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An Analysis of Subjective Wellbeing in Wales: Evidence from the Annual Population Survey

An Analysis of Subjective Wellbeing in Wales: Evidence from the Annual Population Survey

Final Report

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Views expressed in this report are those of the researcher and not necessarily those of the Welsh Government

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Executive Summary

This report examines Annual Population Survey (APS) data containing new questions on Subjective Wellbeing (SWB). It focuses on comparisons between variations in SWB across countries of the UK and areas within Wales, as well as how SWB varies by demographic sub-groups within Wales. In particular, it identifies groups of individuals and areas within Wales where low levels of SWB are observed. Some of the key findings in the report are:

- Self-reported health appears to be the most important influence on SWB, with those in very bad health reporting by far the lowest levels of SWB. This is particularly noticeable for individuals with mental health problems.

- Unemployment is strongly linked with lower levels of SWB. The duration of unemployment is also important as the long-term unemployed are far more likely to report a low level of SWB.

- The influence of personal and household characteristics appears to be very similar in Wales to other parts of the UK. As a result, there is relatively little variation in SWB across the regions of the UK.

- Although SWB varies across areas within Wales, such as between unitary authorities, localities with different levels of deprivation and rurality, spatial factors are far less important than individual characteristics – so that apparent differences due to geography are largely explained by differences in the individual characteristics of people in the areas.

- For a more complete understanding of the dynamics of SWB it would also be necessary to examine panel data on SWB in Wales because of issues such as the adaption to particular circumstances.

There now follows a brief summary of each chapter:

Chapter 1 contains a description of the data used in the empirical analysis: the Annual Population Survey (APS) dataset for April to September 2011 and a brief review of the factors that have been found to be associated with SWB. The APS contains four different measures of SWB:

- the respondent's overall satisfaction with life (*Life Satisfaction),*
- whether the things they do in life are worthwhile (*Worthwhile*),
- how happy they felt yesterday (*Happiness*) and
- how anxious they felt yesterday (*Anxiety*).

Responses to each of the questions are requested on a 0-10 scale, where 0 represents 'not at all' and 10 represents completely. In contrast to the analysis using these data published by the Office for National Statistics (ONS) in February 2012, which generally reported differences in mean levels of SWB across different socio-economic groups, the main focus of this report is on the distribution of responses. This particularly relates to geographic areas and demographic groups where a low level of SWB is reported. As a result, four categories of SWB have been created for the *Life*

Satisfaction, *Worthwhile* and *Happiness* measures: Very Low (0-4), Low (5-6), Medium (7-8) and High (9-10). The categories for the fourth measure (*Anxiety*) are slightly different, given that a higher number corresponds with a higher level of anxiety (lower SWB). Therefore for the *Anxiety* measure the four categories are Very High (6-10), High (4-5), Medium (2-3) and Low (0-1). The APS data that has been provided by the ONS also includes a Lower Super Output Area (LSOA) indicator, which enabled the Welsh Index of Multiple Deprivation to be matched in.

Chapter 2 compares the distribution of SWB responses in Wales to other parts of the UK. This entails both a comparison with the other countries of the UK, as well as with the English regions. In addition to examining variations in the four categories of SWB, mean levels of SWB are also reported for each measure. The analysis indicates that SWB does not differ greatly across the UK, although there are some variations. For example, Wales has the highest proportion reporting very low levels of SWB of all four of the home nations for *Life Satisfaction* and *Happiness* but is ranked second amongst the four countries for high levels of SWB for all of the measures (behind Northern Ireland on three of them and behind Scotland on *Anxiety*).[1] There are also variations across English regions, with people living in the West Midlands and London most likely to report low or very low levels of SWB.

Chapter 3 provides descriptive analysis on variations in the SWB measures across socio-economic groups and for areas within Wales. The findings in this chapter indicate that variations in SWB across personal and household characteristics are generally similar in Wales and the rest of the UK and these are also in accordance with the previous empirical literature on influences on SWB. For example,

- only small gender differentials are found but females report slightly higher levels of SWB on some measures;
- there is generally a U-shaped relationship between age and SWB;
- a strong link is found to exist between SWB and health;
- not only are stated levels of SWB far lower for people reporting disabilities, there are also very large differences according to self-reported health, with people in bad and very bad health highly concentrated in the very low SWB category;
- reported levels of SWB also vary considerably by economic activity. Students and those in employment tend to report the highest levels of SWB, whilst the unemployed and individuals who are inactive due to health problems are by far the most likely to report very low levels of SWB;
- other findings include that SWB is lowest for people with no qualifications, divorcees and social housing tenants;
- the small number of observations on individuals from the ethnic minorities means that it is difficult to be precise on how SWB varies by ethnicity in Wales;
- there are also some spatial variations in SWB within Wales. In particular, Unitary Authorities (UAs) located in the South Wales Valleys tend to feature at the bottom of the SWB rankings, whilst SWB tends to be higher in rural areas. Furthermore, splitting areas up into quartiles according to the deprivation ranking of the LSOA, reveals that those living in the most deprived parts of Wales are most likely to report very low levels of SWB. For example, around a third of residents living in

[1] It should again be noted that *Anxiety* is measured differently to the other three measures, with a high rating indicating a low level of SWB. This should be borne in mind when the measures are discussed together.

areas located in the most deprived quartile report either low or very low levels of *Life Satisfaction*, compared with 19% of those living in the quartile containing the least deprived areas.

Chapter 4 contains the results from multivariate regression analysis which allows the findings from the descriptive analysis to be examined more closely. Two broad sets of models are estimated using unweighted data. The first of these are binary probit models, which identify those individuals reporting low or very low levels of SWB (i.e. threshold models). The second set of models are ordered probit models that allow the characteristics of those reporting high levels of SWB, as well as low values, to be examined. By controlling for individual and area characteristics in these models, we aim to produce a more accurate picture of precisely which characteristics are associated with lower levels of SWB. The results indicate that the strongest influence on SWB is self-reported health. For example, after controlling for all other influences, the difference in the probability of reporting below the threshold level of Life Satisfaction is more than 50 percentage points higher for individuals in very bad health compared to those in very good health in Wales. Moreover, disability becomes far less important once self-reported health is included in the models. Unemployment also remains a very important influence on SWB even after other factors have been netted out, with the difference in the probability of reporting a low or very level of *Life Satisfaction* between unemployed individuals and those in full-time employment being 21 percentage points. In contrast, the areas of residence indicators (UAs, deprivation quartiles and urban-rural) have relatively little effect on the incidence of low levels of SWB after controlling for personal and household characteristics.

Finally, **Chapter 5** contains a discussion of the main findings from the empirical analysis and also attempts to relate these to some wider issues. This chapter commences with a more detailed examination of the effects of unemployment and health on SWB. In particular, this additional analysis indicates that the long-term unemployed report far lower levels of SWB compared to those who have only been out of work for a short period of time (less than 3 months). In terms of health, those reporting a mental health problem have the lowest levels of SWB, with almost two-thirds of this group reporting either low or very low levels of *Life Satisfaction*. The findings are then discussed in relation to some key issues that have been highlighted in the literature, especially in connection to adaption and habit formation. This discussion indicates that adaption in SWB occurs with respect to most major life events, apart from unemployment, which is consistent with our findings on the duration of unemployment. Evidence from UK panel data also indicates that individuals may partially adapt to illness or disability but the APS data being examined here do not allow the length of illness to be considered. Therefore, it would be interesting to compare findings for Wales with other parts of the UK with regards to adaption to health problems given the higher incidence of ill-health and disability in Wales. This may be possible in coming years with the availability of larger samples containing information on the same individuals in the Understanding Society dataset. Finally, there is a brief discussion of the SWB questions that have been included in the National Survey for Wales. Some supplementary questions on satisfaction with different aspects of an individual's life have been included in the survey which should provide added value to those that have been included in the APS. This particularly relates to satisfaction with physical health and mental wellbeing as well as with work and financial situations.

1. Introduction

This report contains some analysis of subjective Wellbeing (SWB) in Wales using data obtained from the Annual Population Survey (APS) for April to September 2011. This follows the publication of a report by the Office of National Statistics (ONS) in February 2012, which mainly contains an analysis of SWB for the UK as a whole (ONS, 2012). The publication of the report is part of the ONS' Measuring National Wellbeing Programme, which was launched in November 2010 and aims to develop an accepted set of statistics that measure Wellbeing in the UK. The report produced for the UK focuses on the following four questions that have been asked in the APS from April 2011. Our report primarily focuses on analysis of the SWB questions in just Wales, although there is some comparison with other parts of the UK, especially in Chapter 4, which reports the results of some regression analysis. The opening chapter initially gives some background information on the APS wellbeing dataset before summarising some key issues from the happiness literature.

1.1. The Annual Population Survey Wellbeing Dataset

The subsequent analysis has been undertaken using APS data that was collected by the ONS between April and September 2011. The sample for the UK contains around 80,000 people aged 16 and over who answered the SWB questions. For Wales, just over 9,000 adults answered these questions. Four SWB questions have been included in the APS, which are:

(i) Overall, how satisfied are you with your life nowadays? (*life satisfaction*);
(ii) Overall, to what extent do you feel the things you do in your life are worthwhile? (*worthwhile*);
(iii) Overall, how happy did you feel yesterday? (*happiness*);
(iv) Overall, how anxious did you feel yesterday? (*anxiety*).

Responses to each of these questions were requested on a 0-10 scale, where 0 represents 'not at all' and 10 represents completely. ONS (2011) discuss the process that was undertaken to develop these questions. They note that the questions represent a balanced approach to measuring SWB since they relate to the three main methodological approaches: the evaluative, eudemonic and experience approaches (ONS, 2011).

No information on SWB is provided for proxy respondents but these questions were answered by over 99% of the sample making personal responses. In contrast, the response rate to the SWB questions was only around 71% for the economically inactive aged 70 or over. The larger sample compared to the previous results reported for the Opinions Survey (ONS, 2011) allows differences between demographic sub-groups to be examined, including for Wales. Furthermore, given the presence of a Lower Layer Super Output Area (LSOA) identifier in the data set received from the ONS, this allows for the matching of information from the Welsh Index of Multiple Deprivation (WIMD). This analysis is briefly summarised in Section 3. For the purposes of comparability with ONS (2012), we generally use the same sample (adults are 16 and over) and also weight the data. As a result, the same mean ratings are reported to those shown in ONS (2012).

ONS (2012) only report mean levels of SWB for the countries of the UK and English regions (to one decimal place). Little variation is found in the responses to the four SWB questions across the UK. For example, average levels of SWB in Wales were either the same as the UK average (questions 1 and 3) or within 0.1 of the UK average (higher for question 2 and lower for question 4 – although both would indicate a slightly higher mean level of SWB in Wales given the latter question relates to anxiety). In terms of question 4, Wales had the joint highest level of SWB amongst the four constituent countries of the UK, along with Scotland, with mean levels of SWB (anxiety) being 0.1 lower (higher) in England and Northern Ireland. Whereas mean responses to the life satisfaction question, were highest in Northern Ireland (7.6), followed by Scotland (7.5) and the same in England and Wales (7.4).

We will focus on SWB across the distribution of responses since ONS (2012) only provide limited information on this for the UK as a whole by splitting responses into four categories, high, medium and two for low values. In particular, the layout of each of the tables in the subsequent analysis is the same. For the first three measures of SWB – *Life Satisfaction*, *Worthwhile* and *Happiness* – the proportion of respondents reporting Very Low (0-4), Low (5-6), Medium (7-8), and High (9-10) levels of SWB are shown alongside the mean ratings for each measure for individuals identified in the rows of the tables. For the fourth measure of SWB, *Anxiety*, the layout of the table is similar to that used for the other three measures but because the question asked for this particular measure required respondents to report 'how anxious they felt yesterday', with 0 indicating 'not at all' and 10 'completely', the categories identified are Very High (6-10); High (4-5); Medium (2-3); and Low (0-1). The statistics in each table indicate the percentage of the total observations for each group that are in each of the four SWB categories. The discussions in sections 2 and 3 tend to focus on the statistics on life satisfaction as this is the first set of results in each piece of analysis, and there also tends to be a high degree of association between the SWB measures. For example, the correlation between life satisfaction and the worthwhile measure is 0.62 and with happiness it is 0.58, whereas its correlation with anxiety is negative and weaker (-0.34). The comparable correlations for the rest of the UK are virtually identical.

1.2. Related Literature

Since the relationship between what makes individuals happy is complex, its measurement and estimation mechanisms are beset with some fundamental problems. A report for the UK Government's Strategy Unit identified five factors that shape an individual's wellbeing: genetics, personality, physical attributes, gender and age. Other factors that influence individual wellbeing include civic participation, the existence of democratic institutions, level of education, relative income and ethnicity and religious beliefs. Many studies highlight the premium placed on inter-personal relationships with family, friends and others within the community.

The SWB perspective emphasizes that a person's '*cognitive and affective evaluations of his/her life*' must be taken into account while defining happiness (Diener *et al.*, 2002). In this context, the cognitive element refers to what one thinks about his or her life satisfaction in *global terms* (life as a whole) and in *domain terms* (in specific areas of life such as work, relationships, etc.). Since the affective element comprises of emotions, moods and feelings, it can be considered positive when the emotions,

moods and feelings experienced are pleasant and negative when the latter are deemed unpleasant. Many empirical studies of SWB therefore include those variables as determinants which correspond to either direct or indirect measures of emotions, moods and feelings.

The concept of SWB falls within the 'hedonic' perspective of happiness. It defines SWB or happiness as an optimal outcome of the pleasure maximization subject to the constraints that reflect minimal pain. This perspective places focus on earnings in life and self-realization, and the extent to which a person fully integrates this into his or her life. The majority of theoretical research on happiness, especially from an economic perspective, has attempted to explain the dynamics of happiness within the conventional framework of utility maximization and extend the model to capture uncertainty dynamics (e.g. Kahneman and Krueger, 2006). The empirical framework has tended not to stick to a specific theoretical setting. Rather, the choice of the variables in determining happiness has followed broad theoretical arguments related to either labour market, health, psychological, economic and social factors or to some combination all of these. There now follows a brief summary of the influences on SWB.

1. 2. 1. Adaptive capacity (*habit formation*)

Habit formation and the corresponding evolutionary approach of happiness has been recently investigated by Rayo and Becker (2007). According to their dynamic model, although an event in one's life can influence an individual's SWB, the individual will eventually adapt to the change experienced and return to his or her biologically determined 'set point' or level of adaptation. Similarly, the 'hedonic treadmill' theory states that individuals adapt quickly to changes in their lifestyles and return to their baseline levels of happiness, a theory which is consistent to the dynamic equilibrium model. An extensive and rigorousness discussion of baseline happiness has appeared in Kimball and Willis (2006), who have challenged the well-known results of prospect theory (Kahneman and Tversky, 1979) and solve some of the well-known puzzles of happiness research by dividing them into short-run and long-run objectives. Although evidence seems to support the theory of happiness having a genetic component, as well as the concept of adaptation, Diener *et al.* (1999) have suggested that these theories, whilst useful, provide an incomplete explanation of why and how individuals adapt. Also, whilst genes may predispose a person to behave in a certain way within certain contexts, a person's level of SWB is not uncontrollable. Rayo and Becker (2007) also reflect on the idea that a person's adaptive capability to a new socio-economic order may not necessarily reflect the true happiness that they desire.

1. 2. 2. (*Prior*) *Expectations about success*

How one thinks about his or her life also plays a part in determining one's SWB. This has been addressed by Rayo and Becker (2007), who argue that an individual's prior expectations about their own success matters for SWB. Diener *et al.* (1999) report that optimism (the expectation that more good things will happen in the future than bad), the internal locus of control (the belief that one has control over his or her life) and self-esteem (defined by Baumeister *et al.*, 2003 as 'how much value one places on themselves, their self-worth and their capabilities') were personality traits that are significantly correlated with SWB. Many empirical studies (e.g. Diener and Seligman, 2002) argue that a fulfilling social life and a network of close social support with family and friends are strongly correlated with SWB.

1. 2. 3. Labour market outcomes

There is a large body of evidence which suggests that people who have jobs tend to be far happier than those who are unemployed, and what's more, skilled workers seem to be happier than their unskilled counterparts (Argyle, 2001). Being in employment provides more of an opportunity to engage the mind and connect with others than being unemployed, where unemployment can lead to higher distress and lower life satisfaction (Oswald, 1997). Warr (1999) argues that higher levels of SWB can be attributed to work which effectively matches one's skills, talents and preferences, allows for some amount of autonomy or 'decisional discretion', provides variety in the tasks, provides supportive supervision, as well as opportunities for interpersonal contact with colleagues. He also suggests that the position should have some value in society and provide financial and physical security.

1. 2. 4. Personal and social relationships

Myers (2000) reports that married people are generally happier than those who are unmarried, whether they are separated, divorced or single. However, he also finds that the unhappiest people are those stuck in unhappy marriages. One explanation of the link between marriage and happiness is the range of benefits that marriage brings in terms of intimacy, companionship, sharing etc. One would also think that cohabiting couples who seem to experience the same benefits as married couples, would therefore have similar correlations with SWB as the married couples. However, Diener *et al.* (1998) report that this is not the case, finding instead that married couples were happier than non-married couples, especially in collectivist cultures such as India. Within more individualistic cultures such as the U.K., this trend appears to be changing and the SWB of cohabiting couples are rising to levels in line with those of the married couples.

In a related social context, leisure and recreation have been found to have beneficial short-term effects on SWB (Argyle, 2001). Some examples are exercise which improves the individual's state of mood in the short-term and, in the long-term, leads to increased SWB (Argyle, 2001). Whilst exercise provides better psychological and physical health outcomes, the pursuits of leisure and recreation and exercise often involves interaction with other people. Like places of work and places of worship, places of recreation and exercise [e.g. gyms and fitness classes] all involve connection with other people, which promotes SWB. However, does being sociable and doing sociable things lead to increased SWB or is it that SWB leads one to be more sociable?

1. 2. 5. Social capital

In addition to the socio-economic and labour market characteristics, the quality of a person or community's social interactions (under the broad heading of social capital) have been hailed as an important influence on physical and mental health outcomes. Social capital, which refers to the social context of people's lives, is a multi-dimensional concept that variously encompasses other concepts. These include trust, civic engagement, social norms and reciprocity; features of social structures and networks; and the resources embedded within them. Social scientists, policy makers and clinicians have seized upon social capital as a panacea for the post-modern disintegration of grand social theory. The effects of access to social opportunities, having someone to confide in, associational membership and feelings of trust are all used as indicators of the quality of a person or communities' social interactions. The

role of non-pecuniary factors in determining levels of SWB and mental health have also been well supported within the literature.

For example, Kroll (2011) examines how social capital is correlated in different ways with the social SWB of men, women, parents and non-parents. The author applies ordered logit and OLS regression analysis to UK data from the European Social Survey. It is found that civic engagement is not at all associated with higher life satisfaction for mothers, while the relationship is positive for men and strongest for childless women. Moreover, informal socialising is positively and more strongly associated with life satisfaction among women, although only when OLS is used. It is concluded that the social context of SWB varies considerably by gender and parental status.

1. 2. 6. Summary

Whilst the recent empirical literature suggests that certain socio-economic characteristics and personality traits exert strong influences on SWB, additional research is needed to explore the issue of causality. In particular, causal research requires greater analysis of longitudinal data. More causal research would then indicate whether or not certain correlates determine or are merely outcomes of SWB. In the meantime, previous empirical research shows that a very happy individual is likely to be a happily married optimistic extrovert, who has an active social life, with a network of good social support, who feels fulfilled at work, is religious, enjoys active recreational pursuits, exercises regularly and feels that they are in good health.

2. Subjective Wellbeing in Wales Compared to the Rest of the UK

Table 2.1 reports life satisfaction levels for countries of the UK and for English regions. As reported in ONS (2012), very similar mean levels of satisfaction are reported across the countries of the UK and for regions within England. These vary from 7.2 in London and the West Midlands to 7.6 in Northern Ireland. However, given the large sample sizes for each area, the differences in mean ratings of life satisfaction between Wales and comparative areas are significantly different from zero. The only exception is for the Wales-East of England comparison, where the difference in the respective means is not quite statistically significant at the 5% level.

