (including unemployment) were all along expected lines. The variable *perception of neighbours* enters positively and statistically significant, which suggests that respondents who think of themselves as being similar to their neighbours are likely to have higher well-being scores than respondents who do not. This finding can be viewed in the context of the wide literature examining the residential sorting of individuals across neighbourhoods. For instance, there is much evidence to support the idea that individuals prefer to live close to people that they view as relatively similar to themselves and separate from people who they see as different (Mare et al., 2012). We can see here the potential subjective well-being effects from such sorting behaviour.

The interaction between unemployment and perception of neighbours is statistically significant and positive which suggests that the disutility experienced from being unemployed is less when you think of yourself as being relatively similar to your neighbours. This interaction effect is illustrated in figure 2. While we can see that there is a significant gap in the psychological well-being of unemployed and employed persons, this gap narrows the more respondent's think of themselves as being similar to their neighbours. The gap narrows as while thinking of oneself as being similar to their neighbours is positively associated with psychological well-being for both unemployed and employed persons, it appears to be more beneficial for those who are unemployed.

iii) Gender differences

Some recent research points to potential gender differentials when it comes to the well-being effects of aggregate measures of regional unemployment. Specifically Clark (2003) using the BHPS observed that regional unemployment affects the well-being of men more strongly than women and Clark et al. (2010) using the German Socio-Economic Panel found that, similar to their results using the BHPS, both employed and unemployed men are strongly negatively affected by regional unemployment, but they found no significant relationship for women. In unreported regressions (available upon request) we observe no significant gender differentials when we ran our analysis separately for both men and women, i.e. the interaction between unemployment and employment deprivation is significant and positive with a similar effect size under both specifications. Next we re-estimated the results in table 2 relating to the interaction between unemployment and perception of neighbours, separately for both men and women. This time we did observe significant gender differentials as the interaction between unemployment and perception of neighbours is significant for men but not for women. These interaction effects for both men and woman are illustrated in figure 3 and 4. In figure 3 we can see that the gap in psychological well-being between employed and unemployed women remains relatively constant at all levels of *perception of neighbours*. On the other hand, the gap in well-being between employed and unemployed men is much less when they think of themselves as being similar as opposed to relatively dissimilar to their neighbours.

iv) Self-reported happiness

As a useful robustness check, we replicate the analysis described in table 1 with self-reported happiness as opposed to psychological well-being as our outcome variable (see table 3 and figure 5). This measure records individuals self-reported general happiness on a scale ranging from 1 much less than usual to 4 much more than usual can be seen as an evaluation of how people experience the quality of their lives (i.e. cognitive well-being) as well as positive affect (i.e. moods and

emotions). Unemployment and employment deprivation have the expected negative association with general happiness and the control variables are also all along expected lines. The interaction between unemployment and employment deprivation attracts a significant and positive coefficient. This means that similar to our results in relation to psychological well-being, there is a smaller gap in happiness between unemployed and employed persons in neighbourhoods with relatively higher rates of joblessness. In unreported results we also replicated the analysis in table 2 using self-reported happiness as our outcome variable. Again we observed a significant interaction between unemployment and perception of neighbours, suggesting that unemployment has less of a negative effect on happiness (again stronger for men than women) when respondents think of themselves as being similar to their neighbours.

5. Conclusion

The research question explored in this study is whether the negative effects of unemployment on individual's well-being are moderated by the work status of their neighbours. Specifically, we examined the role of aggregate unemployment on the well-being of the employed and the unemployed. If aggregate unemployment has less of an impact on the well-being of the unemployed relative to the employed, then this is taken as evidence of a social-norm effect. Under this interpretation, higher local unemployment weakens the norm towards work, as unemployment is less of a deviation from the norm. We extended previous research in this area by defining unemployment rates in respondents' own neighbourhoods, as opposed to regional rates of unemployment as the reference group. This is likely to be a much more relevant comparison group for individuals, as well as lessens the possibility that any significant differences are due to confounding with omitted variables at the regional level.