Therefore, more interesting comparisons can be detected if variations are examined across the four satisfaction categories. For example, the percentage of respondents reporting a very low (0-4) level of life satisfaction is lower in Wales than in any of the other three countries of the UK. 7.3% of the Welsh sample are located within this category, compared to 6.1% in Northern Ireland and 6.5% in Scotland. Just under 18% of respondents in Wales and England reported a low (5-6) level of satisfaction, which was again above the percentage seen in Northern Ireland (14.2%) and Scotland (16.5%). Northern Ireland also had the highest percentage of respondents reporting a high level of life satisfaction, at around 32%. This was 4 percentage points higher than in Wales but the percentage of Welsh residents within this category was slightly higher than in Scotland and 2 percentage points higher than in England.

Table 2.1. Variations in Life Satisfaction by English Region and Country of the UK

	Life Satisfaction						
	Very low	**Low**	**Medium**	**High**	**Mean**	**p-value**	**N**
North East	7.0	18.8	47.1	27.2	7.4	0.000	5148
North West	7.3	17.9	48.7	26.1	7.4	0.000	9856
Yorkshire & the Humber	7.6	17.4	48.6	26.4	7.4	0.000	6421
East Midlands	8.3	16.7	48.8	26.3	7.4	0.000	3953
West Midlands	9.4	18.1	48.3	24.3	7.2	0.000	6137
East of England	6.1	17.6	50.0	26.4	7.4	0.059	4995
London	7.1	21.2	50.0	21.7	7.2	0.000	6843
South East	5.6	15.7	51.8	26.9	7.5	0.000	8873
South West	6.5	15.4	49.6	28.4	7.5	0.000	6341
England	7.1	17.7	49.5	25.8	7.4	0.000	58567
Wales	7.3	17.6	47.3	27.8	7.4	_	9124
Scotland	6.5	16.5	49.9	27.1	7.5	0.000	11451
Northern Ireland	6.1	14.2	47.9	31.8	7.6	0.000	1342
United Kingdom	7.0	17.5	49.4	26.1	7.4	_	80484

Notes: The sample is restricted to individuals aged over 16 who are resident in Wales. The data are weighted but an unweighted sample size N is also reported for each category. p-value refers to the probability value from a two-sided t-test for the difference in the mean rating reported in Wales and each comparison area.

Regional variation in life satisfaction is also present across England, with almost a 4 percentage point difference in the concentration of respondents reporting very low levels of life satisfaction between the West Midlands (the least satisfied region) and the South East. Although the percentage of Londoners with very low levels of life satisfaction is slightly lower than it is in Wales, a high percentage of London residents (over 21%) report low levels of satisfaction. London clearly also has the smallest percentage of people reporting high levels of satisfaction, almost 3 percentage points below that seen in the West Midlands. In contrast, 28% of the sample residing in the South West reported high levels of life satisfaction, but this is the only English region where the percentage in the high category was higher than it is in Wales.

Table 2.2 reports regional differences in the worthwhile measure of SWB across the UK. The patterns seen in the table are generally quite similar to those observed in Table 2.1. For example, the greatest concentration of very low SWB using this measure is seen in the West Midlands and is smallest in the East of England, the South East and Northern Ireland. The highest percentage of respondents reporting low levels of SWB using this variable is seen in London, whilst it again has the smallest percentage with high levels of the worthwhile measure, followed by the West Midlands. The greatest concentration of respondents reporting high levels of SWB using this measure is found in Northern Ireland, with over a 5 percentage point differential compared to Wales in this category. However, the South West is again the only other region where greater levels of high SWB using this measure can be found than in Wales. Relatively similar percentages in the very low and low categories are found in Wales, England and Scotland and so as a result, the mean rating of the worthwhile measure is higher in Wales.

Table 2.2. Variations in the Worthwhile Measure by English Region and Country of the UK

	Things in Life are Worthwhile						
	Very low	**Low**	**Medium**	**High**	**Mean**	**p-value**	**N**
North East	5.2	16.5	47.1	31.3	7.6	0.000	5128
North West	5.1	15.7	47.3	31.9	7.7	0.000	9817
Yorkshire & the Humber	5.3	15.7	47.1	31.9	7.6	0.000	6389
East Midlands	5.9	15.5	46.8	31.9	7.6	0.000	3933
West Midlands	6.8	17.2	47.7	28.4	7.4	0.000	6100
East of England	4.3	14.5	48.5	32.7	7.7	0.000	4967
London	5.0	18.5	49.4	27.1	7.5	0.000	6793
South East	4.4	13.1	50.7	31.9	7.7	0.000	8846
South West	4.5	14.2	47.6	33.7	7.7	0.000	6326
England	5.1	15.6	48.3	31.0	7.6	0.000	58299
Wales	5.2	15.8	46.1	33.0	7.7	_	9085
Scotland	5.4	14.0	49.6	31.1	7.6	0.000	11420
Northern Ireland	4.4	12.9	44.5	38.3	7.8	0.000	1333
United Kingdom	5.1	15.4	48.2	31.3	7.6	_	80137

Notes: The sample is restricted to individuals aged over 16 who are resident in Wales. The data are weighted but an unweighted sample size N is also reported for each category. p-value refers to the probability value from a two-sided t-test for the difference in the mean rating reported in Wales and each comparison area.

Table 2.3 reveals that the percentage reporting very low levels of happiness is higher in Wales than in the other countries of the UK. However, the regional variation across this category is fairly narrow, since the only regions where less than 10% are in the very low category are Northern Ireland and the East of England, whilst in the majority of the other regions it is in the 11-12% range. Therefore, the percentage reporting a very low level of SWB is much higher for this measure than it is for the previous two measures in each region. However, Wales again ranks second after Northern Ireland in terms of the percentage of its respondents within the high category. As before, the region with the lowest percentage in this category is London, which is the only region where less than 30% of respondents were happy on the day before the interview.

Table 2.3. Variations in Happiness by English Region and Country of the UK

	Happy Yesterday						
	Very low	**Low**	**Medium**	**High**	**Mean**	**p-value**	**N**
North East	11.5	18.1	38.8	31.5	7.2	0.000	5145
North West	11.3	18.3	38.0	32.5	7.3	0.000	9858
Yorkshire & the Humber	11.6	18.0	37.3	33.1	7.3	0.000	6418
East Midlands	11.9	17.5	37.0	33.7	7.3	0.000	3952
West Midlands	11.3	19.6	37.6	31.6	7.2	0.000	6132
East of England	9.6	16.8	40.6	33.0	7.4	0.000	4995
London	11.5	19.8	39.0	29.7	7.2	0.000	6842
South East	10.4	16.6	39.6	33.4	7.4	0.000	8875
South West	10.1	16.7	39.2	34.0	7.4	0.000	6348
England	11.0	17.9	38.7	32.5	7.3	0.000	58565
Wales	11.3	16.6	38.1	34.0	7.3	_	9119
Scotland	11.0	17.6	39.0	32.4	7.3	0.000	11449
Northern Ireland	8.2	15.1	40.9	35.9	7.5	0.000	1339
United Kingdom	10.9	17.8	38.7	32.6	7.3	_	80472

Notes: The sample is restricted to individuals aged over 16 who are resident in Wales. The data are weighted but an unweighted sample size N is also reported for each category. p-value refers to the probability value from a two-sided t-test for the difference in the mean rating reported in Wales and each comparison area.

The information contained in Table 2.4 is presented in a different way since it relates to the anxious yesterday question, in which a higher value corresponds with a higher level of anxiety, and hence a lower level of SWB. Therefore, the very high and high categories identify those reporting low levels of SWB. The percentage in these categories is higher than it is for the three previous measures of SWB, especially in the lowest level of SWB category (very high anxiety). For example, 22% of the Welsh sample report very low levels of SWB on this measure, compared to 7% for life satisfaction, 5% for the worthwhile measure and 11% for happiness. The percentage in the high and very high anxiety categories is very similar in Wales and England but lower in Scotland and Northern Ireland. Again, there is a relatively high concentration of Welsh residents in the high SWB category for this measure (low anxiety) since the only country with a higher percentage in this category is Scotland, whilst the South

West is the only English region where this percentage is greater. Amongst the English regions, London has by far the lowest percentage reporting a low level of anxiety, with 30% in this category compared to a UK average of 36%.

Table 2.4. Variations in Anxiety by English Region and Country of the UK

	Anxious Yesterday						
	Very high	**High**	**Medium**	**Low**	**Mean**	**p-value**	**N**
North East	24.1	18.3	20.3	37.2	3.3	0.000	5144
North West	22.4	18.5	23.3	35.8	3.2	0.000	9834
Yorkshire & the Humber	22.2	18.0	23.0	36.8	3.2	0.000	6406
East Midlands	22.2	19.7	21.7	36.5	3.2	0.000	3949
West Midlands	20.6	18.6	25.3	35.5	3.1	0.000	6113
East of England	21.7	17.0	23.9	37.4	3.1	0.000	4988
London	24.7	21.3	24.1	29.9	3.5	0.000	6807
South East	21.9	17.0	24.0	37.0	3.1	0.000	8869
South West	21.7	16.7	23.3	38.3	3.1	0.000	6342
England	22.4	18.4	23.5	35.7	3.2	0.000	58452
Wales	22.2	18.2	21.9	37.8	3.1	_	9108
Scotland	21.7	16.6	23.3	38.4	3.1	0.000	11440
Northern Ireland	20.5	16.5	29.9	33.2	3.2	0.000	1333
United Kingdom	22.3	18.2	23.6	36.0	3.2	_	80333

Notes: The sample is restricted to individuals aged over 16 who are resident in Wales. The data are weighted but an unweighted sample size N is also reported for each category. p-value refers to the probability value from a two-sided t-test for the difference in the mean rating reported in Wales and each comparison area. The mean level of anxiety is slightly different from that reported in ONS (2012) for the North East (3.3 compared to 3.2) since it appears that the variable *gor* was used by ONS (2012), which has some missing observations compared to the *gora* variable.

3. Variations in Subjective Wellbeing in Wales by Characteristics and Area of Residence

In this section, the variations within the 4 measures of SWB are examined across a range of characteristics for the Welsh sample. The final part of this section contains some spatial analysis within Wales. In the first sub-section, the focus is on equality groups, with some comparison made with variations observed across the same categories in the rest of the UK. The next sub-section considers differences in other personal characteristics, which is followed by an analysis of spatial variations within Wales. The tables in this section present the same information as in those in the previous section, apart from reporting p-values for the differences between mean ratings.

3.1. Equality Groups

Information is included on the following equality groups: gender, age, ethnicity, disability and Welsh identity. No statistics are presented on Welsh language because this variable was not in the dataset that we received from the ONS, whilst sample sizes are too small to examine same-sex couples in Wales. Variations in the 4 SWB measures are presented for Welsh respondents in Tables 3.1 to 3.4, whilst the corresponding information for the rest of the UK can be found in Tables A1 to A4 in the Appendix. The commentary below focuses on the Welsh results for each equality group, although any interesting comparisons with the findings for the rest of the UK are also noted.

Table 3.1 reports that there are only small differences in life satisfaction by gender in Wales. In particular, the mean level of life satisfaction is the same for males and females, although there are some differences across the satisfaction categories, with a higher concentration of females in the high satisfaction category (by 3.5. percentage points). These findings are very similar to the gender variations in life satisfaction reported for the rest of the UK.[2] Table 3.2 reveals that there are larger gender differences in Wales using the worthwhile measure, with the mean rating being 0.2 higher for females. This is mainly the result of almost 35% of females reporting a high level of SWB using this measure, compared to 27.5% of males. The gender variations in the rest of the UK are very similar to those seen for Wales, although males living in Wales are more likely to report a high level of the worthwhile measure. Table 3.3 shows that although females living in Wales are again more represented than males in the high category for happiness, there is also a slightly higher percentage of females in the very low category. This is also the case in the rest of the UK. The gender picture of SWB is a bit different using the anxiety measure since females are more likely to report very high levels of anxiety, with around 25% of females living in Wales in this category compared to 19% of males. The statistics for females in the rest of the UK are again very similar since the mean level of anxiety is the same as it is in Wales and also exceeds that of males.

[2] A higher percentage of females living in Wales are found in the low and very low categories, but also a higher percentage in the high category. Whilst a higher percentage of males living in Wales report that they are highly satisfied.

Table 3.1. Variations in Life Satisfaction by Equality Groups

	Life Satisfaction					
	Very low	**Low**	**Medium**	**High**	**Mean**	**N**
Male	7.3	16.6	50.2	26.0	7.4	3911
Female	7.4	18.6	44.6	29.5	7.4	5213
Aged 16-24	7.2	16.5	45.0	31.4	7.5	510
Aged 25-34	6.8	16.4	48.9	27.8	7.5	1091
Aged 35-44	7.3	19.5	50.6	22.6	7.3	1252
Aged 45-54	9.8	20.0	48.0	22.3	7.1	1635
Aged 55-64	6.5	18.6	48.2	26.7	7.4	1885
Aged 65-74	5.4	13.7	46.8	34.0	7.8	1664
Aged 75 & over	7.8	17.3	41.2	33.7	7.6	1087
White	7.3	17.6	47.5	27.7	7.4	8945
Ethnic Minority	8.0	19.7	41.7	30.6	7.4	176
No disability	4.4	15.3	51.3	29.0	7.6	5332
Disability	16.4	25.3	37.7	20.7	6.6	2181
No Welsh identity	6.4	16.4	48.2	29.1	7.5	3674
Welsh identity	8.0	18.5	46.7	26.9	7.3	5450

Notes: The sample is restricted to individuals aged over 16 who are resident in Wales. The data are weighted but an unweighted sample size N is also reported for each category. Disability has been defined using the *lnglim* and *healim* variables since the *discurr* variable was not included in the APS dataset received from the ONS.

Seven categories have been created in order to examine age differences. These roughly represent 10 year intervals from the age of 16. As reported by the ONS (2012) for the UK as a whole, there is generally a U-shaped relationship between age and life satisfaction. The slight exception to this relates to the 65-74 age group, who report the highest level of satisfaction of any of the age groups. Almost 10% of those aged 45-54 are most likely to report a very low level of satisfaction, compared to just over 5% in the 65-74 age group. The age variations found in the rest of the UK are almost identical, although there are higher percentages of 16-24 and 25-34 year olds in the very low and high categories in Wales. There is not such a clear age pattern when the worthwhile measure is considered, although SWB is again highest in the 65-74 age category, which is also the case in the rest of the UK. In particular, more than 40% of respondents in this group stated their SWB using the worthwhile measure was high, compared to around 30% in the 35-44 and 45-54 age groups (which is slightly higher than in the rest of the UK) and 28% in the 16-24 age group. The 65-74 age group are also the happiest, with 42% of this age group reporting that they were happy yesterday, with the lowest levels of happiness seen amongst the 45-54 age group in both Wales and the rest of the UK. Anxiety levels are lowest for the 25-34 age group in Wales, with only 19% of this group reporting that they were very anxious yesterday. This compares with 26% in the 55-64 age group. Although there are some slight differences in the rest of the UK, the age patterns are again very similar to those observed in Wales.

Table 3.2. Variations in the Worthwhile Measure by Equality Groups

	Things in Life are Worthwhile					
	Very low	**Low**	**Medium**	**High**	**Mean**	**N**
Male	5.6	16.0	48.1	30.4	7.6	3893
Female	4.9	15.5	44.1	35.5	7.8	5192
Aged 16-24	7.5	21.4	43.0	28.2	7.3	509
Aged 25-34	4.3	15.0	48.4	32.3	7.7	1088
Aged 35-44	5.3	14.6	50.3	29.9	7.6	1251
Aged 45-54	5.5	16.1	48.5	30.0	7.6	1631
Aged 55-64	4.1	14.7	45.9	35.4	7.8	1878
Aged 65-74	3.6	11.7	42.9	41.7	8.0	1654
Aged 75 & over	6.4	16.4	40.2	37.0	7.8	1074
White	5.2	15.8	46.2	32.9	7.7	8908
Ethnic Minority	6.7	15.6	42.0	35.8	7.6	174
No disability	3.1	14.7	48.9	33.4	7.8	5321
Disability	11.6	20.3	40.2	27.9	7.1	2170
No Welsh identity	4.7	15.5	46.3	33.6	7.7	3650
Welsh identity	5.6	15.9	45.9	32.6	7.7	5435

Notes: The sample is restricted to individuals aged over 16 who are resident in Wales. The data are weighted but an unweighted sample size N is also reported for each category. Disability has been defined using the *lnglim* and *healim* variables since the *discurr* variable was not included in the APS dataset received from the ONS.

Due to the relatively small proportion of ethnic minorities living in Wales, Tables 2.1-2.4 aggregate all minority groups into a single category. Even when this is done, there are only around 175 non-white individuals living in Wales answering the SWB questions. Here there are some differences between Wales and the rest of the UK since non-whites in Wales report very similar levels of life satisfaction to whites, whereas this is not the case in the rest of the UK. In particular, more than 30% of ethnic minorities living in Wales reported a high level of satisfaction, compared to 23% in the rest of the UK. Non-whites in the Welsh sample were also slightly less likely to report a low level of satisfaction, with 8% in this category compared to 9.2% in the rest of the UK. In addition to the relatively small number of observations in Wales, the differences between Wales and the rest of the UK may be due to the different composition of ethnic minorities or the heavy concentration of ethnic minority in very large cities in other parts of the UK.[3] The mean levels of the worthwhile measure are slightly higher for whites in Wales but there is a higher concentration of non-whites in the high category. 36% of non-whites living in Wales reported a high level of the worthwhile measure compared to 28% in the rest of the UK, although there was also a slightly higher percentage in the very low category in Wales. However, non-whites living in Wales reported a higher level of happiness, with only 6% stating a very low level of happiness compared to around 12% of whites living in Wales. The results for anxiety are again different since non-whites living in

[3] ONS (2012) report large variations in life satisfaction between ethnic minority groups in the UK. Mean levels of satisfaction ranged from 6.6 for the Black groups, to 7.0 for Pakistanis, 7.1 for Bangladeshis, 7.3 for the Chinese and 7.4 for Indians.

Wales reported a higher mean level of anxiety. This was mainly due to the relatively small percentage in the very low anxiety category (25%), compared with 38% of whites in Wales and 30% of ethnic minorities in the rest of the UK.

Table 3.3. Variations in Happiness by Equality Groups

	Happy Yesterday					
	Very low	**Low**	**Medium**	**High**	**Mean**	**N**
Male	11.1	16.6	40.2	32.1	7.3	3903
Female	11.5	16.6	36.1	35.7	7.4	5216
Aged 16-24	13.5	16.3	36.0	34.2	7.2	510
Aged 25-34	10.5	16.1	39.2	34.1	7.4	1090
Aged 35-44	11.9	17.7	42.0	28.4	7.2	1251
Aged 45-54	12.6	18.0	40.3	29.2	7.1	1633
Aged 55-64	11.3	17.1	37.5	34.1	7.3	1882
Aged 65-74	7.9	13.2	36.5	42.4	7.8	1665
Aged 75 & over	10.6	17.3	32.3	39.8	7.5	1088
White	11.5	16.5	38.1	33.9	7.3	8940
Ethnic Minority	5.8	19.5	38.0	36.8	7.5	176
No disability	8.6	15.9	40.4	35.1	7.5	5328
Disability	20.2	20.2	33.1	26.5	6.6	2181
No Welsh identity	10.2	16.8	39.4	33.6	7.4	3670
Welsh identity	12.1	16.5	37.2	34.2	7.3	5449

Notes: The sample is restricted to individuals aged over 16 who are resident in Wales. The data are weighted but an unweighted sample size N is also reported for each category. Disability has been defined using the *lnglim* and *healim* variables since the *discurr* variable was not included in the APS dataset received from the ONS.