Our analysis suggests that unemployment is negatively related with subjective indicators of well-being. However, we find that aggregate levels of unemployment (here defined as neighbourhood unemployment) differentially affects the well-being of the employed and unemployed. For the employed, increases in neighbourhood unemployment is negatively associated with subjective well-being. On the other hand, we find a positive association between the neighbourhood unemployment rate and the subjective well-being of the unemployed. This supports the hypothesis that it is easier psychologically to be unemployed in a neighbourhood with a high rate of unemployment in keeping with the 'social-norm' effect. In other words, the unemployed appear to benefit from the presence of an externality linked to other people's unemployment.

The presence of social-norms in labour market status has important policy implications. For instance, if residents in high unemployment areas are less negatively affected by unemployment then this might provide a reduced incentive for work (Clark, 2003). This has been help up as one possible explanation for 'hysteresis' in that large numbers of people being unemployed in the same area may lead to a 'culture of unemployment' (Oesch and Lipps, 2012). The presence of norm-type hysteresis in unemployment suggests that it may be important for prompt labour market intervention before the prevailing norm towards work weakens (Clark, 2003). Our findings that neighbourhood unemployment is positively associated with the well-being of the unemployed throws up some further interesting research questions relating to the residential sorting of individuals. It is well-established that constraints in income and housing is one mechanism behind the often observed sorting of individuals into relatively homogenous residential groupings, i.e. large numbers of unemployed individuals living in spatial proximity to each other. A further interesting research question is the extent to which (if they do at all) individuals who are unemployed (particularly the long term unemployed) self-select into areas with high rates of unemployment due to the potential well-being benefits from living close to other individuals who are also unemployed?

In keeping with the residential sorting idea, we observe that individuals who think of themselves as being similar to other people that live in their neighbourhood are likely to enjoy higher well-being scores than individuals who perceive themselves as being relatively dissimilar. We also observed a positive interaction effect between this variable and unemployment, i.e. unemployment hurts less (at least for men) when unemployed individuals think of themselves as being similar to their neighbours. Taken together, our results which defined the relevant reference group at the neighbourhood as opposed to regional level, suggest that there may be significant social-norm effects when it comes to the disutility experienced from being unemployed. Of course one limitation with this and existing research in this area is that we are capturing social norms indirectly by defining relevant comparison groups (e.g. unemployment in the neighbourhood). It would be useful for future work if large scale panel surveys experimented with questions designed to ascertain how much individuals themselves are affected by social norms, as there may be significant heterogeneity across individuals relating to how much or how little they are affected by the behaviour of others.

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Table 1: Psychological well-being (GHQ) regression results

Pooled ordinary least squares regression results			**Fixed effects**	
Main effects results	Coef.	Std. Err.	Coef.	Std. Err.
Log of equivalent household income	0.22***	0.02	0.10 ***	0.02
Age	-0.06 ***	0.00	-0.11 ***	0.01
Age squared	0.00 ***	0.00	0.00 ***	0.00
Female	-1.05 ***	0.02	0.52	0.99
Relationship status – single is the reference category				
Married	0.37 ***	0.03	0.15 ***	0.06
Separated	-0.25 ***	0.04	-0.12	0.09
Widowed	0.06	0.06	-0.05	0.13
Number of children	-0.02 *	0.01	0.02	0.03
Education dummies – no formal qualifications is the reference category				
Degree is the highest qualification	0.08 **	0.04	-0.24 *	0.14
Has a Teaching qualification	0.15 *	0.05	-0.21 *	0.12
A levels	0.06	0.04	-0.23 *	0.12
GCSE	0.19 ***	0.04	-0.01	0.12
Satisfaction with health - completely dissatisfied is the reference category				
Mostly dissatisfied	1.75 ***	0.07	1.03 ***	0.07
Somewhat dissatisfied	1.19 ***	0.06	0.76 ***	0.07
Neither satisfied or dissatisfied	2.49 ***	0.07	1.51 ***	0.07
Somewhat satisfied	3.58 ***	0.06	2.07 ***	0.06
Mostly satisfied	5.01 ***	0.06	2.72 ***	0.06
Completely satisfied	6.49 ***	0.07	3.23 ***	0.07
Employment dummies - employed is the reference category				
Unemployed	-1.93 ***	0.06	-1.72 ***	0.07
Self employed	0.12 ***	0.05	0.07	0.07
Retired	0.24 ***	0.05	0.04	0.07
Familycare	-0.53 ***	0.05	-0.36 ***	0.07
Training	-0.20 ***	0.06	-0.11	0.08
Disabled	-4.44 ***	0.07	-2.51 ***	0.10
Other	-0.67 **	0.26	-0.30	0.24
Region dummies - London is the reference category				
Northeast	0.07	0.06	-0.84 *	0.44
Northwest	-0.03	0.04	0.55 *	0.31
Yorkshire	-0.05	0.05	-0.16	0.30
East midlands	-0.06	0.05	-0.05	0.27
West midlands	-0.11 **	0.05	-0.09	0.30
East England	0.05	0.05	-0.35	0.23
Southeast	-0.09 **	0.04	-0.44 *	0.20
Southwest	0.02	0.05	-0.28	0.25
Employment deprivation	-1.36	0.17	-1.29	0.50
Results from interaction model				
*Unemployment*employment deprivation*	2.61 ***	0.61	1.91 ***	0.72