The next equality group included in Tables 3.1-3.4 relates to disability. Table 3.1 indicates that life satisfaction is far lower amongst those reporting a disability, with their mean rating a whole point below that seen for people without a disability. This differential is mainly the result of a high incidence of people with disabilities reporting either a very low (16.4%) or low (25.3%) level of satisfaction. In contrast, less than 5% of people without a disability stated that satisfaction with their life was very low and around 15% stated that it was low. The life satisfaction statistics observed for people with and without disabilities in the rest of the UK in Table A1 are again very similar. The difference in mean ratings is slightly lower (0.7) for the worthwhile measure, with a higher percentage of people with disabilities reporting either very low or low levels of SWB using this measure. The mean differential again widens to almost one point when the happiness measure is considered, with over 20% of people with disabilities reporting a very low level of happiness on the day prior to the interview. The difference in mean ratings between the two disability groups using the anxiety measure of SWB is 1.1. This occurs since almost a third of the group reporting a disability state that they had a very high level of anxiety on the previous day. This pattern is again repeated for the rest of the UK, although the differentials do appear to be slightly wider in Wales, both because of relatively higher levels of anxiety reported by people with disabilities and relatively lower levels for those without.

Table 3.4. Variations in Anxiety by Equality Groups

	Anxious Yesterday					
	Very high	**High**	**Medium**	**Low**	**Mean**	**N**
Male	19.4	18.7	23.7	38.2	3.0	3898
Female	24.7	17.8	20.1	37.4	3.3	5210
Aged 16-24	20.4	20.2	22.3	37.1	3.1	510
Aged 25-34	19.0	16.6	22.6	41.8	2.8	1090
Aged 35-44	20.7	20.9	22.9	35.5	3.2	1247
Aged 45-54	25.4	18.0	22.5	34.2	3.4	1633
Aged 55-64	26.0	17.6	21.9	34.6	3.4	1882
Aged 65-74	21.2	15.9	20.2	42.8	2.9	1663
Aged 75 & over	21.2	17.6	19.4	41.7	3.0	1083
White	22.2	17.8	21.8	38.2	3.1	8930
Ethnic Minority	18.6	32.0	24.6	24.8	3.7	175
No disability	18.7	18.0	23.3	40.0	2.9	5325
Disability	32.4	19.5	19.0	29.1	4.0	2178
No Welsh identity	21.0	18.9	23.6	36.5	3.1	3662
Welsh identity	22.9	17.8	20.7	38.6	3.2	5446

Notes: The sample is restricted to individuals aged over 16 who are resident in Wales. The data are weighted but an unweighted sample size N is also reported for each category. Disability has been defined using the *lnglim* and *healim* variables since the *discurr* variable was not included in the APS dataset received from the ONS.

Respondents who indicated that they had a Welsh identity have a lower level of life satisfaction than those who did not identify in this way. This is the result of those with a Welsh identity being both more likely to report a low or very low level of satisfaction as well as being less likely to be in the high satisfaction category. This finding obviously dependent on which parts of Wales that Welsh identity is highest. Welsh identity does vary across Wales and amongst the overall population is highest in the South Wales Valleys (ONS, 2004). An analysis of SWB differences between spatial areas within Wales appears in sub-section 3.3. The differences between people reporting that they have a Welsh identity and those that do not are not as great for the other measures of SWB. Tables A1-A4 (see Appendix) also contain SWB statistics for those reporting a Welsh identity in the rest of the UK. Here the findings are fairly mixed, with Welsh identifiers reporting higher SWB scores on two of the measures (life satisfaction and the worthwhile measure) but not on the other two, which is likely to be partly an outcome of the fairly small sample size for this group.

3.2. Other Personal Characteristics

The following section considers how the four measures of SWB vary by a range of other personal characteristics including highest education level, labour market status and self-reported health status.

Table 3.5 presents the concentration of individuals reporting very low to high levels of life satisfaction and the mean rating for life satisfaction split by a range of personal

characteristics that may be associated with SWB. The top panel of the table contains splits by highest educational qualification which range from no qualifications to qualifications at degree level or higher. Due to the way educational attainment is collected in the APS, the sample is restricted to those of working age (16-59 for women and 16-64 for men). The mean level of satisfaction is 7.7 for those with degree level qualifications compared to 6.8 for those with no qualifications, indicating the former report considerably higher life satisfaction on average. Consistent with this, the distribution of responses is concentrated among the very low (14%) and low (26%) categories for those with no qualifications relative to those with a degree level education where the corresponding figures are 3% and 13% respectively. There is less variation among the intermediate qualification groups which include qualifications at the equivalent of GCSEs and A levels.

Table 3.5. Variations in Life Satisfaction by Other Personal Characteristics

	Life Satisfaction					
	Very low	**Low**	**Medium**	**High**	**Mean**	**N**
Education						
Degree or equivalent	3.4	13.2	55.7	27.7	7.7	1270
Other higher education	9.6	15.5	48.2	26.7	7.3	639
A-level or equivalent	7.4	16.4	51.9	24.4	7.4	1320
GCSE grades A*-C or equivalent	7.8	20.3	47.7	24.3	7.3	1436
Other qualifications	10.9	25.3	36.3	27.6	7.1	526
No qualifications	13.6	26.0	35.6	24.7	6.8	645
Self-reported Health						
Very Good	2.7	11.2	49.2	37.0	8.0	2837
Good	5.1	17.8	53.9	23.3	7.4	2954
Fair	11.8	25.5	42.9	19.8	6.9	1553
Bad	28.4	32.7	29.1	9.8	5.6	552
Very Bad	38.1	31.5	15.6	14.8	4.9	137
Marital Status						
Single (never married)	8.5	19.6	46.8	25.1	7.3	2090
Married	4.6	13.4	49.8	32.2	7.7	4736
Divorced	12.9	24.9	43.5	18.6	6.8	1333
Widowed	9.1	21.1	41.9	27.9	7.3	965
Housing Tenure						
Owned outright	4.7	14.4	48.3	32.6	7.7	3740
Being bought with a mortgage or loan	5.4	14.7	53.2	26.6	7.5	2896
Private landlord	9.4	21.8	42.8	26.1	7.2	1093
Social housing	14.7	26.1	37.4	21.9	6.7	1364

Notes: The sample is restricted to individuals aged over 16 who are resident in Wales. The data are weighted but an unweighted sample size N is also reported. The analysis of qualifications is restricted to those of working age and the analysis of health is restricted to those aged less than 75. The definition of marriage includes civil partnerships and divorced includes dissolved civil partnerships.

The second panel of Table 3.5 considers life satisfaction by self-reported health status. This is a subjective measure of general health[4] and responses are ranked from very good to very bad. Due to the nature of the collection of health within the APS, the analysis of general health is restricted to those aged less than 75. As may be expected, there is a strong positive association between health and life satisfaction, that is, individuals who report better health also report higher levels of life satisfaction. The mean level of life satisfaction for those in very good health is 8.0, compared to only 4.9 for those who report their health is very bad. The latter figure represents the lowest mean for any of the groups considered here. Indeed 38% of those who report bad health report very low life satisfaction. This measure of health is, however, subjective and analysis of the relationship between subjective health measures and life satisfaction may be affected by common method bias, that is, other factors (e.g. personality traits such as being optimistic or pessimistic) may affect the way individuals respond to both questions in the same manner.

The third panel of Table 3.5 considers life satisfaction by marital status and distinguishes between those who are single and have never been married, those who are married, those who are divorced or separated and those who have been widowed. Those who are married report the highest mean level of satisfaction at 7.7 and those who are divorced the lowest at 6.8. Consistent with this, nearly 13% of those who are divorced report very low satisfaction compared to less than 5% for those who are married. The final panel of Table 3.5 considers housing tenure where the groups are defined as home owned outright, bought with a mortgage or loan or renting, the latter is separated into renting from a private landlord and social housing.[5] The mean level of satisfaction declines across these groups with those who own their homes outright reporting a mean of 7.7 compared to 6.7 for those who live in social housing. Among the latter nearly 15% report very low satisfaction compared to less than 5% among those who own their home outright.

Tables 3.6-3.8 present corresponding figures for the three other measures of SWB, namely the worthwhile measure, happiness yesterday and anxiety yesterday. Although there are quantitative differences in the distribution and means between the measures there are some consistent patterns in terms of the relative SWB of groups of individuals defined by their personal characteristics. Consistent with the analysis of life satisfaction, individuals who report having bad or very bad health have lower mean values for the worthwhile measure and happiness. Indeed, of those who report very bad health 47% report a very low score on happy yesterday compared to 6% of those who report very good health.

Education is positively associated with both the worthwhile measure and happiness. Of those with no qualifications, 11% (21%) gave a very low response to the worthwhile measure (happiness) whereas the corresponding figure for those with a degree level qualification is 2% (7%) respectively. In terms of marital status, again it is individuals who are married that report the highest average levels for the worthwhile measure and happiness. However, divorce appears to have a smaller negative association with the worthwhile measure than satisfaction or happiness. The negative association between living in rented accommodation and SWB is confirmed

[4] *How is your health in general; would you say it was… (1) very good (2) good (3) fair (4) bad or very bad (5)?*

[5] Social renting includes renting from a local authority or housing association.

for both the worthwhile measure and happiness and social housing has the largest impact.

Table 3.6 Variations in the Worthwhile Measure by Other Personal Characteristics

	Things in Life are Worthwhile					
	Very low	**Low**	**Medium**	**High**	**Mean**	**N**
Education						
Degree or equivalent	2.4	11.7	51.3	34.6	7.9	1267
Other higher education	5.0	17.7	47.9	29.4	7.6	639
A-level or equivalent	4.7	15.1	50.8	29.5	7.6	1319
GCSE grades A*-C or equivalent	5.7	18.1	46.9	29.3	7.5	1433
Other qualifications	8.8	20.9	38.1	32.3	7.3	524
No qualifications	10.9	20.6	41.7	26.9	7.2	642
Self-reported Health						
Very Good	2.4	11.5	45.1	41.0	8.1	2834
Good	3.2	15.1	52.6	29.1	7.7	2947
Fair	7.6	21.7	45.1	25.6	7.3	1552
Bad	20.2	26.4	34.4	19.1	6.4	545
Very Bad	30.1	27.0	16.1	26.8	5.8	129
Marital Status						
Single (never married)	7.4	18.7	46.8	27.0	7.4	2086
Married	2.6	11.7	47.1	38.6	8.0	4718
Divorced	7.8	20.7	43.5	28.0	7.3	1326
Widowed	6.5	18.3	40.9	34.3	7.6	955
Housing Tenure						
Owned outright	3.1	12.6	46.2	38.1	8.0	3725
Being bought with a mortgage or loan	3.0	12.3	52.0	32.7	7.8	2888
Private landlord	7.4	22.2	41.2	29.3	7.4	1089
Social housing	11.8	23.0	37.9	27.3	7.1	1352

Notes: The sample is restricted to individuals aged over 16 who are resident in Wales. The data are weighted but an unweighted sample size N is also reported. The analysis of qualifications is restricted to those of working age and the analysis of health is restricted to those aged less than 75. The definition of marriage includes civil partnerships and divorced includes dissolved civil partnerships.

Table 3.7. Variations in Happiness by Other Personal Characteristics

	Happy Yesterday					
	Very low	**Low**	**Medium**	**High**	**Mean**	**N**
Education						
Degree or equivalent	6.5	16.8	44.5	32.3	7.5	1268
Other higher education	14.2	17.5	38.7	29.7	7.1	638
A-level or equivalent	11.9	16.7	40.5	31.0	7.2	1314
GCSE grades A*-C or equivalent	12.8	16.0	38.4	32.9	7.3	1436
Other qualifications	12.7	20.1	34.1	33.1	7.2	526
No qualifications	21.0	19.5	31.6	27.9	6.6	648
Self-reported Health						
Very Good	6.0	13.0	38.2	42.9	7.9	2833
Good	9.0	18.1	43.5	29.4	7.3	2952
Fair	17.9	19.8	35.6	26.7	6.8	1554
Bad	32.6	21.7	27.9	17.8	5.7	554
Very Bad	47.1	17.4	18.8	16.7	5.0	134
Marital Status						
Single (never married)	12.8	17.0	39.0	31.2	7.2	2090
Married	8.5	14.6	38.9	38.0	7.6	4729
Divorced	16.4	20.3	36.0	27.3	6.9	1330
Widowed	13.1	20.3	33.1	33.5	7.1	970
Housing Tenure						
Owned outright	7.6	15.4	38.2	38.8	7.7	3737
Being bought with a mortgage or loan	8.1	16.2	43.0	32.8	7.5	2891
Private landlord	14.1	18.8	36.0	31.1	7.1	1091
Social housing	23.1	17.8	29.5	29.7	6.6	1369

Notes: The sample is restricted to individuals aged over 16 who are resident in Wales. The data are weighted but an unweighted sample size N is also reported. The analysis of qualifications is restricted to those of working age and the analysis of health is restricted to those aged less than 75. The definition of marriage includes civil partnerships and divorced includes dissolved civil partnerships.

The interpretation of reporting levels of anxiety yesterday (Table 3.8) differs slightly since it is negatively correlated with SWB. In most cases, however, similar conclusions can be drawn to the discussion above. For example, anxiety generally decreases with educational attainment, good health and living in owner occupied housing. The relationship with marital status is less consistent, while those divorced report the highest levels of anxiety, married individuals do not report lower levels of anxiety than single individuals.

Table 3.8. Variations in Anxiety by Other Personal Characteristics

	Anxious yesterday					
	Very high	**High**	**Medium**	**Low**	**Mean**	**N**
Education						
Degree or equivalent	18.1	19.4	27.6	34.9	3.0	1267
Other higher education	23.6	16.5	22.6	37.4	3.2	638
A-level or equivalent	20.8	18.8	21.3	39.1	3.0	1314
GCSE grades A*-C or equivalent	23.1	18.6	20.2	38.1	3.2	1436
Other qualifications	25.5	20.9	21.0	32.7	3.5	526
No qualifications	28.0	18.3	20.9	32.8	3.7	644
Self-reported Health						
Very Good	13.9	17.0	23.2	45.9	2.5	2834
Good	22.1	18.4	23.7	35.9	3.2	2949
Fair	30.4	20.5	20.3	28.9	3.8	1552
Bad	43.7	22.1	13.2	21.1	5.0	552
Very Bad	63.5	8.9	13.0	14.7	6.1	134
Marital Status						
Single (never married)	20.9	18.1	22.7	38.2	3.0	2087
Married	21.5	18.2	22.0	38.3	3.1	4730
Divorced	26.8	18.9	19.9	34.4	3.5	1329
Widowed	23.2	17.8	21.0	38.1	3.2	962
Housing Tenure						
Owned outright	20.6	16.0	22.8	40.6	2.9	3735
Being bought with a mortgage or loan	21.0	17.6	22.9	38.5	3.0	2891
Private landlord	22.0	22.5	21.7	33.8	3.2	1089
Social housing	28.1	19.5	17.5	34.9	3.6	1362

Notes: The sample is restricted to individuals aged over 16 who are resident in Wales. The data are weighted but an unweighted sample size N is also reported. The analysis of qualifications is restricted to those of working age and the analysis of health is restricted to those aged less than 75. The definition of marriage includes civil partnerships and divorced includes dissolved civil partnerships.

Table 3.9 presents life satisfaction by labour market status and separates individuals into those who are full-time employees, part-time employees, self-employed, ILO unemployed and economically inactive. Within the inactive group individuals are further separated on the reason for inactivity – student, looking after family or home, temporarily or long-term sick or disabled, retired from paid work and other.

The distribution and mean levels of satisfaction reported by full and part-time employees are broadly similar. Those in self-employment are slightly more likely to report high levels of satisfaction than employees. Consistent with analysis at the UK level (ONS, 2012) unemployment is associated with lower levels of satisfaction. Nearly 20% of those who are unemployed report very low levels of satisfaction compared to 4% among full-time employees. This is unsurprising since, by definition, individuals who are unemployed are not in their desired state which is employment.

Table 3.9 Variations in Life Satisfaction by Labour Market Status

	Life Satisfaction					
	Very low	**Low**	**Medium**	**High**	**Mean**	**N**
Full-time employee	4.1	14.6	54.6	26.7	7.6	2537
Part-time employee	5.6	17.1	50.2	27.2	7.5	1223
Self-employment	3.2	16.6	50.6	29.6	7.7	665
Unemployment	19.5	24.5	37.4	18.6	6.5	384
Inactive – student	-	-	-	-	7.9	114
Inactive – looking after family or home	8.3	21.8	40.0	30.0	7.4	480
Inactive – short or long-term disabled	23.9	34.2	28.4	13.4	5.9	726
Inactive – retired	6.3	14.8	44.4	34.6	7.7	2819
Inactive – other	5.4	18.0	44.0	32.7	7.6	172

Notes: The sample is restricted to individuals aged over 16 who are resident in Wales. The data are weighted but an unweighted sample size N is also reported for each category. The sample size for inactive - student is not sufficient for analysis of the distribution of responses.

Analysis at the UK level (ONS, 2012) also finds that the duration of unemployment is negatively associated with life satisfaction or, that the long-term unemployed report particularly low SWB. On average those who are economically inactive report a higher level of satisfaction than the unemployed. However, there is substantial variation in satisfaction reported within the inactive group. It is those who are inactive due to a short or long-term health problem or disability that report the lowest mean level of satisfaction at 5.9. Among this group 24% report their life satisfaction as very low and only 13% report high levels of satisfaction.[6] The mean levels of satisfaction are more similar across the other reasons for inactivity consistent with individuals, at least in part, choosing to be in these states.

Tables 3.10-3.12 present corresponding figures for the three other measures of SWB. Consistent with the analysis of satisfaction it is the inactive – short or long-term disabled that have the lowest mean rating for the worthwhile measure (6.5) and happy yesterday (6.0) and this is followed by those who are unemployed where the average is 6.8 for both measures. The inactive – short or long-term disabled also report high levels of anxiety yesterday with 43% of this group reporting very high levels. In contrast to the other measures of SWB, the mean levels of anxiety among the unemployed is only slightly above the other inactive groups. Individuals who are classed as inactive – students report relatively high levels of anxiety with an overall mean of 4.0 and 32% in the very high category.

It should be noted that this analysis considers the association between SWB and a range of personal characteristics treating each in isolation. Since these personal characteristics are likely to be correlated (for example, there is a well established positive correlation between education and health) it is important to consider multiple characteristics simultaneously in a multivariate framework. This facilitates the

[6] The sample is not sufficient to perform separate analysis of the short and long-term sick or disabled. However, UK-wide analysis (ONS, 2012) finds no difference in the mean levels of satisfaction between those inactive due to temporary or long-term sickness.

examination of a given characteristic holding other observable characteristics constant.

Table 3.10. Variations in the Worthwhile Measure by Labour Market Status

	Things in Life are Worthwhile					
	Very low	**Low**	**Medium**	**High**	**Mean**	**N**
Full-time employee	2.2	14.0	52.4	31.4	7.8	2534
Part-time employee	3.3	15.1	49.1	32.5	7.8	1223
Self-employment	2.6	11.5	46.2	39.7	8.0	663
Unemployment	14.3	24.0	37.7	24.0	6.8	382
Inactive – student	-	-	-	-	7.4	114
Inactive – looking after family or home	6.1	14.1	42.2	37.7	7.8	479
Inactive – short or long-term disabled	18.4	26.3	33.6	21.8	6.5	721
Inactive – retired	4.7	14.0	42.2	39.1	7.9	2795
Inactive – other	-	-	-	-	7.8	170

Notes: The sample is restricted to individuals aged over 16 who are resident in Wales. The data are weighted but an unweighted sample size N is also reported for each category. The sample sizes for inactive - student and inactive – other are not sufficient for analysis of the distribution of responses.

Table 3.11. Variations in Happiness by Labour Market Status

	Happy Yesterday					
	Very low	**Low**	**Medium**	**High**	**Mean**	**N**
Full-time employee	8.2	16.5	42.0	33.3	7.5	2534
Part-time employee	9.4	17.8	41.8	31.1	7.4	1224
Self-employment	9.7	15.8	41.8	32.7	7.4	664
Unemployment	18.7	17.4	33.9	30.0	6.8	383
Inactive – student	-	-	-	-	7.3	114
Inactive – looking after family or home	13.2	15.4	33.8	37.6	7.3	479
Inactive – short or long-term disabled	29.4	21.8	27.8	20.9	6.0	727
Inactive – retired	9.0	15.0	34.8	41.2	7.7	2818
Inactive – other	12.4	14.6	30.7	42.3	7.4	172

Notes: The sample is restricted to individuals aged over 16 who are resident in Wales. The data are weighted but an unweighted sample size N is also reported for each category. The sample size for inactive - student is not sufficient for analysis of the distribution of responses.

Table 3.12. Variations in Anxiety by Labour Market Status

	Anxious yesterday					
	Very high	**High**	**Medium**	**Low**	**Mean**	**N**
Full-time employee	17.0	18.8	25.3	38.9	2.8	2533
Part-time employee	22.6	18.7	20.6	38.1	3.1	1224
Self-employment	18.3	17.9	26.0	37.9	2.9	661
Unemployment	23.7	16.8	23.3	36.2	3.3	382
Inactive – student	32.1	24.7	13.2	30.0	4.0	114
Inactive – looking after family or home	22.0	19.2	20.6	38.1	3.2	479
Inactive – short or long-term disabled	42.7	20.1	13.5	23.8	4.7	724
Inactive –retired	21.4	16.4	20.2	42.0	3.0	2815
Inactive –other	25.9	13.2	23.9	37.0	3.1	172

Notes: The sample is restricted to individuals aged over 16 who are resident in Wales. The data are weighted but an unweighted sample size N is also reported for each category.

3.3. Area of Residence

This sub-section considers different spatial dimensions of the four measures of SWB for Wales. The results are based on weighted data taken from the APS and three different 'geographies' are considered: the 22 local government Unitary Authorities (UAs); urban versus rural classifications; and LSOAs allocated to different quartiles of the WIMD.

For each of the 22 Welsh UAs, Tables 3.13 to 3.16 show the reported distribution of SWB in Wales for each of the ONS measures. Table 3.13 report the results for life satisfaction, Table 3.14 for the worthwhile measure, Table 3.15 for happiness and Table 3.16 for anxiety. Intra-regional variations in SWB tend to be significantly larger than corresponding inter-regional variations for each of the measures of SWB. Thus while ONS (2012) indicates that the inter-regional variation in mean ratings of life satisfaction ranged from a low of 7.2 in West Midlands to a high of 7.6 in Northern Ireland, within Wales the variation in life satisfaction is significantly larger and ranges from a low of 7.1 in Blaenau Gwent, Merthyr and Torfaen to a high of 7.8 for the Isle of Anglesey.

UAs in Wales reporting the highest proportion of individuals with 'low' or 'very low' levels of life satisfaction (Table 3.13) are Blaenau Gwent (34.4%), Torfaen (33%), Merthyr (32%), and Rhondda Cynon Taff (31.1%), while the UA with the lowest proportion of individuals reporting outcomes in the 'low' or 'very low' categories is Cardiff (18.9%). UAs in Wales with average levels of life satisfaction above the All Wales average (7.4) are the Isle of Anglesey (7.8); Pembrokeshire (7.7); Cardiff, Ceredigion, Flintshire, Monmouthshire, and Powys (7.6); and Bridgend, Denbighshire, Vale of Glamorgan, and Wrexham (7.5). By way of contrast, those UAs in Wales with average levels of life satisfaction below the All Wales average are Blaenau Gwent, Merthyr, and Torfaen (7.1); Neath and Port Talbot, and Swansea (7.2); and Caerphilly, Carmarthenshire, Conwy, and Rhondda Cynon Taff (7.3). Life

satisfaction therefore tends to be lower in the South Wales Valleys, which will also be shown to be the case below for the other measures of SWB.

Table 3.13. Variations in Life Satisfaction by Unitary Authority

	Life Satisfaction					
	Very low	**Low**	**Medium**	**High**	**Mean**	**N**
Blaenau Gwent	12.8	21.6	40.3	25.3	7.1	285
Bridgend	5.6	19.6	46.0	28.8	7.5	409
Caerphilly	7.9	17.9	51.5	22.7	7.3	430
Cardiff	7.2	11.7	49.5	31.6	7.6	429
Carmarthenshire	6.8	20.9	47.5	24.8	7.3	448
Ceredigion	3.7	17.3	50.3	28.8	7.6	350
Conwy	6.7	21.2	45.4	26.8	7.3	426
Denbighshire	5.7	19.9	47.6	26.8	7.5	454
Flintshire	6.9	13.6	48.9	30.6	7.6	364
Gwynedd	9.0	14.1	48.5	28.4	7.4	470
Isle of Anglesey	6.0	16.1	42.0	35.9	7.8	352
Merthyr	12.9	19.1	38.1	29.9	7.1	316
Monmouthshire	4.8	15.5	49.8	29.9	7.6	435
Neath Port Talbot	8.2	20.8	47.2	23.8	7.2	416
Newport	6.4	17.6	49.1	26.9	7.4	404
Pembrokeshire	4.6	13.3	52.3	29.8	7.7	478
Powys	5.3	15.7	48.7	30.3	7.6	497
Rhondda Cynon Taff	8.0	23.1	41.7	27.3	7.3	434
Swansea	9.4	18.8	49.3	22.5	7.2	464
Torfaen	11.1	21.9	43.4	23.6	7.1	461
Vale of Glamorgan	7.9	14.5	49.1	28.6	7.5	454
Wrexham	5.8	19.7	42.7	31.9	7.5	348

Notes: The sample is restricted to individuals aged over 16 who are resident in Wales. The data are weighted but an unweighted sample size N is also reported for each category.

Examining the results for the other longer term measure of wellbeing reported by ONS, the worthwhile measure (Table 3.14), there seems to be clear evidence of a positive association between the average levels SWB reported for both the worthwhile and life satisfaction measures across areas within Wales. For example, Blaenau Gwent, Torfaen, Neath Port Talbot, Carmarthenshire, Swansea and Rhondda Cynon Taff, all of which have mean ratings for life satisfaction below the All Wales average, also have average ratings of the worthwhile measure below the corresponding All Wales average (7.7). Similarly, Bridgend, Denbighshire, Flintshire, Isle of Anglesey, Pembrokeshire and Powys have higher means than the All Wales average for both the life satisfaction and worthwhile measures of wellbeing. It is likely that these two long-term measures of wellbeing are closely connected and share a common set of determinants. However, the data also suggests important differences in the two measures; which is illustrated by the significantly higher incidence of individuals reporting ‘high’ levels of wellbeing on the worthwhile measure compared to those reporting ‘high’ levels of wellbeing on the life satisfaction measure. A full

explanation of these and other differences in the results reported in this section is only likely to be achieved by using multivariate analysis, which should be capable of shedding light on the key factors determining outcomes on each measure of SWB.

Table 3.14. Variations in the Worthwhile Measure by Unitary Authority

	Things in Life are Worthwhile					
	Very low	**Low**	**Medium**	**High**	**Mean**	**N**
Blaenau Gwent	7.9	19.1	42.1	30.8	7.5	284
Bridgend	2.6	12.7	52.7	32.4	7.9	405
Caerphilly	4.8	14.9	45.6	34.8	7.8	429
Cardiff	5.1	14.5	45.4	35.1	7.8	427
Carmarthenshire	5.0	16.9	50.1	28.0	7.5	444
Ceredigion	3.9	13.6	50.6	31.9	7.7	351
Conwy	5.2	14.4	43.0	37.4	7.8	424
Denbighshire	4.7	16.7	43.7	34.9	7.8	454
Flintshire	4.3	10.9	49.2	35.6	7.9	361
Gwynedd	3.8	14.2	47.6	34.4	7.8	471
Isle of Anglesey	2.1	13.3	44.3	40.3	8.1	347
Merthyr	9.2	17.7	41.4	31.8	7.9	315
Monmouthshire	4.2	15.3	48.9	31.6	7.7	435
Neath Port Talbot	5.9	18.8	48.9	26.4	7.4	415
Newport	5.6	16.5	48.5	29.5	7.6	401
Pembrokeshire	3.4	13.4	47.8	35.4	7.9	473
Powys	5.0	12.4	45.3	37.3	7.9	492
Rhondda Cynon Taff	5.7	20.8	43.4	30.1	7.5	435
Swansea	8.8	16.0	43.8	31.3	7.5	462
Torfaen	6.8	19.7	43.9	29.7	7.4	461
Vale of Glamorgan	4.5	15.7	46.4	33.4	7.7	454
Wrexham	4.6	18.6	40.2	36.6	7.7	345

Notes: The sample is restricted to individuals aged over 16 who are resident in Wales. The data are weighted but an unweighted sample size N is also reported for each category.

Interestingly a higher proportion of individuals in UAs in Wales report extreme values of the two shorter term measures of wellbeing, happiness and anxiety reported in Tables 3.15 and 3.16. For example, the incidence of individuals in Wales reporting 'very low' outcomes for the happiness measure of SWB is 11.3%, but individuals living in Merthyr (17.3%), Torfaen (16.6%), Blaenau Gwent (16.6%) Rhondda Cynon Taff (15.9%), Swansea (14.4%) and Caerphilly (14.4%) report the highest incidences of 'very low' outcomes for this measure. Similarly, the incidence of individuals reporting 'very high' levels of anxiety is 22.2% in Wales, and the highest incidences of severe anxiety is reported in Merthyr (33.1%) and Blaenau Gwent (28.8%). Mean levels of happiness are highest for the Isle of Anglesey (7.8); Flintshire, Monmouthshire, Pembrokeshire and Powys (7.7); and lowest for Torfaen (6.9) and Blaenau Gwent, Carmarthenshire, Merthyr, and Swansea (7.0). Similar patterns of SWB are reported for the anxiety measure and there seems to be a reasonably strong correlation between the short and long-term measures of SWB reported for UAs in

Wales. Thus a lower concentration low levels of life satisfaction, the worthwhile measure and happiness all tend to be related to high levels of anxiety, which suggests they share common characteristics that in turn determine the individual wellbeing measures.

Table 3.15. Variations in Happiness by Unitary Authority

	Happy Yesterday					
	Very low	**Low**	**Medium**	**High**	**Mean**	**N**
Blaenau Gwent	16.6	19.1	28.8	35.6	7.0	285
Bridgend	9.6	15.7	41.2	33.5	7.4	409
Caerphilly	14.4	17.0	35.5	33.1	7.1	429
Cardiff	10.9	14.4	37.9	36.8	7.5	428
Carmarthenshire	11.8	19.2	42.3	26.8	7.0	448
Ceredigion	7.6	17.1	41.5	33.8	7.5	348
Conwy	8.5	17.1	42.9	31.5	7.4	426
Denbighshire	9.1	18.0	38.7	34.2	7.4	455
Flintshire	7.7	12.7	42.1	37.5	7.7	364
Gwynedd	10.2	14.7	42.8	32.4	7.4	471
Isle of Anglesey	7.2	12.0	39.0	41.8	7.8	352
Merthyr	17.3	18.1	30.5	34.1	7.0	315
Monmouthshire	6.9	18.8	36.9	37.5	7.7	434
Neath Port Talbot	11.7	20.8	37.6	30.0	7.1	417
Newport	12.3	15.7	34.9	37.1	7.3	404
Pembrokeshire	7.7	15.3	42.0	35.0	7.6	476
Powys	7.1	16.9	38.0	38.0	7.7	496
Rhondda Cynon Taff	15.9	16.2	34.9	33.1	7.1	436
Swansea	14.6	19.1	35.7	30.5	7.0	463
Torfaen	16.6	17.2	39.1	27.1	6.9	460
Vale of Glamorgan	8.5	17.9	39.2	34.3	7.5	455
Wrexham	11.9	15.6	34.6	37.9	7.4	348

Notes: The sample is restricted to individuals aged over 16 who are resident in Wales. The data are weighted but an unweighted sample size N is also reported for each category.

Table 3.16. Variations in Anxiety by Unitary Authority

	Anxious Yesterday					
	Very High	**High**	**Medium**	**Low**	**Mean**	**N**
Blaenau Gwent	28.8	17.4	21.1	32.7	3.6	285
Bridgend	22.6	13.9	18.6	45.0	2.9	409
Caerphilly	24.4	19.6	22.5	33.6	3.4	428
Cardiff	20.3	20.3	22.7	36.7	3.1	428
Carmarthenshire	22.0	19.9	23.6	34.4	3.2	448
Ceredigion	18.1	16.1	27.8	38.1	2.9	349
Conwy	19.5	20.1	28.3	32.1	3.2	426
Denbighshire	19.0	15.4	23.5	42.2	2.8	455
Flintshire	23.9	14.3	17.2	44.7	2.9	362
Gwynedd	20.7	15.2	26.7	37.3	3.0	472
Isle of Anglesey	16.6	14.6	22.1	46.6	2.6	351
Merthyr	33.1	16.2	18.5	32.3	3.9	316
Monmouthshire	18.0	16.7	20.0	45.4	2.7	435
Neath and Port Talbot	24.2	17.9	23.8	34.1	3.3	415
Newport	18.7	20.5	22.2	38.5	3.0	401
Pembrokeshire	16.7	19.5	26.7	37.2	2.9	475
Powys	20.9	17.6	25.3	36.3	3.1	496
Rhondda Cynon Taff	24.3	18.4	17.7	39.6	3.3	433
Swansea	25.8	21.0	18.9	34.2	3.6	462
Torfaen	21.4	19.4	18.5	40.7	3.1	460
Vale of Glam	24.9	19.1	18.1	38.0	3.2	455
Wrexham	23.0	16.5	21.9	38.6	3.1	347

Notes: The sample is restricted to individuals aged over 16 who are resident in Wales. The data are weighted but an unweighted sample size N is also reported for each category.

Tables 3.17 to 3.20 consider outcomes on the 4 ONS wellbeing measures across a number of different urban and rural classifications in Wales. The urban/rural indicators used in the analysis are derived from the variable named URINDEW in the APS and are defined as Urban (>10k), Town and Fringe, Village, and Hamlet and isolated Dwellings. Table 3.17 reports the results for life satisfaction, Table 3.18 for the worthwhile measure, Table 3.19 for happiness and Table 3.20 for anxiety. An examination of the results reported in Tables 3.17 to 3.20 shows that SWB in Wales tends to be lowest in urban areas and highest in hamlets and isolated dwellings. Higher population densities therefore tend to be associated with lower levels of life satisfaction, the worthwhile and happiness measures of SWB. Take life satisfaction as an example. Table 3.17 shows that the average level of life satisfaction of individuals living in 'urban' areas in Wales is 7.3, compared to 7.4 in 'town and fringe', and 7.7 in both 'villages' and 'hamlets and isolated dwellings'. It also tends to be the case that extreme values of the reported wellbeing measures follow a similar pattern, with the proportion of individuals reporting extreme values of wellbeing, ('very low' or 'high') being larger among individuals living in 'urban' and 'town and fringe' areas than those living in either 'villages' or 'hamlets and isolated dwellings'. However, as with the results reported for the UA analysis, the proportion of individuals reporting

extreme values ('very low') on the happiness measure of SWB are consistently larger than on either the life satisfaction and worthwhile measures.

Table 3.17 Variations in Life Satisfaction by Urban/Rural Indicators

	Life Satisfaction					
	Very low	**Low**	**Medium**	**High**	**Mean**	**N**
Urban	8.1	18.5	46.7	26.7	7.3	5300
Town and Fringe	6.8	18.3	47.3	27.6	7.4	1615
Village	5.5	14.5	47.9	32.1	7.7	1355
Hamlet	4.3	12.8	51.8	31.2	7.7	852

Notes: The sample is restricted to individuals aged over 16 who are resident in Wales. The data are weighted but an unweighted sample size N is also reported for each category.

Table 3.18. Variations in the Worthwhile Measure by Urban/Rural Indicators

	Things in Life are Worthwhile					
	Very low	**Low**	**Medium**	**High**	**Mean**	**N**
Urban	5.8	16.9	45.3	32.0	7.6	5276
Town and Fringe	4.7	16.2	46.3	32.8	7.7	1607
Village	3.8	11.5	46.8	37.9	8.0	1351
Hamlet	2.9	11.7	50.9	34.5	7.9	849

Notes: The sample is restricted to individuals aged over 16 who are resident in Wales. The data are weighted but an unweighted sample size N is also reported for each category.

Anxiety also tends to be higher in 'urban' areas in Wales compared to other areas, as shown in Table 3.20. The average of the *anxiety* measure of SWB, for example, is 3.3 in 'urban' in Wales compared to an average of 3.0 for those living in 'town and fringe' and 'village' areas, and 2.9 for 'Hamlets and isolated dwelling'. Proportionally more individuals, however, report extreme ('very high') levels of anxiety than extremes on any of the other measures of wellbeing. Individuals living in 'urban' areas in Wales report the highest levels of extreme ('very high') anxiety, 23% compared to only 17% for those living in 'hamlets and isolated dwellings'. Thus while extreme levels of anxiety are reported in all areas, those living in urban areas seem to suffer most from the pressures of modern day living.

Table 3.19. Variations in Happiness by Urban/Rural Indicators

	Happy Yesterday					
	Very low	**Low**	**Medium**	**High**	**Mean**	**N**
Urban	12.7	17.0	37.1	33.3	7.3	5300
Town and Fringe	9.6	17.0	38.5	34.8	7.4	1612
Village	8.8	15.5	40.0	35.7	7.5	1356
Hamlet	7.0	14.6	43.2	35.2	7.6	849

Notes: The sample is restricted to individuals aged over 16 who are resident in Wales. The data are weighted but an unweighted sample size N is also reported for each category.

Table 3.20. Variations in Anxiety by Urban/Rural Indicators

	Anxious Yesterday					
	Very High	**High**	**Medium**	**Low**	**Mean**	**N**
Urban	23.0	19.3	20.7	37.0	3.3	5286
Town and Fringe	21.6	15.3	23.2	39.9	3.0	1613
Village	21.1	16.7	24.2	38.2	3.0	1356
Hamlet	17.0	17.2	26.7	39.1	2.9	851

Notes: The sample is restricted to individuals aged over 16 who are resident in Wales. The data are weighted but an unweighted sample size N is also reported for each category.

Tables 3.21 to 3.24 show the distribution of SWB across different quartiles of the WIMD. The index is calculated on the basis of eight separate domains (income, employment, health, education, access to services, community safety, physical environment, and housing), which are weighted to give an overall rank index. The results reported below are for the overall index, which is in turn sub-divided into quartiles that provide a relative measure of deprivation. The WIMD is collected for each of the 1,896 LSOAs in Wales and mapped onto the APS at the same level. LSOAs are designed to have stable population sizes and allow comparisons to be made across areas over time. Because WIMD is a rank index, lower levels of the overall index indicates areas that are relatively more deprived, while higher values of the index indicate areas that are less deprived. In the tables reported below, therefore, as you move to higher quartiles you are moving to areas that are relatively less deprived than areas in lower quartiles.

Table 3.21. Variations in Life Satisfaction by WIMD Quartile

	Life Satisfaction					
	Very low	**Low**	**Medium**	**High**	**Mean**	**N**
Most Deprived						
First quartile	11.2	21.3	42.6	25.0	7.1	1923
Second quartile	8.1	19.6	45.5	26.9	7.3	2384
Third quartile	5.2	15.6	50.1	29.2	7.6	2518
Least Deprived						
Fourth quartile	4.9	14.0	51.1	30.0	7.7	2299

Notes: The sample is restricted to individuals aged over 16 who are resident in Wales. The data are weighted but an unweighted sample size N is also reported for each category.

A clear pattern of results emerge for the WIMD measure reported in Tables 3.21 to 3.24. As you move to relatively more deprived areas levels of wellbeing, as measured by life satisfaction, worthwhile and happiness all decline. For life satisfaction, for example, the mean score rises from 7.1 for the most deprived areas (first quartile) to 7.7 for the least deprived areas (fourth quartile). Similarly for the same measures of wellbeing, the proportion of individuals reporting 'very low' outcomes for wellbeing tends to be higher in more deprived areas than in less deprived areas. Hence the proportion of individuals reporting 'very low' levels of life satisfaction that live in

areas which are in the most deprived quartile is 11.2% compared to only 4.9% in areas that are in the least deprived quartile. At the other extreme of the distribution, the proportion of individuals reporting high levels of wellbeing in terms of life satisfaction, the worthwhile measure and happiness are lowest in the most deprived areas and highest in the least deprived areas. Given the various domains making up the WIMD, it is clear from previous analysis provided in this report that SWB tends to be higher for those in employment, with good qualifications and in good health.