*** statistically significant at 1% level, ** statistically significant at 5 % level, ** statistically significant at 1 % level

Table 2: Psychological well-being (GHQ) regression results

Main effects results	Coef	Std. Err.
Log of equivalent household income	0.21 ***	0.03
Age	-0.09 ***	0.01
Age squared	0.00 ***	0.00
Female	-0.96 ***	0.04
Relationship status – single is the reference category		
Married	0.25 ***	0.06
Seperated	-0.34 ***	0.08
Widowed	-0.38 ***	0.11
Number of children	-0.01	0.02
Education dummies – no formal qualifications is the reference category		
Degree is the highest qualification	0.20 ***	0.07
Has a Teaching qualification	0.17 **	0.09
A levels	0.12	0.08
GCSE	0.23 ***	0.07
Satisfaction with health - completely dissatisfied is the reference		
Mostly dissatisfied	1.27 ***	0.11
Somewhat dissatisfied	0.42 ***	0.11
Neither satisfied or dissatisfied	1.59 ***	0.11
Somewhat satisfied	2.40 ***	0.11
Mostly satisfied	3.89 ***	0.10
Completely satisfied	5.40 ***	0.11
Employment dummies - employed is the reference category		
Unemployed	-1.97 ***	0.09
Self employed	-0.07	0.08
Retired	0.20 **	0.09
Familycare	-0.63 ***	0.09
Training	-0.23 **	0.10
Disabled	-5.08 ***	0.12
Other	0.00	0.75
Region dummies - London is the reference category		
Northeast	-0.11	0.10
Northwest	-0.28 ***	0.08
Yorkshire	-0.18 **	0.08
East midlands	-0.13	0.08
West midlands	-0.34 ***	0.08
East England	-0.13	0.08
Southeast	0.05	0.07
Southwest	0.05	0.08
Employment deprivation	-0.47	0.30
Perception of neighbours	0.51 ***	0.02
Results from interaction model		
*Unemployment*perception of neighbours*	0.19	0.08

Table 3: Self-reported happiness regression results – fixed effects

Main effects results	Coef.	Std. Err.
Log of equivalent household income	0.005	0.003
Age	-0.010 ***	0.002
Age squared	0.000 ***	0.000
Female	0.281 **	0.125
Relationship status – single is the reference category		
Married	-0.028 ***	0.007
Separated	-0.032 ***	0.012
Widowed	-0.047 ***	0.017
Number of children	-0.004	0.004
Education dummies – no formal qualifications is the reference category		
Degree is the highest qualification	0.034 *	0.018
Has a Teaching qualification	0.002	0.015
A levels	0.024	0.016
GCSE	0.016	0.016
Satisfaction with health - completely dissatisfied is the reference		
Mostly dissatisfied	0.084 ***	0.008
Somewhat dissatisfied	0.068 ***	0.008
Neither satisfied or dissatisfied	0.127 ***	0.009
Somewhat satisfied	0.177 ***	0.008
Mostly satisfied	0.220 ***	0.008
Completely satisfied	0.250 ***	0.009
Employment dummies - employed is the reference category		
Unemployed	-0.136 ***	0.008
Self employed	0.021 **	0.009
Retired	0.012	0.009
Familycare	0.002	0.008
Training	-0.010	0.010
Disabled	-0.193 ***	0.013
Other	-0.011	0.031
Region dummies - London is the reference category		
Northeast	-0.162 ***	0.056
Northwest	0.069 *	0.040
Yorkshire	-0.051	0.038
East midlands	-0.040	0.034
West midlands	-0.106 ***	0.039
East England	-0.032	0.030
Southeast	-0.017	0.025
Southwest	-0.061 *	0.032
Employment deprivation	-0.173 ***	0.064
Results from interaction model		
*Unemployment*employment deprivation*	0.200 **	0.091