Table 3.22. Variations in the Worthwhile Measure by WIMD Quartile

	Things in Life are Worthwhile					
	Very low	**Low**	**Medium**	**High**	**Mean**	**N**
Most Deprived						
First quartile	7.7	20.0	42.6	29.7	7.4	1913
Second quartile	6.6	15.6	46.1	31.8	7.6	2368
Third quartile	3.4	14.1	47.6	35.0	7.9	2513
Least Deprived						
Fourth quartile	3.3	13.4	48.0	35.4	7.9	2291

Notes: The sample is restricted to individuals aged over 16 who are resident in Wales. The data are weighted but an unweighted sample size N is also reported for each category.

The picture described above for life satisfaction, the worthwhile measure and happiness also holds for the fourth measure of SWB, anxiety, reported in Table 3.24. Thus anxiety levels tend to be higher in more deprived areas and lower in the less deprived areas. However, there is evidence of increasingly high levels of anxiety as you move from the third quartile to the fourth quartile. In this instance therefore, there is a possible non-linear relationship between the measures of relative deprivation and anxiety used, with individuals in the least deprived areas seeing an increase in anxiety. However, they remain less anxious than individuals living in areas in the bottom half of all areas classified according to their rank score on the WIMD.

Table 3.23. Variations in Happiness by WIMD Quartile

	Happy Yesterday					
	Very low	**Low**	**Medium**	**High**	**Mean**	**N**
Most Deprived						
First quartile	16.7	17.7	34.3	31.4	7.0	1924
Second quartile	13.1	18.0	36.5	32.5	7.2	2385
Third quartile	8.2	16.5	39.4	36.0	7.6	2514
Least Deprived						
Fourth quartile	7.5	14.5	42.1	36.0	7.6	2296

Notes: The sample is restricted to individuals aged over 16 who are resident in Wales. The data are weighted but an unweighted sample size N is also reported for each category.

Table 3.24. Variations in Anxiety by WIMD Quartile

	Anxious Yesterday					
	Very High	**High**	**Medium**	**Low**	**Mean**	**N**
Most Deprived						
First quartile	23.6	18.8	19.5	38.0	3.3	1917
Second quartile	24.2	18.7	21.0	36.1	3.3	2379
Third quartile	19.2	18.1	23.4	39.3	2.9	2518
Least Deprived						
Fourth quartile	21.6	17.2	23.5	37.7	3.0	2294

Notes: The sample is restricted to individuals aged over 16 who are resident in Wales. The data are weighted but an unweighted sample size N is also reported for each category.

4. Regression Analysis

Multivariate regression analysis has been undertaken in order to more closely examine the main findings from the descriptive analysis. The models that have been estimated are binary probit models, which identify those respondents reporting low or very low levels of SWB, and ordered probit models. The latter set of models allow differences in characteristics between individuals reporting high, as well as the low and very low, levels of SWB to be examined. The models and the specifications that have been estimated are discussed in Section 4.1. The results for the probit models are then presented and commented upon, firstly for the UK in Section 4.2 and then for Wales in Section 4.3, whilst Section 4.4 contains a discussion of the ordered probit estimates. A summary of the main findings from the regression analysis can be found in Section 4.5.

By controlling for individual and area characteristics in these models, we aim to provide a more accurate picture of precisely which characteristics are associated with lower levels of SWB. The analysis particularly focuses on the impact of spatial variables in comparison to personal characteristics. In addition to the inclusion of a dummy for each UA in the models for Wales, controls for deprivation and type of area have been added in some specifications. As a result, we aim to assess the importance of 'people' relative to 'place' effects in explaining differences in SWB across individuals. However, given that the APS is only a single cross-section it may be that unexplained effects are ascribed to spatial differences. No attempt is made to discuss the impact of potentially important missing covariates in this chapter but a discussion of various methodological issues appears in the next chapter.

4.1. Modelling Approach

The main results relate to the estimation of binary probits with respect to identifying low or very low levels of SWB for the four different measures included in the APS namely life satisfaction, worthwhile, happy yesterday and anxious yesterday. These models are firstly estimated for the whole of the UK and they are then estimated just for Wales. Several different specifications are estimated for each set of models and the specifications are similar but not exactly the same for the models for the UK and Wales. The variables that have been included in the different specifications are generally based on the way in which the categories were reported in the descriptive analysis in the previous two chapters. However, there are some small variations and these are outlined below in the description of the specifications.

The first specification only includes controls for administrative areas and mode of interview. For the UK the administrative areas are government office regions (with Wales being the reference group), whilst for Wales the first specification includes a set of UA dummies (with Cardiff being the omitted category) and a dummy variable indicating whether the respondent's interview took place by telephone (rather than face-to-face). This latter control has been included because respondents interviewed over the phone report higher levels of SWB and there are spatial variations in the mode of interview across the UK.[7] A range of equality characteristics are added in the

[7] For example, the mean score for the life satisfaction measure for respondents interviewed via telephone in Wales is 7.6, compared to 7.2 for those who had a face-to-face interview. The percentage

second specification. There are some differences between the way in which the models have been specified for Wales and the UK. The UK estimates include a finer definition of ethnicity because of the flexibility afforded by the larger sample size, whilst just a single non-white dummy is included in the Welsh models. A dummy variable for those who stated that they had a Welsh identity was also included in the latter set of models. A 'no information on disability category' has also been included in both the UK and Wales models because a measure of disability is missing for a fairly high percentage of the sample and so a dummy variable of this type was added to maintain the sample size, which is important - especially for Wales. Similar dummy variables were also included in the third specification, which adds in controls for other characteristics. 'Missing information' categories have been included for variables indicating an individual's highest educational qualification and self-reported health. A small number of observations were excluded when the individual did not answer a particular question but where there wasn't an issue with a lack of information. This relates to marital status, housing tenure and the urban-rural indicator. As a result, the sample sizes that are reported in the descriptive analysis are largely preserved since the Welsh only models are based on over 9,000 observations, whilst there are almost 80,000 observations in the UK models. A fourth specification is also estimated for the Welsh sample. This includes dummies for WIMD quartiles (measured relative to the most deprived quartile) and indicators for whether the respondent resides in an urban or rural area.

The estimates for the probit models relate to the probabilities (reported as marginal effects from a probit model) of being in the low or very SWB categories, which is defined as a SWB threshold (0-6 for the first three measures and 4-10 for anxiety), relative to a particular reference category. The table reports this probability as a marginal effect, which is calculated at sample means. These can be interpreted as a percentage point differential if the marginal effect is multiplied by 100. For example, a marginal effect of 0.1 implies a 10 percentage point higher probability of being below the SWB threshold for that particular group compared to the reference group. Each table also reports a p-value for every marginal effect, which gives the lowest significance level at which a null hypothesis that a variable has no effect can be rejected using a two-sided test. Therefore a p-value below 0.05 (0.01) implies a significant effect at the 5% (1%) level. All of the tables contain unweighted estimates. The marginal effects are not that different using weighted and unweighted data, but the significance levels are reported because virtually all variables are significant in the weighted models because they are calculated using grossed up estimates. Therefore, the significance levels from the unweighted estimates are likely to be more meaningful for our purposes. Moreover, regression models that calculate probabilities from sample surveys tend to be estimated using unweighted data.

Two sets of ordered probit models are reported in the Appendix. The estimates for the four measures of SWB are presented first for the UK, based on the third specification discussed above. Whilst the four models for Wales are estimated using the final

being interviewed by telephone in the Welsh sample used in the regression analysis (51.8%) was slightly higher than for the UK as a whole (47.8%), with most of the other regions also clustered around the UK average. The two exceptions are Northern Ireland, where all respondents were interviewed face-to-face, and London, where only 35% of the sample received telephone interviews. There is also some variation across UAs within Wales, with the percentage being interviewed by phone ranging from 35.4% in Merthyr to 65.3% in Pembrokeshire.

specification, which includes controls for WIMD quartile and the urban/rural indicators. The tables in the Appendix again report marginal effects and p-values. The interpretation of the marginal effects and p-values is similar to that outlined for the threshold models above, although the marginal effects across the four categories sum to zero in each of the ordered probit models. Therefore, the ordered probit models enable a more complete picture across the range of responses to the SWB questions to be obtained. The discussion of the findings from the ordered probit estimates will particularly focus the characteristics of those individuals who tend to report a high level of SWB.

4.2. Results from Threshold Models for the UK

The marginal effects from the binary probit models that have been estimated for the four SWB thresholds are presented in Tables 4.1 to 4.4. As explained in the previous section, if the marginal effects reported in the first specification are multiplied by 100, these are very similar to the percentage differences that are shown in Chapter 3 for most of the regions relative to Wales. For example, it was reported in Table 1.1 that the percentage of respondents living in Scotland in the low and very low satisfaction categories was 23% compared to 24.9% in Wales, whilst the estimates presented in Table 4.1 suggest that this differential is 1.8 percentage points, following the inclusion of a dummy variable for the mode of interview. The exceptions to this are Northern Ireland and London due to the much lower percentage of telephone interviews in these regions. After controlling for mode of interview, but not for any personal characteristics, respondents in Wales are around 7 (3) percentage points more (less) likely to report below the threshold satisfaction compared to those living in Northern Ireland (London). The marginal effect attached to the dummy indicating whether the interview took place on the telephone also indicates that the mode of interview has a significant impact on responses to all four SWB questions. The effect is largest in the satisfaction and worthwhile threshold models, where the probability of reporting below the threshold level of SWB is 7 percentage points higher for respondents who had a face-to-face interview. The smallest impact is observed for the anxiety threshold model since the differential is only 2 percentage points.

The equality characteristics are added in the second specification. The first point to note is that there is not much of an impact of including the equality characteristics on the regional estimates. The largest change is seen in relation to London, where the probability of being below the threshold level of SWB falls after adding equality characteristics. For example, in the threshold model for satisfaction the difference between London and Wales is reduced from 3.4 percentage points to 2.3 percentage points, although this effect is still significant at the 1% level. In terms of the equality characteristics themselves, it is interesting that the gender dummy is insignificant in the satisfaction and happiness threshold models that have been estimated for the UK despite the very large sample size. Whilst small marginal effects are reported in the worthwhile and anxiety threshold models (a 3-4 percentage point gender differential), these are significant at the 1% levels. Females are less likely to be below the threshold level on the worthwhile measure but are more likely to report either high/very high levels of anxiety. Age displays its usual u-shaped relationship with respect to SWB. The largest effects are observed in the life satisfaction model, with the difference in the probability of reporting below the threshold level being 12 percentage points older for those aged between 65 and 74 compared to people in the 45-54 age group. People

aged between 16 and 24 are also around 8 percentage points less likely to report below the threshold level of satisfaction.

There are also big ethnic variations in SWB in the UK. These are most noticeable in the threshold models for satisfaction, with Whites significantly less likely to report a low or very low level of satisfaction than all ethnic minority groups, apart from Indians and Other Asians, after controlling for region and equality characteristics. The magnitude of the marginal effects are large for some groups since the difference in the probability of being below the threshold level of satisfaction between individuals identifying themselves as Black compared to Whites was 17 percentage points, and around 10 percentage points for Pakistanis and Bangladeshis. There are some variations for the other SWB measures, with Bangladeshis most likely to report below the threshold level on the worthwhile measure and Pakistanis having the highest propensity to report below the threshold level of happiness and to report high or very high levels of anxiety. Individuals with a disability are significantly more likely to report below the threshold level of SWB. The effect is largest in the satisfaction model, with the difference between people with and without disabilities being 22 percentage points and 15-17 percentage points in the other three models. There is also a positive effect for individuals without any information on their disability status, which suggests that these people may also be experiencing some health problems. This is quite likely as the majority of individuals in this category are aged 65 or over because of the way in which the disability indicator has been created.

Specification 3 also includes what have been referred to as 'other personal characteristics', namely, education, labour market status, marital status, housing tenure and health. With the exception of anxiety the probability of reporting low SWB is significantly higher for educational groups with qualifications below degree level. For example, those with no qualifications are 5 percentage points more likely to report life satisfaction below the low or very low threshold level. In contrast, there is no significant influence of qualifications on reporting above the threshold level of anxiety. In terms of labour market activity, being unemployed increases the risk of reporting low SWB. This is particularly the case for life satisfaction where unemployment increases the probability of reporting the threshold level of satisfaction by 21 percentage points. Individuals who are inactive due to sickness are also more likely to report low SWB (life satisfaction, worthwhile and anxiety) than those in full-time employment but the magnitudes are far lower. For example, in terms of life satisfaction the inactive disabled group are 7 percentage points more likely to report low satisfaction. The more modest influence of inactivity due to disability in the regression models relative to the descriptive statistics is consistent with the inactivity disability variable only capturing the additional SWB penalty associated with inactivity rather than the combined influence of disability and inactivity. Note that, consistent with this, the influence of the disability equality characteristic changes dramatically between specifications (2) and (3) suggesting that it captures the influence of non-employment among the disabled in specification (2). One group of those who are inactive, the retired, are consistently less likely to report below the threshold levels of SWB and the magnitude of the effects is greater for the shorter term wellbeing measures, namely happiness and anxiety measured yesterday.

Relative to being married, all groups experience a higher probability of reporting SWB below the threshold level and the lowest wellbeing is typically reported by those

who are widowed. In terms of the differences across SWB measures, marital status has the largest influence on the life satisfaction measure but a far more modest influence on anxiety. Relative to those who are owner occupiers with a mortgage having a house which is owned outright generally reduces the probability of reporting low SWB. In contrast, those who live in private rented or social housing are more likely to report low SWB with the exception that social housing is not associated with high levels of anxiety.

In terms of magnitude, however, self-reported health has a dominant influence. Improved health is associated with a monotonic decline in the probability of reporting low SWB. For example, those in very bad health are 52 percentage points more likely to report below the threshold level of life satisfaction than those who report very good health. In terms of magnitude the influence of health is strongest on life satisfaction and lowest on anxiety, although it is still extremely prominent on the latter. Since the influence of self-reported health is also correlated with disability its inclusion is also likely to contribute to the reduction in the influence of self-reported disability.

While the qualitative patterns of results relating to region and equality characteristics are largely unchanged by the inclusion of other characteristics, there are some exceptions. For example, there is a general reduction in the influence of London on low SWB. There is also a sizeable reduction in the influence of telephone interviews, suggesting this variable not only captures an interview mode effect but also self-selection of individuals with different characteristics into different modes of interview.

Table 4.1. Probability (Marginal Effects) of Being in the Low and Very Low Satisfaction (0-6) Categories in the UK

	Specification 1		Specification 2		Specification 3	
	M.E.	**p-value**	**M.E.**	**p-value**	**M.E.**	**p-value**
North East	0.011	0.142	0.011	0.164	-0.007	0.344
North West	0.016	0.014	0.013	0.039	0.002	0.768
Yorkshire & the Humber	0.006	0.412	0.005	0.496	-0.003	0.680
East Midlands	-0.004	0.609	-0.001	0.929	-0.006	0.442
West Midlands	0.021	0.005	0.022	0.002	0.015	0.039
East of England	-0.001	0.945	0.008	0.300	0.008	0.282
London	0.034	0.000	0.023	0.002	0.017	0.020
South East	-0.029	0.000	-0.021	0.001	-0.012	0.069
South West	-0.023	0.001	-0.013	0.056	-0.006	0.438
Scotland	-0.018	0.003	-0.018	0.002	-0.021	0.000
Northern Ireland	-0.067	0.000	-0.068	0.000	-0.070	0.000
Telephone interview	-0.068	0.000	-0.070	0.000	-0.037	0.000
Female	_	_	0.002	0.489	-0.006	0.065
Aged 16-24	_	_	-0.075	0.000	-0.111	0.000
Aged 25-34	_	_	-0.056	0.000	-0.062	0.000
Aged 35-44	_	_	-0.028	0.000	-0.028	0.000
Aged 55-64	_	_	-0.063	0.000	-0.050	0.000
Aged 65-74	_	_	-0.121	0.000	-0.083	0.000
Aged 75 & over	_	_	-0.103	0.000	-0.093	0.000
Mixed	_	_	0.068	0.002	0.051	0.018
Indian	_	_	-0.015	0.216	0.020	0.111
Pakistani	_	_	0.095	0.000	0.093	0.000
Bangladeshi	_	_	0.105	0.000	0.081	0.004
Chinese	_	_	0.073	0.010	0.098	0.001
Other Asian	_	_	-0.003	0.886	0.006	0.731
Black	_	_	0.171	0.000	0.135	0.000
Other	_	_	0.052	0.002	0.046	0.006
Disability	_	_	0.223	0.000	0.028	0.000
No information on disability	_	_	0.129	0.000	0.018	0.019
Other higher education	_	_	_	_	0.025	0.000
A-level or equivalent	_	_	_	_	0.031	0.000
GCSE grades A*-C or equivalent	_	_	_	_	0.047	0.000
Other qualifications	_	_	_	_	0.051	0.000
No qualifications	_	_	_	_	0.049	0.000
No information on qualifications	_	_	_	_	0.070	0.000
Part-time employee	_	_	_	_	0.017	0.001

Self-employment	_	_	_	_	0.012	0.074
Unemployment	_	_	_	_	0.209	0.000
Inactive – student	_	_	_	_	-0.018	0.189
Inactive – looking after family or home	_	_	_	_	0.053	0.000
Inactive – short or long-term disabled	_	_	_	_	0.065	0.000
Inactive – retired	_	_	_	_	-0.049	0.000
Inactive – other	_	_	_	_	0.037	0.002
Single (never married)	_	_	_	_	0.088	0.000
Divorced	_	_	_	_	0.116	0.000
Widowed	_	_	_	_	0.135	0.000
Owned outright	_	_	_	_	-0.024	0.000
Private landlord	_	_	_	_	0.031	0.000
Social housing	_	_	_	_	0.034	0.000
Other housing tenure	_	_	_	_	0.020	0.433
Good Health	_	_	_	_	0.084	0.000
Fair Health	_	_	_	_	0.223	0.000
Bad Health	_	_	_	_	0.406	0.000
Very Bad Health	_	_	_	_	0.524	0.000
No information on Health	_	_	_	_	0.216	0.000
Pseudo R-squared	0.008		0.051		0.126	
Number of observations	79747					

Notes:

1. Excluded Categories are: Wales, Face-to-face interview, Aged 45-54, Not Disabled, White, Degree, Full-time employment, Married, Owning with a Mortgage and Very good health.

2. Estimates are based on unweighted data.

Table 4.2. Probability (Marginal Effects) of Being in the Low and Very Low Worthwhile (0-6) Categories in the UK

	Specification 1		Specification 2		Specification 3	
	M.E.	**p-value**	**M.E.**	**p-value**	**M.E.**	**p-value**
North East	0.013	0.062	0.013	0.067	-0.002	0.729
North West	0.006	0.332	0.004	0.502	-0.007	0.227
Yorkshire & the Humber	0.007	0.266	0.007	0.306	0.000	0.994
East Midlands	0.001	0.908	0.005	0.495	0.001	0.929
West Midlands	0.026	0.000	0.028	0.000	0.021	0.002
East of England	-0.010	0.130	-0.002	0.748	-0.003	0.695
London	0.030	0.000	0.025	0.000	0.019	0.006
South East	-0.025	0.000	-0.017	0.003	-0.009	0.121
South West	-0.021	0.001	-0.013	0.034	-0.006	0.329
Scotland	-0.007	0.204	-0.006	0.243	-0.010	0.078
Northern Ireland	-0.058	0.000	-0.054	0.000	-0.058	0.000
Telephone interview	-0.070	0.000	-0.068	0.000	-0.038	0.000
Female	_	_	-0.029	0.000	-0.032	0.000
Aged 16-24	_	_	0.016	0.018	-0.017	0.012
Aged 25-34	_	_	-0.018	0.000	-0.021	0.000
Aged 35-44	_	_	-0.020	0.000	-0.018	0.000
Aged 55-64	_	_	-0.039	0.000	-0.038	0.000
Aged 65-74	_	_	-0.079	0.000	-0.076	0.000
Aged 75 & over	_	_	-0.029	0.000	-0.060	0.000
Mixed	_	_	0.012	0.515	-0.004	0.836
Indian	_	_	-0.009	0.392	0.019	0.092
Pakistani	_	_	0.090	0.000	0.095	0.000
Bangladeshi	_	_	0.091	0.001	0.076	0.003
Chinese	_	_	0.056	0.031	0.077	0.005
Other Asian	_	_	0.019	0.275	0.028	0.111
Black	_	_	0.074	0.000	0.044	0.000
Other	_	_	0.068	0.000	0.066	0.000
Disability	_	_	0.172	0.000	0.003	0.484
No information on disability	_	_	0.100	0.000	0.002	0.821
Other higher education	_	_	_	_	0.010	0.129
A-level or equivalent	_	_	_	_	0.025	0.000
GCSE grades A*-C or equivalent	_	_	_	_	0.042	0.000
Other qualifications	_	_	_	_	0.057	0.000
No qualifications	_	_	_	_	0.065	0.000
No information on qualifications	_	_	_	_	0.075	0.000
Part-time employee	_	_	_	_	-0.007	0.162
Self-employment	_	_	_	_	-0.006	0.278

Unemployment	_	_	_	_	0.126	0.000
Inactive – student	_	_	_	_	-0.035	0.002
Inactive – looking after family or home	_	_	_	_	-0.001	0.919
Inactive – short or long-term disabled	_	_	_	_	0.069	0.000
Inactive – retired	_	_	_	_	-0.012	0.088
Inactive – other	_	_	_	_	0.052	0.000
Single (never married)	_	_	_	_	0.072	0.000
Divorced	_	_	_	_	0.072	0.000
Widowed	_	_	_	_	0.103	0.000
Owned outright	_	_	_	_	-0.011	0.009
Private landlord	_	_	_	_	0.030	0.000
Social housing	_	_	_	_	0.037	0.000
Other housing tenure	_	_	_	_	0.043	0.081
Good Health	_	_	_	_	0.065	0.000
Fair Health	_	_	_	_	0.173	0.000
Bad Health	_	_	_	_	0.330	0.000
Very Bad Health	_	_	_	_	0.445	0.000
No information on Health	_	_	_	_	0.179	0.000
Pseudo R-squared	0.010		0.042		0.106	
Number of observations	79747					

Notes:

1. Excluded Categories are: Wales, Face-to-face interview, Aged 45-54, Not Disabled, White, Degree, Full-time employment, Married, Owning with a Mortgage and Very good health.

2. Estimates are based on unweighted data.

Table 4.3. Probability (Marginal Effects) of Being in the Low and Very Low Happiness (0-6) Categories in the UK

	Specification 1		Specification 2		Specification 3	
	M.E.	**p-value**	**M.E.**	**p-value**	**M.E.**	**p-value**
North East	0.014	0.089	0.012	0.131	-0.002	0.814
North West	0.031	0.000	0.029	0.000	0.019	0.006
Yorkshire & the Humber	0.024	0.001	0.023	0.003	0.017	0.028
East Midlands	0.020	0.022	0.024	0.008	0.017	0.051
West Midlands	0.028	0.000	0.032	0.000	0.027	0.001
East of England	0.000	0.956	0.007	0.365	0.006	0.447
London	0.036	0.000	0.036	0.000	0.028	0.000
South East	-0.008	0.217	0.000	0.985	0.004	0.523
South West	-0.004	0.629	0.005	0.486	0.011	0.136
Scotland	0.005	0.443	0.005	0.472	0.002	0.784
Northern Ireland	-0.058	0.000	-0.056	0.000	-0.058	0.000
Telephone interview	-0.056	0.000	-0.050	0.000	-0.024	0.000
Female	_	_	-0.002	0.472	-0.003	0.328
Aged 16-24	_	_	-0.019	0.009	-0.041	0.000
Aged 25-34	_	_	-0.004	0.461	-0.005	0.413
Aged 35-44	_	_	-0.016	0.002	-0.013	0.016
Aged 55-64	_	_	-0.058	0.000	-0.042	0.000
Aged 65-74	_	_	-0.118	0.000	-0.076	0.000
Aged 75 & over	_	_	-0.099	0.000	-0.081	0.000
Mixed	_	_	0.013	0.547	-0.005	0.828
Indian	_	_	-0.014	0.271	0.008	0.552
Pakistani	_	_	0.050	0.004	0.049	0.005
Bangladeshi	_	_	0.021	0.448	0.007	0.800
Chinese	_	_	0.043	0.128	0.050	0.085
Other Asian	_	_	-0.032	0.077	-0.023	0.207
Black	_	_	0.040	0.001	0.015	0.203
Other	_	_	0.009	0.598	0.006	0.717
Disability	_	_	0.170	0.000	0.010	0.048
No information on disability	_	_	0.100	0.000	0.016	0.045
Other higher education	_	_	_	_	0.010	0.146
A-level or equivalent	_	_	_	_	0.010	0.075
GCSE grades A*-C or equivalent	_	_	_	_	0.019	0.001
Other qualifications	_	_	_	_	0.015	0.035
No qualifications	_	_	_	_	0.018	0.013
No information on qualifications	_	_	_	_	0.035	0.000
Part-time employee	_	_	_	_	-0.014	0.010
Self-employment	_	_	_	_	-0.016	0.014

Unemployment	_	_	_	_	0.059	0.000
Inactive – student	_	_	_	_	-0.014	0.334
Inactive – looking after family or home	_	_	_	_	-0.011	0.146
Inactive – short or long-term disabled	_	_	_	_	0.005	0.523
Inactive – retired	_	_	_	_	-0.073	0.000
Inactive – other	_	_	_	_	-0.008	0.467
Single (never married)	_	_	_	_	0.066	0.000
Divorced	_	_	_	_	0.078	0.000
Widowed	_	_	_	_	0.102	0.000
Owned outright	_	_	_	_	-0.018	0.000
Private landlord	_	_	_	_	0.020	0.000
Social housing	_	_	_	_	0.031	0.000
Other housing tenure	_	_	_	_	-0.015	0.567
Good Health	_	_	_	_	0.084	0.000
Fair Health	_	_	_	_	0.205	0.000
Bad Health	_	_	_	_	0.363	0.000
Very Bad Health	_	_	_	_	0.465	0.000
No information on Health	_	_	_	_	0.180	0.000
Pseudo R-squared	0.005		0.026		0.067	
Number of observations	79747					

Notes:

1. Excluded Categories are: Wales, Face-to-face interview, Aged 45-54, Not Disabled, White, Degree, Full-time employment, Married, Owning with a Mortgage and Very good health.

2. Estimates are based on unweighted data.

Table 4.4. Probability (Marginal Effects) of Being in the High and Very High Anxiety (4-10) Categories in the UK

	Specification 1		Specification 2		Specification 3	
	M.E.	**p-value**	**M.E.**	**p-value**	**M.E.**	**p-value**
North East	0.022	0.012	0.021	0.014	0.013	0.125
North West	0.022	0.002	0.021	0.005	0.015	0.045
Yorkshire & the Humber	0.011	0.176	0.011	0.187	0.007	0.383
East Midlands	0.027	0.005	0.029	0.002	0.025	0.010
West Midlands	-0.003	0.700	-0.002	0.785	-0.007	0.431
East of England	0.005	0.566	0.012	0.178	0.012	0.173
London	0.053	0.000	0.049	0.000	0.045	0.000
South East	-0.009	0.212	-0.002	0.754	0.000	0.988
South West	-0.009	0.243	-0.002	0.814	0.003	0.752
Scotland	-0.018	0.011	-0.018	0.010	-0.018	0.012
Northern Ireland	-0.021	0.150	-0.021	0.157	-0.025	0.092
Telephone interview	-0.019	0.000	-0.020	0.000	-0.002	0.512
Female	_	_	0.040	0.000	0.043	0.000
Aged 16-24	_	_	-0.060	0.000	-0.064	0.000
Aged 25-34	_	_	-0.029	0.000	-0.019	0.006
Aged 35-44	_	_	-0.016	0.005	-0.010	0.090
Aged 55-64	_	_	-0.041	0.000	-0.025	0.000
Aged 65-74	_	_	-0.092	0.000	-0.046	0.000
Aged 75 & over	_	_	-0.093	0.000	-0.065	0.000
Mixed	_	_	0.029	0.220	0.018	0.459
Indian	_	_	0.047	0.001	0.049	0.001
Pakistani	_	_	0.074	0.000	0.053	0.005
Bangladeshi	_	_	0.107	0.000	0.083	0.007
Chinese	_	_	0.050	0.102	0.035	0.259
Other Asian	_	_	0.047	0.028	0.040	0.062
Black	_	_	0.033	0.012	0.017	0.187
Other	_	_	0.037	0.045	0.023	0.215
Disability	_	_	0.150	0.000	0.023	0.000
No information on disability	_	_	0.080	0.000	0.014	0.088
Other higher education	_	_	_	_	-0.001	0.882
A-level or equivalent	_	_	_	_	-0.010	0.100
GCSE grades A*-C or equivalent	_	_	_	_	-0.007	0.247
Other qualifications	_	_	_	_	0.006	0.467
No qualifications	_	_	_	_	0.008	0.288
No information on qualifications	_	_	_	_	0.032	0.002
Part-time employee	_	_	_	_	-0.004	0.470
Self-employment	_	_	_	_	-0.006	0.392

Unemployment	_	_	_	_	0.056	0.000
Inactive – student	_	_	_	_	0.062	0.000
Inactive – looking after family or home	_	_	_	_	-0.007	0.402
Inactive – short or long-term disabled	_	_	_	_	0.023	0.020
Inactive – retired	_	_	_	_	-0.078	0.000
Inactive – other	_	_	_	_	-0.024	0.055
Single (never married)	_	_	_	_	0.014	0.007
Divorced	_	_	_	_	0.033	0.000
Widowed	_	_	_	_	0.024	0.001
Owned outright	_	_	_	_	-0.013	0.014
Private landlord	_	_	_	_	0.016	0.008
Social housing	_	_	_	_	0.000	0.944
Other housing tenure	_	_	_	_	-0.001	0.971
Good Health	_	_	_	_	0.082	0.000
Fair Health	_	_	_	_	0.185	0.000
Bad Health	_	_	_	_	0.277	0.000
Very Bad Health	_	_	_	_	0.341	0.000
No information on Health	_	_	_	_	0.155	0.000
Pseudo R-squared	0.002		0.016		0.035	
Number of observations	79747					

Notes:

1. Excluded Categories are: Wales, Face-to-face interview, Aged 45-54, Not Disabled, White, Degree, Full-time employment, Married, Owning with a Mortgage and Very good health.

2. Estimates are based on unweighted data.

4.3. Results from Threshold Models for Wales

The marginal effects from the binary probit models that have been estimated for the four SWB thresholds are presented for the Welsh sample in Tables 4.5 to 4.8. Specification 1 provides an indication of the spatial distribution of low threshold values of SWB across Unitary Authorities in Wales, as measured relative to individuals living in Cardiff. As expected, the results are broadly in line with the descriptive statistics reported earlier in Tables 3.13 to 3.16. Across the first three SWB measures a number of South Wales Valley areas stand out as being significantly (at or below the 5% level) more likely to report below the threshold level of SWB than Cardiff. For example, on the satisfaction and worthwhile measures of SWB individuals living in Blaenau Gwent, Rhondda Cynon Taff, and Torfaen are significantly more likely to report measures of SWB below the threshold than individuals living in Cardiff. Hence on the satisfaction measure individuals living in these areas are about 10 percent more likely to report levels of satisfaction below the threshold level than individuals living in Cardiff, while on the worthwhile measure the equivalent figure is between 6 and 8 percentage points. Other UAs in Wales reporting significantly lower levels of SWB on the threshold satisfaction measure include Neath and Port Talbot (8 percentage points more likely than Cardiff), and Conwy (7 percentage points more likely than Cardiff).

As with the satisfaction and worthwhile measures of SWB, individuals living in Blaenau Gwent and Torfaen are also more likely to report significantly lower levels of happiness. According to the results reported under specification 1 (Table 4.7), people living in Blaenau Gwent and Torfaen are both around 9 percent more likely to report levels of happiness below the threshold level than individuals in Cardiff. The only other UA with significantly (at or below the 5% level) lower levels of happiness than Cardiff is Neath and Port Talbot where individuals are 7 percent more likely to report happiness levels below the threshold level than individuals living in Cardiff.

Although it is worthwhile to draw attention to some of the spatial differences in SWB measures highlighted above, when a reasonable measure of statistical significance (e.g. a 5% level) is used as a focus it seems that in most cases there is a high degree of uniformity in reported SWB measures across UAs in Wales: i.e. relatively few UAs exhibit statistically significant different outcomes on the reported measures. From this perspective, therefore, it would seem that an individual's characteristics and economic circumstance are more important in determining their SWB than the place in which they live. This pattern is also evident in the fourth and final measure of SWB (high anxiety) reported in Table 4.8, where under specification 1 the only UAs with individuals reporting significantly (at or below the 5% level) lower levels of anxiety - i.e. above a high anxiety threshold - than Cardiff were Ceredigion, the Isle of Anglesey, and Denbighshire.

As noted in the previous chapter, the effect of the equality characteristics on SWB in Wales is very similar to that observed in the UK as a whole. This is again demonstrated in the four threshold models. For example, gender does not have a very large impact on SWB, although females are significantly more likely to report either high or very high levels of anxiety. The female dummy is also negative and significant at the 5% level in third and fourth specifications of the worthwhile

threshold model. The u-shaped relationship with respect to age is most evident in the threshold models for satisfaction and anxiety. However, people aged 16-24 are significantly more likely to report below the threshold level on the worthwhile measure compared to 45-54 year olds (an 8 percentage point differential in Wales compared to a 2 percentage point differential in the UK). The ethnic minority dummy variable is significant at the 5% level in the satisfaction and anxiety models, with ethnic minorities more likely to report below the threshold level of SWB. The difference in the probabilities in these models is in the range of 6-10 percentage points. The influence of disability on the probability of reporting below the threshold level of SWB is almost identical in Wales and the UK as a whole. In particular, the difference between people with and without disabilities is 22 percentage points in the satisfaction model and around 16 percentage points in the other three models. The Welsh identity dummy is not significant in any of the models, which suggests that this is not an important influence after UA and equality group dummies have been included.

A similar pattern between Wales and the rest of the UK is also observed in terms of the influence of other characteristics (included in specification 3) such as education, labour market activity and health. For example, the influence of unemployment remains prominent in Wales (with a 21 percentage point increase in the life satisfaction model in both Wales and the UK). There are, however, a couple of exceptions, for example, education appears less important for life satisfaction and happiness in Wales compared to the UK. In contrast, inactivity due to being a student has a greater influence on high anxiety in Wales (23 percentage points) than in the UK (6 percentage points). The influence of marital status, while similar for other SWB measures has no influence on anxiety in Wales. In the UK, living in social housing is positively associated with low SWB (except when measured by anxiety), whereas in Wales living in social housing also has no impact on life satisfaction.

Generally, where significant, the inclusion of other characteristics in specification 3 dampen the influence of UA of residence relative. For example, the positive area effects in Blaenau Gwent, Neath and Port Talbot, Swansea and Torfean diminish suggesting that some of the intra-regional differences reflect differences in the composition of the population in terms of health, education and labour market activity. Further, in Wales the influence of disability (as an equality characteristic) is insignificant after the inclusion of health and labour market activity. The change is most dramatic for life satisfaction where the influence of disability falls from 22 percentage points in specification 2 to 1 percentage point in specification 3.

The inclusion of quartiles for the WIMD and a range of urban/rural indicators in specification 4 (Tables 4.5 to 4.8) does little to change the overall pattern of results produced from the inclusion of other characteristics in specification 3. In fact, the influence on the four SWB measures by ‘other characteristics’ remain remarkably robust to the inclusion of these additional variables, neither of which tends to produce consistently significant effects on the SWB measures used in the analysis. The only possible exception is for the satisfaction measure, where there is evidence to suggest that individuals living in more rural locations are less likely to have low levels of life satisfaction. For example, compared to an individual living in an urban area an individual living in a ‘hamlet’ is almost 5 percent less likely to report low or very low levels of life satisfaction. More generally the signs accorded to the rural/urban

indicators are in line with those reported earlier in the aggregate analysis (Tables 3.17 to 3.20). However, the fact the urban/rural variables tend to be insignificant when included in a multivariate framework suggest that any rural/urban effect identified earlier is likely to have been due to the composition of the populations living in these areas, rather than to any independent effect arising from location itself. Similarly, the finding that quartiles of the WIMD are also largely insignificant, points to a similar compositional effect, which in this case is perhaps less surprising given that the index is constructed from a set of domains that include measures of employment, education, income and health within area that in turn are highly correlated with a number of individual variables included in 'other characteristics' in specification 3.

Table 4.5. Probability (Marginal Effects) of Being in the Low and Very Low Satisfaction (0-6) Categories in Wales

	Specification 1		Specification 2		Specification 3		Specification 4	
	M.E.	p-value	M.E.	p-value	M.E.	p-value	M.E.	p-value
Blaenau Gwent	0.103	0.007	0.094	0.014	0.062	0.095	0.063	0.095
Bridgend	0.047	0.150	0.046	0.161	0.046	0.170	0.053	0.120
Caerphilly	0.056	0.087	0.045	0.166	0.028	0.371	0.033	0.304
Carmarthenshire	0.056	0.081	0.061	0.064	0.057	0.088	0.079	0.025
Ceredigion	0.023	0.483	0.040	0.244	0.044	0.212	0.077	0.047
Conwy	0.070	0.035	0.094	0.007	0.088	0.013	0.100	0.006
Denbighshire	0.052	0.103	0.080	0.018	0.079	0.021	0.097	0.007
Flintshire	0.000	1.000	0.021	0.533	0.031	0.371	0.043	0.225
Gwynedd	-0.019	0.508	0.007	0.825	0.014	0.659	0.044	0.207
Isle of Anglesey	0.014	0.668	0.022	0.505	0.034	0.335	0.061	0.111
Merthyr	0.068	0.057	0.059	0.098	0.030	0.384	0.033	0.344
Monmouthshire	-0.011	0.713	0.002	0.942	0.014	0.650	0.033	0.327
Neath Port Talbot	0.080	0.017	0.063	0.061	0.051	0.123	0.058	0.088
Newport	0.033	0.306	0.034	0.300	0.030	0.363	0.032	0.335
Pembrokeshire	-0.003	0.929	0.013	0.676	0.003	0.916	0.031	0.365
Powys	-0.037	0.181	-0.020	0.479	-0.008	0.787	0.025	0.467
Rhondda Cynon Taff	0.096	0.004	0.089	0.009	0.076	0.025	0.082	0.017
Swansea	0.060	0.062	0.062	0.058	0.053	0.107	0.056	0.091
Torfaen	0.106	0.002	0.110	0.001	0.079	0.019	0.082	0.015
Vale of Glamorgan	0.006	0.830	0.007	0.813	0.007	0.826	0.012	0.701
Wrexham	0.023	0.481	0.044	0.204	0.019	0.577	0.030	0.385
Telephone interview	-0.073	0.000	-0.079	0.000	-0.048	0.000	-0.048	0.000
Female	_	_	0.008	0.359	-0.001	0.926	0.000	0.986
Aged 16-24	_	_	-0.025	0.225	-0.073	0.000	-0.074	0.000
Aged 25-34	_	_	-0.045	0.004	-0.062	0.000	-0.065	0.000
Aged 35-44	_	_	-0.013	0.402	-0.011	0.498	-0.012	0.440
Aged 55-64	_	_	-0.062	0.000	-0.042	0.004	-0.042	0.004
Aged 65-74	_	_	-0.120	0.000	-0.051	0.027	-0.049	0.034
Aged 75 & over	_	_	-0.088	0.000	-0.085	0.002	-0.084	0.002
Non-white	_	_	0.063	0.083	0.078	0.039	0.072	0.054
Disability	_	_	0.217	0.000	0.013	0.167	0.013	0.194
No information on disability	_	_	0.128	0.000	0.022	0.127	0.022	0.135
Welsh Identity	_	_	0.014	0.151	-0.010	0.627	-0.011	0.580
Other higher education	_	_	_	_	0.012	0.546	0.011	0.607
A-level or equivalent	_	_	_	_	0.020	0.243	0.019	0.287
GCSE grades A*-C or equivalent	_	_	_	_	0.032	0.064	0.030	0.087

Other qualifications	_	_	_	_	0.078	0.001	0.074	0.002
No qualifications	_	_	_	_	0.005	0.798	0.002	0.915
No information on qualifications	_	_	_	_	0.038	0.173	0.036	0.207
Part-time employee	_	_	_	_	0.029	0.081	0.030	0.070
Self-employment	_	_	_	_	-0.009	0.631	-0.003	0.862
Unemployment	_	_	_	_	0.206	0.000	0.207	0.000
Inactive – student	_	_	_	_	-0.083	0.024	-0.083	0.023
Inactive – looking after family or home	_	_	_	_	0.054	0.028	0.054	0.027
Inactive – short or long-term disabled	_	_	_	_	0.053	0.030	0.053	0.030
Inactive – retired	_	_	_	_	-0.043	0.038	-0.043	0.038
Inactive – other	_	_	_	_	0.031	0.411	0.032	0.398
Single (never married)	_	_	_	_	0.110	0.000	0.109	0.000
Divorced	_	_	_	_	0.126	0.000	0.124	0.000
Widowed	_	_	_	_	0.137	0.000	0.135	0.000
Owned outright	_	_	_	_	-0.041	0.002	-0.039	0.003
Private landlord	_	_	_	_	0.033	0.051	0.034	0.047
Social housing	_	_	_	_	0.008	0.624	0.004	0.812
Other housing tenure	_	_	_	_	0.024	0.813	0.037	0.722
Good Health	_	_	_	_	0.103	0.000	0.102	0.000
Fair Health	_	_	_	_	0.249	0.000	0.248	0.000
Bad Health	_	_	_	_	0.446	0.000	0.445	0.000
Very Bad Health	_	_	_	_	0.540	0.000	0.540	0.000
No information on Health	_	_	_	_	0.329	0.000	0.331	0.000
Second WIMD quartile	_	_	_	_	_	_	-0.005	0.729
Third WIMD quartile	_	_	_	_	_	_	-0.017	0.230
Fourth WIMD quartile	_	_	_	_	_	_	-0.005	0.716
Town and Fringe	_	_	_	_	_	_	-0.022	0.090
Village	_	_	_	_	_	_	-0.025	0.094
Hamlet	_	_	_	_	_	_	-0.046	0.007
Pseudo R-squared	0.014		0.051		0.131		0.133	
Number of observations	9022							

Notes:

1. Excluded Categories are: Cardiff, Face-to-face interview, Aged 45-54, Not Disabled, White, Degree, Full-time employment, Married, Owning with a Mortgage, Very good health, first (most deprived) WIMD quartile and urban.