*Figure 1: Unemployment*employment deprivation interaction effect*

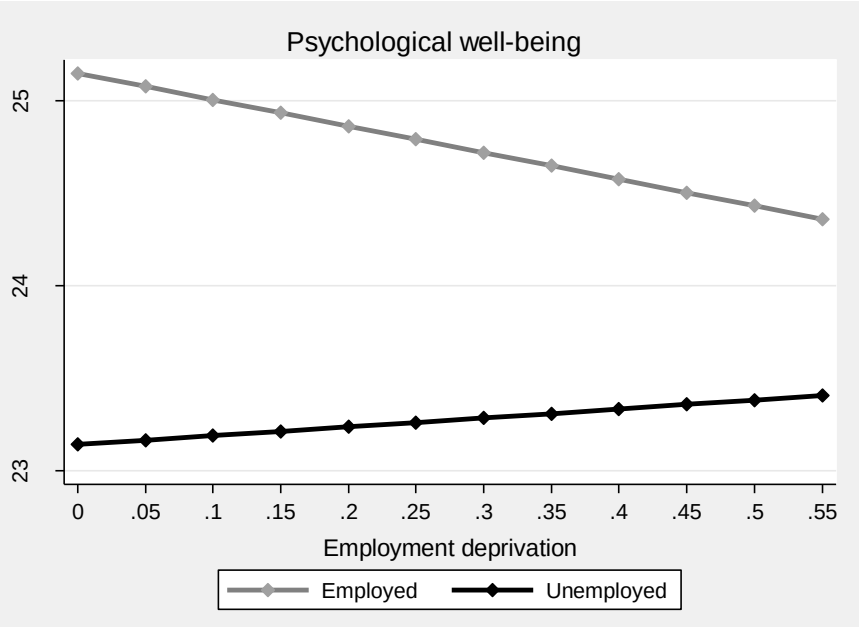

*Figure 2: Unemployment*perception of neighbours interaction effect*

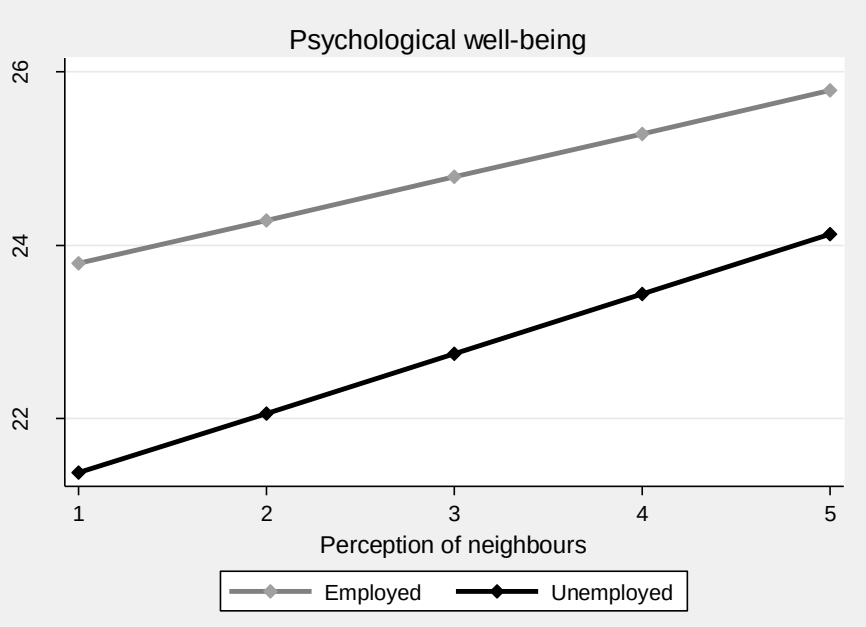

*Figure 3: Unemployment*perception of neighbours interaction effect – females*