2. Estimates are based on unweighted data.

Table 4.6. Probability (Marginal Effects) of Being in the Low and Very Low Worthwhile (0-6) Categories in Wales

	Specification 1		Specification 2		Specification 3		Specification 4	
	M.E.	p-value	M.E.	p-value	M.E.	p-value	M.E.	p-value
Blaenau Gwent	0.078	0.027	0.076	0.030	0.048	0.152	0.047	0.162
Bridgend	-0.025	0.343	-0.021	0.423	-0.021	0.424	-0.017	0.528
Caerphilly	0.006	0.841	0.000	0.994	-0.012	0.643	-0.009	0.723
Carmarthenshire	0.017	0.538	0.026	0.359	0.021	0.456	0.036	0.244
Ceredigion	0.002	0.953	0.013	0.656	0.018	0.541	0.039	0.248
Conwy	0.006	0.834	0.022	0.449	0.012	0.668	0.019	0.524
Denbighshire	0.032	0.272	0.052	0.085	0.046	0.126	0.057	0.070
Flintshire	-0.033	0.207	-0.017	0.534	-0.017	0.525	-0.010	0.717
Gwynedd	-0.031	0.203	-0.013	0.625	-0.011	0.670	0.007	0.802
Isle of Anglesey	-0.018	0.526	-0.012	0.677	-0.007	0.811	0.009	0.769
Merthyr	0.054	0.101	0.046	0.153	0.020	0.502	0.021	0.486
Monmouthshire	0.004	0.887	0.016	0.582	0.025	0.384	0.038	0.221
Neath Port Talbot	0.046	0.124	0.036	0.220	0.023	0.419	0.027	0.352
Newport	0.031	0.289	0.033	0.269	0.030	0.315	0.031	0.295
Pembrokeshire	-0.011	0.679	0.003	0.908	-0.004	0.878	0.012	0.684
Powys	-0.045	0.056	-0.032	0.192	-0.022	0.385	-0.004	0.884
Rhondda Cynon Taff	0.068	0.027	0.067	0.030	0.054	0.077	0.057	0.066
Swansea	0.035	0.225	0.038	0.190	0.029	0.306	0.031	0.272
Torfaen	0.062	0.040	0.067	0.028	0.045	0.124	0.047	0.109
Vale of Glamorgan	0.002	0.939	0.005	0.848	0.010	0.729	0.015	0.604
Wrexham	0.024	0.429	0.039	0.218	0.017	0.573	0.023	0.454
Telephone interview	-0.075	0.000	-0.075	0.000	-0.047	0.000	-0.047	0.000
Female	_	_	-0.010	0.218	-0.019	0.032	-0.019	0.034
Aged 16-24	_	_	0.075	0.001	0.041	0.099	0.040	0.108
Aged 25-34	_	_	-0.018	0.224	-0.022	0.154	-0.024	0.122
Aged 35-44	_	_	-0.015	0.278	-0.010	0.502	-0.011	0.461
Aged 55-64	_	_	-0.045	0.000	-0.041	0.001	-0.041	0.001
Aged 65-74	_	_	-0.075	0.000	-0.076	0.000	-0.075	0.000
Aged 75 & over	_	_	-0.030	0.062	-0.084	0.000	-0.083	0.000
Non-white	_	_	0.038	0.246	0.045	0.173	0.043	0.199
Disability	_	_	0.156	0.000	-0.005	0.531	-0.006	0.496
No information on disability	_	_	0.086	0.000	-0.004	0.762	-0.004	0.756
Welsh Identity	_	_	-0.003	0.775	-0.012	0.518	-0.013	0.497
Other higher education	_	_	_	_	0.033	0.100	0.032	0.111
A-level or equivalent	_	_	_	_	0.029	0.083	0.027	0.101
GCSE grades A*-C or equivalent	_	_	_	_	0.054	0.001	0.052	0.002

Other qualifications	_	_	_	_	0.062	0.006	0.059	0.009
No qualifications	_	_	_	_	0.029	0.143	0.026	0.184
No information on qualifications	_	_	_	_	0.099	0.001	0.096	0.001
Part-time employee	_	_	_	_	0.005	0.754	0.006	0.705
Self-employment	_	_	_	_	-0.020	0.245	-0.017	0.340
Unemployment	_	_	_	_	0.114	0.000	0.115	0.000
Inactive – student	_	_	_	_	-0.045	0.158	-0.045	0.159
Inactive – looking after family or home	_	_	_	_	0.012	0.553	0.013	0.541
Inactive – short or long-term disabled	_	_	_	_	0.041	0.062	0.041	0.061
Inactive – retired	_	_	_	_	-0.013	0.501	-0.012	0.537
Inactive – other	_	_	_	_	0.053	0.131	0.055	0.124
Single (never married)	_	_	_	_	0.043	0.001	0.043	0.002
Divorced	_	_	_	_	0.061	0.000	0.060	0.000
Widowed	_	_	_	_	0.088	0.000	0.086	0.000
Owned outright	_	_	_	_	-0.007	0.560	-0.006	0.607
Private landlord	_	_	_	_	0.060	0.000	0.059	0.000
Social housing	_	_	_	_	0.053	0.001	0.050	0.002
Other housing tenure	_	_	_	_	0.278	0.020	0.286	0.017
Good Health	_	_	_	_	0.068	0.000	0.067	0.000
Fair Health	_	_	_	_	0.178	0.000	0.177	0.000
Bad Health	_	_	_	_	0.333	0.000	0.332	0.000
Very Bad Health	_	_	_	_	0.467	0.000	0.466	0.000
No information on Health	_	_	_	_	0.198	0.000	0.199	0.000
Second WIMD quartile	_	_	_	_	_	_	-0.008	0.487
Third WIMD quartile	_	_	_	_	_	_	-0.011	0.411
Fourth WIMD quartile	_	_	_	_	_	_	-0.008	0.566
Town and Fringe	_	_	_	_	_	_	-0.010	0.376
Village	_	_	_	_	_	_	-0.023	0.091
Hamlet	_	_	_	_	_	_	-0.023	0.155
Pseudo R-squared	0.017		0.043		0.104		0.104	
Number of observations	9022							

Notes:

1. Excluded Categories are: Cardiff, Face-to-face interview, Aged 45-54, Not Disabled, White, Degree, Full-time employment, Married, Owning with a Mortgage, Very good health, first (most deprived) WIMD quartile and urban.

2. Estimates are based on unweighted data.

Table 4.7. Probability (Marginal Effects) of Being in the Low and Very Low Happiness (0-6) Categories in Wales

	Specification 1		Specification 2		Specification 3		Specification 4	
	M.E.	p-value	M.E.	p-value	M.E.	p-value	M.E.	p-value
Blaenau Gwent	0.087	0.019	0.080	0.034	0.066	0.076	0.054	0.148
Bridgend	-0.014	0.640	-0.015	0.612	-0.018	0.555	-0.019	0.536
Caerphilly	0.045	0.160	0.036	0.260	0.025	0.427	0.022	0.494
Carmarthenshire	0.050	0.121	0.055	0.092	0.048	0.142	0.050	0.142
Ceredigion	-0.008	0.811	0.004	0.912	0.000	0.999	0.008	0.826
Conwy	0.000	0.995	0.017	0.591	0.014	0.668	0.016	0.627
Denbighshire	0.009	0.766	0.026	0.412	0.024	0.449	0.030	0.362
Flintshire	-0.040	0.184	-0.028	0.369	-0.024	0.455	-0.018	0.583
Gwynedd	-0.034	0.240	-0.016	0.590	-0.011	0.724	-0.003	0.939
Isle of Anglesey	-0.052	0.083	-0.045	0.138	-0.035	0.267	-0.029	0.386
Merthyr	0.055	0.121	0.044	0.212	0.027	0.433	0.019	0.576
Monmouthshire	0.015	0.632	0.027	0.407	0.036	0.276	0.049	0.153
Neath Port Talbot	0.072	0.031	0.058	0.079	0.055	0.099	0.053	0.116
Newport	0.026	0.418	0.026	0.428	0.027	0.416	0.025	0.453
Pembrokeshire	-0.011	0.716	0.001	0.965	-0.007	0.810	-0.003	0.920
Powys	-0.027	0.334	-0.012	0.673	-0.007	0.813	0.002	0.958
Rhondda Cynon Taff	0.046	0.153	0.038	0.241	0.027	0.401	0.023	0.476
Swansea	0.053	0.098	0.054	0.095	0.050	0.124	0.051	0.117
Torfaen	0.092	0.005	0.095	0.005	0.076	0.022	0.074	0.027
Vale of Glamorgan	0.006	0.831	0.007	0.814	0.010	0.751	0.016	0.610
Wrexham	0.000	0.993	0.011	0.732	-0.012	0.702	-0.010	0.759
Telephone interview	-0.044	0.000	-0.041	0.000	-0.017	0.090	-0.017	0.093
Female	_	_	0.003	0.767	-0.007	0.494	-0.007	0.498
Aged 16-24	_	_	0.009	0.704	0.015	0.583	0.013	0.639
Aged 25-34	_	_	-0.009	0.590	0.005	0.814	0.002	0.930
Aged 35-44	_	_	0.001	0.971	0.013	0.454	0.011	0.535
Aged 55-64	_	_	-0.044	0.002	-0.032	0.038	-0.031	0.043
Aged 65-74	_	_	-0.098	0.000	-0.076	0.001	-0.075	0.001
Aged 75 & over	_	_	-0.066	0.000	-0.085	0.004	-0.084	0.005
Non-white	_	_	-0.002	0.963	0.001	0.987	-0.003	0.942
Disability	_	_	0.157	0.000	0.008	0.431	0.007	0.482
No information on disability	_	_	0.066	0.000	0.005	0.749	0.005	0.750
Welsh Identity	_	_	0.007	0.451	-0.014	0.508	-0.014	0.497
Other higher education	_	_	_	_	-0.002	0.928	-0.004	0.848
A-level or equivalent	_	_	_	_	0.001	0.946	-0.003	0.882
GCSE grades A*-C or equivalent	_	_	_	_	0.007	0.692	0.003	0.873

Other qualifications	_	_	_	_	0.006	0.772	0.000	0.992
No qualifications	_	_	_	_	-0.015	0.466	-0.022	0.270
No information on qualifications	_	_	_	_	0.048	0.095	0.042	0.141
Part-time employee	_	_	_	_	0.010	0.557	0.011	0.517
Self-employment	_	_	_	_	0.001	0.944	0.003	0.871
Unemployment	_	_	_	_	0.046	0.076	0.046	0.082
Inactive – student	_	_	_	_	0.006	0.901	0.007	0.870
Inactive – looking after family or home	_	_	_	_	-0.002	0.914	-0.003	0.895
Inactive – short or long-term disabled	_	_	_	_	0.012	0.603	0.012	0.614
Inactive – retired	_	_	_	_	-0.058	0.007	-0.057	0.008
Inactive – other	_	_	_	_	-0.027	0.437	-0.027	0.429
Single (never married)	_	_	_	_	0.013	0.366	0.012	0.416
Divorced	_	_	_	_	0.071	0.000	0.069	0.000
Widowed	_	_	_	_	0.110	0.000	0.108	0.000
Owned outright	_	_	_	_	-0.018	0.188	-0.018	0.199
Private landlord	_	_	_	_	0.039	0.027	0.037	0.033
Social housing	_	_	_	_	0.045	0.010	0.036	0.038
Other housing tenure	_	_	_	_	0.172	0.145	0.177	0.135
Good Health	_	_	_	_	0.093	0.000	0.092	0.000
Fair Health	_	_	_	_	0.201	0.000	0.199	0.000
Bad Health	_	_	_	_	0.368	0.000	0.365	0.000
Very Bad Health	_	_	_	_	0.412	0.000	0.410	0.000
No information on Health	_	_	_	_	0.176	0.000	0.177	0.000
Second WIMD quartile	_	_	_	_	_	_	-0.015	0.289
Third WIMD quartile	_	_	_	_	_	_	-0.020	0.188
Fourth WIMD quartile	_	_	_	_	_	_	-0.038	0.014
Town and Fringe	_	_	_	_	_	_	-0.013	0.340
Village	_	_	_	_	_	_	-0.007	0.668
Hamlet	_	_	_	_	_	_	-0.012	0.548
Pseudo R-squared	0.009		0.028		0.067		0.068	
Number of observations	9022							

Notes:

1. Excluded Categories are: Cardiff, Face-to-face interview, Aged 45-54, Not Disabled, White, Degree, Full-time employment, Married, Owning with a Mortgage, Very good health, first (most deprived) WIMD quartile and urban.

2. Estimates are based on unweighted data.

Table 4.8. Probability (Marginal Effects) of Being in the High and Very High Anxiety (4-10) Categories in Wales

	Specification 1		Specification 2		Specification 3		Specification 4	
	M.E.	p-value	M.E.	p-value	M.E.	p-value	M.E.	p-value
Blaenau Gwent	0.065	0.089	0.059	0.128	0.049	0.215	0.050	0.211
Bridgend	-0.038	0.245	-0.038	0.253	-0.043	0.197	-0.043	0.210
Caerphilly	0.020	0.554	0.015	0.653	0.002	0.944	0.003	0.941
Carmarthenshire	-0.001	0.974	0.002	0.960	-0.008	0.815	-0.004	0.913
Ceredigion	-0.076	0.024	-0.063	0.068	-0.070	0.041	-0.062	0.090
Conwy	-0.015	0.660	0.001	0.977	-0.001	0.983	0.003	0.927
Denbighshire	-0.066	0.036	-0.048	0.142	-0.051	0.121	-0.048	0.152
Flintshire	-0.028	0.413	-0.011	0.746	-0.010	0.776	-0.007	0.836
Gwynedd	-0.037	0.245	-0.018	0.582	-0.013	0.697	-0.005	0.891
Isle of Anglesey	-0.097	0.003	-0.091	0.007	-0.082	0.016	-0.077	0.032
Merthyr	0.054	0.147	0.051	0.169	0.037	0.327	0.039	0.310
Monmouthshire	-0.058	0.072	-0.046	0.160	-0.044	0.182	-0.038	0.263
Neath Port Talbot	0.010	0.757	0.001	0.987	-0.006	0.869	-0.006	0.869
Newport	-0.029	0.378	-0.030	0.372	-0.032	0.344	-0.032	0.351
Pembrokeshire	-0.057	0.073	-0.045	0.163	-0.055	0.091	-0.046	0.186
Powys	-0.050	0.110	-0.034	0.285	-0.034	0.303	-0.020	0.568
Rhondda Cynon Taff	0.012	0.720	0.005	0.873	-0.009	0.795	-0.008	0.822
Swansea	0.023	0.485	0.025	0.455	0.017	0.620	0.016	0.635
Torfaen	0.004	0.903	0.007	0.828	-0.010	0.755	-0.012	0.711
Vale of Glamorgan	0.002	0.960	0.007	0.824	0.004	0.903	0.003	0.934
Wrexham	-0.020	0.570	-0.004	0.905	-0.025	0.480	-0.021	0.568
Telephone interview	0.008	0.439	0.002	0.830	0.017	0.141	0.017	0.145
Female	_	_	0.049	0.000	0.044	0.000	0.044	0.000
Aged 16-24	_	_	-0.025	0.323	-0.042	0.155	-0.042	0.155
Aged 25-34	_	_	-0.038	0.047	-0.026	0.222	-0.027	0.209
Aged 35-44	_	_	-0.010	0.606	-0.003	0.860	-0.004	0.837
Aged 55-64	_	_	-0.030	0.075	-0.016	0.380	-0.016	0.391
Aged 65-74	_	_	-0.084	0.000	-0.042	0.135	-0.041	0.140
Aged 75 & over	_	_	-0.084	0.000	-0.058	0.117	-0.058	0.114
Non-white	_	_	0.105	0.008	0.093	0.020	0.091	0.023
Disability	_	_	0.157	0.000	0.015	0.176	0.015	0.187
No information on disability	_	_	0.087	0.000	0.025	0.135	0.025	0.132
Welsh Identity	_	_	0.012	0.280	0.023	0.339	0.023	0.331
Other higher education	_	_	_	_	-0.024	0.286	-0.025	0.267
A-level or equivalent	_	_	_	_	-0.035	0.058	-0.036	0.055
GCSE grades A*-C or equivalent	_	_	_	_	-0.012	0.528	-0.013	0.500

Other qualifications	_	_	_	_	0.008	0.740	0.007	0.771
No qualifications	_	_	_	_	-0.047	0.036	-0.048	0.035
No information on qualifications	_	_	_	_	0.000	0.991	0.001	0.981
Part-time employee	_	_	_	_	0.027	0.140	0.027	0.141
Self-employment	_	_	_	_	-0.014	0.535	-0.010	0.648
Unemployment	_	_	_	_	0.042	0.151	0.043	0.142
Inactive – student	_	_	_	_	0.234	0.000	0.234	0.000
Inactive – looking after family or home	_	_	_	_	0.013	0.612	0.014	0.593
Inactive – short or long-term disabled	_	_	_	_	0.040	0.154	0.040	0.156
Inactive – retired	_	_	_	_	-0.037	0.128	-0.038	0.118
Inactive – other	_	_	_	_	0.028	0.499	0.027	0.513
Single (never married)	_	_	_	_	-0.017	0.294	-0.017	0.281
Divorced	_	_	_	_	0.018	0.280	0.017	0.304
Widowed	_	_	_	_	0.018	0.368	0.018	0.378
Owned outright	_	_	_	_	-0.040	0.009	-0.039	0.010
Private landlord	_	_	_	_	0.018	0.356	0.019	0.335
Social housing	_	_	_	_	0.007	0.715	0.007	0.708
Other housing tenure	_	_	_	_	0.016	0.892	0.023	0.842
Good Health	_	_	_	_	0.096	0.000	0.095	0.000
Fair Health	_	_	_	_	0.182	0.000	0.181	0.000
Bad Health	_	_	_	_	0.303	0.000	0.302	0.000
Very Bad Health	_	_	_	_	0.383	0.000	0.382	0.000
No information on Health	_	_	_	_	0.150	0.000	0.150	0.000
Second WIMD quartile	_	_	_	_	_	_	0.020	0.224
Third WIMD quartile	_	_	_	_	_	_	-0.003	0.844
Fourth WIMD quartile	_	_	_	_	_	_	0.006	0.728
Town and Fringe	_	_	_	_	_	_	-0.012	0.430
Village	_	_	_	_	_	_	-0.002	0.931
Hamlet	_	_	_	_	_	_	-0.027	0.198
Pseudo R-squared	0.005		0.020		0.043		0.044	
Number of observations	9022							

Notes:

1. Excluded Categories are: Cardiff, Face-to-face interview, Aged 45-54, Not Disabled, White, Degree, Full-time employment, Married, Owning with a Mortgage, Very good health, first (most deprived) WIMD quartile and urban.