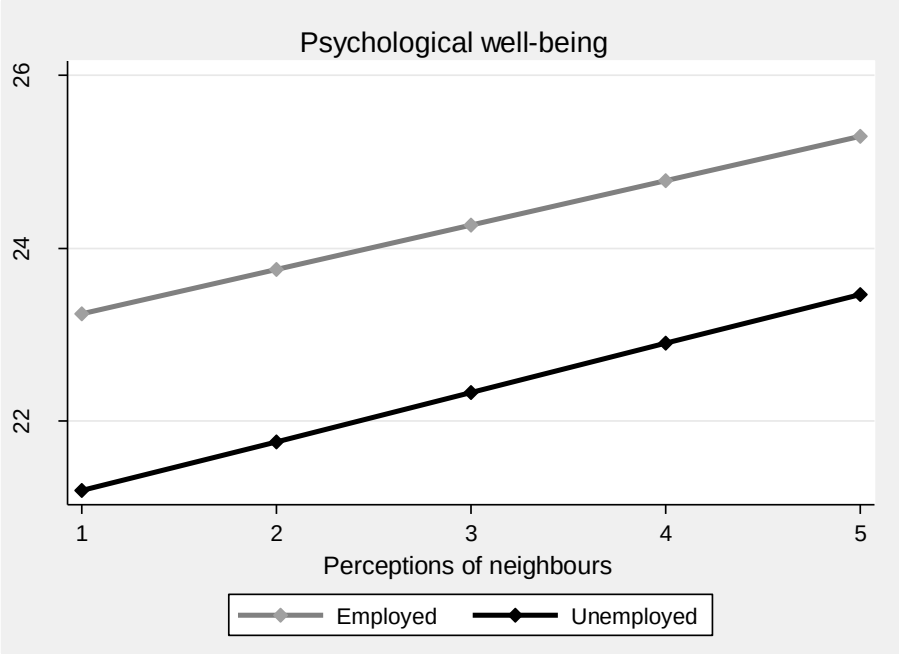

*Figure 4: Unemployment*perception of neighbours interaction effect - males*

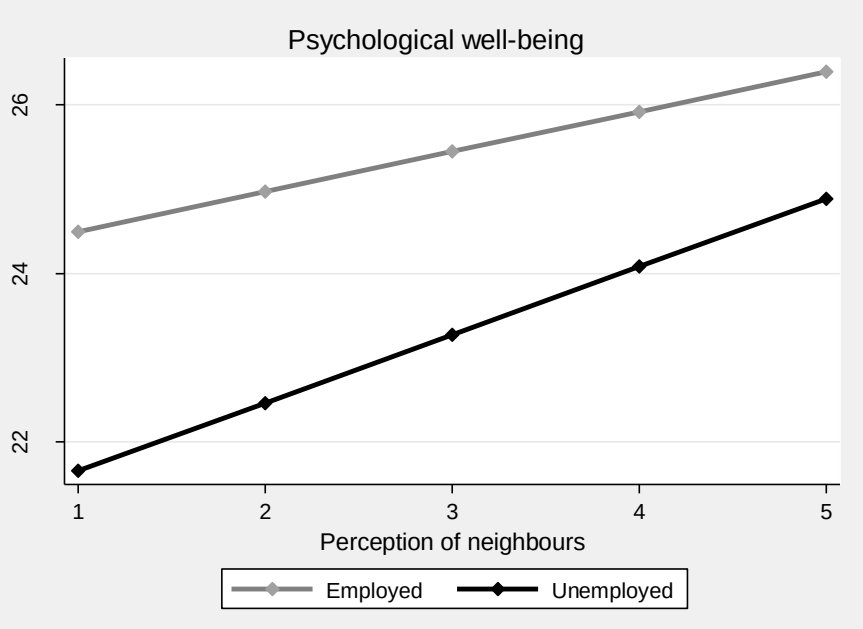

*Figure 5: Unemployment*employment deprivation interaction effect*