2. Estimates are based on unweighted data.

4.4. Ordered Probit Estimates

The ordered probit estimates are presented in the Appendix for the UK in Tables A5-A8 and for Wales in Tables A9 to A12. Given the amount of information that these tables provide, only a selection of the estimates will be discussed here. Moreover, the influence of personal characteristics and area effects is fairly similar to those reported in the probit estimates, especially for the very low and low SWB categories. Therefore, the discussion will tend to concentrate on the high SWB categories.

Respondents living in Northern Ireland and Scotland are significantly less likely than those residing in Wales to report low and very low levels of satisfaction and significantly more likely to report high levels. These effects are much larger in Northern Ireland than in Scotland, although interestingly Table 1.1 indicated that there was a slightly higher percentage in the high satisfaction category in Wales than in Scotland. Respondents located in the English regions tend to be more likely to report low and very low levels of satisfaction than Welsh residents after other factors have been controlled for, although the differences are not always significant. The regional variations are similar in the other models of SWB but are generally weaker than in the ordered probit estimates of satisfaction.

Again the effect of the equality characteristics is similar in the models for the UK and Wales. Females are significantly more likely to be in the high categories for satisfaction, worthwhile and happiness but also more (less) likely to be in the very high (low) anxiety category. People living in Wales aged between 45 and 54 are least likely to report high levels of life satisfaction, although the difference compared to the 35-44 age group is not significant. The marginal effects for age in the high worthwhile and high happiness categories are quite large in Wales, with the difference in the probability of reporting a high level on the worthwhile and happiness measures between respondents aged over 75 and those in the 45-54 age group being 12 percentage points. The ethnic minority dummy is not significant in any of the four ordered probit models that have been estimated on the Welsh sample. Neither are people reporting a disability significantly different from those who do not in the ordered probit models for Wales when other characteristics (especially the controls for health) have been included. The Welsh identity dummy is insignificant throughout all of the models.

In terms of other personal characteristics the qualitative patterns are again similar between the threshold models and the ordered probits. For example, regardless of the measure, individuals who are unemployed are significantly less likely to report high levels of SWB and individuals who are inactive due to retirement are consistently more likely to report high SWB. The influence of marital status also remains prominent in the ordered probit models with all non-married groups less likely to report high SWB. However, again it is self-reported health which has the largest influence. For example, those in very bad health are 24 percentage points less likely to report high life satisfaction than those in very good health. Further, most of these key patterns are common across the UK and Wales samples. One exception being that marital status has no influence on anxiety in Wales. The WIMD quartile and urban rural controls are generally insignificant in the ordered probit regressions. The exceptions to this are the third and fourth quartile dummies in the happiness model (Table A.11), which are significant at the 5% level.

5. Discussion and Implications

This chapter focuses on some of the key findings from the previous chapters and also attempts to relate these to some wider issues. To begin with, Section 5.1. contains a more detailed examination of some of the main results that were highlighted previously: especially in relation to unemployment and health. In particular, an analysis of the effect of unemployment duration and different types of health problems on the SWB measures is undertaken within this section. This is followed in Section 5.2. by a discussion of how the findings relate to some of the key issues from the empirical literature on SWB, especially in connection to policy formation. Finally, Section 5.3 attempts to relate some of the key findings and issues raised in Section 5.2. to the wellbeing questions that have been included in the National Survey for Wales.

5. 1. Further Analysis of Key Issues from Previous Chapters

This section focuses more closely on some key factors that have arisen from the discussion in Chapters 3 and 4. In particular, two aspects are subjected to further examination: unemployment and health. The analysis with regards to unemployment focuses on the relationship between the four measures of SWB and the duration of the respondent's current spell of unemployment. The analysis follows the style that was presented in Chapter 3 since statistics are reported across the same SWB categories that have been previously described. The purpose of this analysis is to establish to what extent the length of the unemployment spell affects SWB in Wales given the previous literature on the impact of unemployment for the UK (e.g. Oswald, 1997). The same categories will also be presented in the analysis which relates SWB to different types of health problems in order to try to identify which aspects of ill-health tend to be associated with differences in SWB.

5.1.1. Unemployment and Wellbeing

Table 5.1 reports variations in SWB by unemployment duration. The categories of unemployment duration have been created so as to provide a reasonable sample size for each group. However, as can be seen there are a small number of observations for some of the categories, especially the longer unemployment durations. For example, there are only 46 observations in the 3 years and over unemployment duration category in Wales. The relationship between SWB and unemployment duration is fairly similar across the four measures but is strongest for life satisfaction. Here the difference in the average life satisfaction score between respondents unemployed for less than 3 months and those unemployed for 3 years or more is 1.4 points. The cell sizes are small for this latter category, which makes examining responses across the distribution more problematic, although the mean responses are not that different for the two other categories with an unemployment duration in excess of 3 months. Therefore, when examining differences by unemployment duration over the distribution of responses then we need to focus on the other categories.

The distribution of responses to the life satisfaction question shows large differences between individuals who have been unemployed for only a short period and the longer term unemployed. For example, the percentage of respondents in Wales who were unemployed for less than 3 months and reported a very low level of satisfaction was only around half the percentage of that for those unemployed between 3 and 12

months and between 1 and 3 years. Furthermore, 28% of respondents in the shortest unemployment duration group reported a high level of satisfaction, compared with 15% in the 3-12 month and 12% in the 1-3 year categories. In fact, the percentage of those unemployed for under 3 months indicating a high level of life satisfaction is slightly higher than it is for full and part-time employees in Wales. The percentage within the shortest duration group reporting low levels of anxiety is also very similar to that of employees. The percentage of respondents that had a very low level on the worthwhile and happiness measures was higher in the 3-12 months duration category than it is for those who had been unemployed for between 1 and 3 years. The mean level of anxiety is also highest for respondents in the former group. This is the result of the relatively high percentage in the very high anxiety category since almost a third of this group reported a very high level of anxiety.

Table 5.1: Variations in SWB by Duration of Unemployment

	Life Satisfaction					
Duration of Unemployment	**Very low**	**Low**	**Medium**	**High**	**Mean**	**N**
Less than 3 months	11.8	18.2	42.2	27.9	7.2	124
Between 3 and 12 months	23.5	28.7	32.3	15.4	6.1	129
Between 1 and 3 years	24.2	26.0	37.8	12.1	6.0	85
3 years or more	-	-	-	-	5.8	46
	Things in Life are Worthwhile					
	Very low	**Low**	**Medium**	**High**	**Mean**	**N**
Less than 3 months	10.2	23.7	34.8	31.2	7.2	123
Between 3 and 12 months	18.4	21.5	34.4	25.6	6.7	129
Between 1 and 3 years	15.2	21.9	51.4	11.5	6.6	84
3 years or more	-	-	-	-	6.3	46
	Happy Yesterday					
	Very low	**Low**	**Medium**	**High**	**Mean**	**N**
Less than 3 months	15.2	14.7	35.5	34.6	7.2	124
Between 3 and 12 months	22.5	19.5	28.9	29.2	6.6	129
Between 1 and 3 years	18.9	27.2	24.4	29.6	6.7	85
3 years or more	-	-	-	-	6.5	45
	Anxious Yesterday					
	Very high	**High**	**Medium**	**Low**	**Mean**	**N**
Less than 3 months	18.6	14.1	27.8	39.5	2.8	124
Between 3 and 12 months	32.8	14.2	19.0	33.9	3.8	128
Between 1 and 3 years	17.2	25.8	26.6	30.5	3.4	84
3 years or more	-	-	-	-	3.4	46

Notes: The sample is restricted to individuals aged over 16 who are resident in Wales and are unemployed. The data are weighted but an unweighted sample size N is also reported for each category. For each of the measures of SWB the sample size is too small for those who have been unemployed for 3 years or more for analysis of the distribution of responses.

The relationship between unemployment duration and SWB is similar in the rest of the UK but appears to be slightly stronger in Wales, according to the APS data. For example, the mean level of satisfaction for those unemployed for less than 3 months

in the rest of the UK is only 6.9, whilst it is around 6 for respondents who had been unemployed for 3 years or more. There is a similar percentage of respondents in the shortest duration group in the very low satisfaction category in other parts of the UK but only 20% in the high satisfaction category. The percentage of this group who reported a low level of anxiety is also around 7 percentage points lower in the rest of the UK than it is in Wales. However, the mean level of happiness in the longest unemployment duration group in Wales is slightly higher than that for the equivalent group in the rest of the UK, whilst the mean level of anxiety is 0.4 points higher.

5.1.2. Health and Wellbeing

Given the importance of self-reported health for SWB identified above, we explore an additional dimension of health namely, the type of health problem. In the APS, those who report a long-term health problem are asked to identify the type of their main health problem, where they are asked to select from a list of 17 possible conditions. From this we group the type of main health problem into 5 categories namely, health problems relating to limbs; sight, hearing or speech; skin, breathing or organs; mental health and other.[8] Table 5.2 presents the mean value of each of the four measures of SWB as well as the distribution across categories by type of main health problem. Individuals reporting physical health conditions consistently report lower SWB than those who do not report a health problem. For example, in terms of life satisfaction those with a physical condition report average satisfaction of 7.2 while the corresponding figure for those who do not report a condition is 7.7. Regardless of which measure of SWB is considered the variation between physical health problems is relatively modest, although individuals reporting problems with skin, breathing or organs have slightly higher SWB.

It is, however, individuals with mental health problems that report considerably worse SWB. For this group the mean value of life satisfaction drops to 5.5. Consistent with this 65% of individuals with mental health problems report low or very low life satisfaction. This is not surprising since some of the conditions which define mental health are expected to be directly related to reporting SWB, for example, depression. Indeed, this may explain the particularly acute impact on reporting being anxious yesterday where, for those who report mental health conditions, the average is 5.6 compared to 3.4 for those with physical conditions. Consistent with this, more than half (53%) of those reporting mental health problems report very high levels of anxiety yesterday, nearly double that of any of the physical conditions. Further examination of those reporting mental health conditions confirm that it is individuals reporting *depression, bad nerves and anxiety* and *mental illness, phobia, panics* rather than *learning difficulties* that report the lowest SWB. Overall, it is therefore unclear to what extent low SWB among those reporting mental conditions is a result of the concepts are capturing some shared component, or whether low SWB is also a cause or consequence of reporting mental health conditions. Previous evidence has, for example, identified particularly acute labour market disadvantage associated with mental health (Jones, 2011) which may contribute to low SWB. Regardless of the

[8] Limbs include problems with arms and hands; legs or feet; back or neck. Sight, hearing or speech includes difficulty in seeing; difficulty in hearing; speech impediment. Skin, breathing or organs include skin conditions, allergies; chest, breathing problems, asthma, bronchitis; heart, blood pressure, circulation; stomach, liver, kidney, digestion. Mental health includes depression, bad nerves, anxiety; learning difficulties; mental illness, phobia, panics. Other include diabetes; epilepsy; progressive illness; other problems, disabilities.

mechanisms involved, the analysis highlights the importance of considering mental health when analysing the relationship between SWB and self-reported general health or long-term disability.

Table 5.2: Variations in SWB by Type of Main Health Problem

	Life Satisfaction					
Type of health problem	**Very low**	**Low**	**Medium**	**High**	**Mean**	**N**
Limbs	10.8	22.9	42.8	23.6	7.1	1160
Sight, hearing or speech	-	-	-	-	7.0	95
Skin, breathing or organs	7.9	16.9	48.4	26.8	7.4	1434
Mental health	30.3	34.7	25.6	9.4	5.5	319
Other	13.5	20.2	42.8	23.5	7.0	483
	Things in Life are Worthwhile					
	Very low	**Low**	**Medium**	**High**	**Mean**	**N**
Limbs	6.7	17.6	44.4	31.3	7.6	1155
Sight, hearing or speech	-	-	-	-	7.4	95
Skin, breathing or organs	4.7	14.9	46.3	34.0	7.7	1426
Mental health	25.0	28.0	29.6	17.4	6.0	317
Other	9.0	19.7	44.5	26.8	7.3	482
	Happy Yesterday					
	Very low	**Low**	**Medium**	**High**	**Mean**	**N**
Limbs	14.8	17.6	37.3	30.4	7.1	1159
Sight, hearing or speech	20.7	24.3	24.9	30.0	6.7	96
Skin, breathing or organs	12.4	18.2	36.9	32.5	7.2	1432
Mental health	36.4	22.1	25.4	16.1	5.4	320
Other	14.8	18.6	37.1	29.5	6.9	481
	Anxious Yesterday					
	Very high	**High**	**Medium**	**Low**	**Mean**	**N**
Limbs	26.1	18.3	21.9	33.8	3.4	1159
Sight, hearing or speech	19.6	24.6	22.2	33.6	3.3	95
Skin, breathing or organs	23.6	17.8	22.6	36.0	3.3	1432
Mental health	52.7	18.8	16.7	11.8	5.6	319
Other	29.5	16.6	20.1	33.8	3.6	481

Notes: The sample is restricted to individuals aged over 16 who are resident in Wales and report a long-term health problem. The data are weighted but an unweighted sample size N is also reported for each category. For some measures of SWB the sample size for sight, hearing and speech is not sufficient for analysis of the distribution of responses.

5.2. Discussion of Main Findings in Relation to the Previous Literature

Recent research has examined new data and flexible models, which have emphasized happiness from a policy objective. For instance, Di Tella and MacCulloch (2006) suggest that `to provide more help to the policy makers, researchers have to be more specific about the distributional details of the proposed policies'. However, a good policy analysis necessitates a strong theoretical and a flexible empirical model so that a prediction about future can be made with reliability and precision. Sometimes, good

theories do not translate into a good empirical construct due to two main reasons: first, `minimizing' uncertainty (related to both model and the parameters) in empirical models is often very complex and methods are still evolving to achieve the same with minimum loss of information from the data.

Most of the policy based research on the happiness or SWB, has tended to make extensive use of economic analysis for quantification. As a result, these studies typically equate hedonic utility with happiness. Several features have emerged from this literature. First, the hedonic impact of sustained changes in economic conditions has a tendency to diminish over time. For example, people become accustomed to an expensive lifestyle or a subdued life, within which there is a perception that the current socio-economic circumstances cannot be changed. This relates on the 'habit formation' and 'habit persistence' aspects of an individual's life. Whilst new situations can bring about a change in perceptions, an unchanged socio-economic situation forces individuals to 'adapt' to a specific habit. It is not necessary though that the individual would be absolutely happy under new circumstance even if s/he has adjusted to the new situation. Secondly, happiness is influenced by the individual's prior expectations concerning their own success. This is also affected significantly by 'peer comparisons', which in the recent literature on the economics of happiness has been discussed as the effect of 'relative income on happiness' i.e. the Easterlin paradox. Thirdly, while reported levels of happiness can be volatile, it tends to revert over time to a relatively stable long-term mean. This characteristic of happiness refers to the long-term determinants, such as social relationships, recreative values, leisure, social cooperation etc., which all come under the general concept of social capital.

By considering the above three features, it means that individuals are mainly concerned not with their absolute level of success, but rather with the difference between their success and a benchmark that changes over time. The latter may refer to changing economic circumstances, in which some people are made richer whilst others become more socially and economically alienated. Therefore, whilst cross-sectional data provide some useful information on variations in SWB across different groups at particular point in time, it is also necessary to examine the extent to which SWB changes over time with respect to different socio-economic characteristics. This implies that there is also a need to examine longitudinal data to establish how reported levels of SWB vary over time for particular groups as they adjust, or fail to adjust, to their circumstances. This is particularly relevant in terms of the key influences of unemployment and ill-health that have previously been identified.

Some recent UK studies have analysed how individuals adapt to major life events. For example, Clark *et al.* (2012) use British Household Panel Study (BHPS) data to compare the extent to which adaption in Wellbeing takes place with respect to marriage, the birth of children, divorce, widowhood and unemployment. They report that adaption to the first four of these life events is rapid and complete but not for unemployment. In particular, they find no evidence of quick adaption to unemployment and comment that 'unemployment starts off bad and pretty much stays bad'. The findings appear stronger for men but the sample sizes for women are quite small. In terms of health, Oswald and Powdthavee (2008) examine BHPS and German panel data to establish whether Wellbeing recovers for individuals who become disabled. They argue that such individuals do adapt considerably to their health

situation over time and that hedonic adaption of between 30% and 50% occurs after three years of disability, depending on its severity. Our findings in terms of unemployment duration are consistent with those of Clark *et al.* (2012) despite not having repeated information on individuals over time. Given the results, it would be interesting to observe whether there is adaption with respect to different types of (long-term) illnesses over time, especially if there are differences between Wales and other parts of the UK. There is no information in the APS on the length of illness or disability but some analysis may be possible in coming years with the availability of a larger number of observations on the same individuals in the Understanding Society dataset. It may also be possible to use the panel element of the boost to the APS in Wales to examine how SWB varies over a period of up to four years for any individual included in the sample. Moreover, panel data allow for the potential to control for unobserved factors through the application of appropriate statistical techniques.

5.3. Discussion in Relation to the National Survey for Wales

This section attempts to relate our main findings as well as the discussion from the previous section to questions that have, and could be, included in the National Survey for Wales (NSW). The NSW includes the four SWB questions that have been developed by the ONS. These will enable direct comparison with those included in the APS/Integrated Household Survey (IHS). In addition, given the range of questions that has been included in the NSW, such as on views towards the local community and environment, this should enable more detailed analysis of the spatial variations than we have discussed using the APS.

The National Survey for Wales also includes some supplementary questions on satisfaction with different aspects of an individual's life. These aspects appear to cover the main influences on SWB since individuals are requested to state their level of satisfaction on a 0-10 scale on their personal relationships, physical health, mental wellbeing, work situation, financial situation, area of residence, leisure and their children's Wellbeing. These questions should provide added value to those included in the APS/IHS. For example, given that individuals are asked to indicate their satisfaction with their physical health and mental Wellbeing, in addition to a range of other domains, then it should be possible to provide a more detailed picture of the channels through which ill-health affects SWB. For example, it will be possible to distinguish the direct influence of ill-health on the health-related domains of SWB from the more indirect influence of health on work, social relationships and financial difficulty. It may also be possible to use these questions to disentangle some of the causes of the low levels of SWB for the unemployed since respondents are asked to state their satisfaction with their work and financial situation as well as possibly being able to detect the detrimental effect of joblessness on health and personal relationships. Future rounds of the NSW may wish to consider more detailed questions for those groups that report low levels of SWB. For example, information could be requested from the long-term unemployed and individuals with particular illnesses on their views towards particular support services that are provided by public organisations.

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APPENDIX

Table A1. Variations in Life Satisfaction by Equality Groups in the Rest of the UK

	Life Satisfaction					
	Very low	**Low**	**Medium**	**High**	**Mean**	**N**
Male	7.2	17.1	51.7	24.0	7.3	31325
Female	6.8	17.8	47.4	28.0	7.4	40035
Aged 16-24	5.8	14.8	51.5	27.9	7.5	4340
Aged 25-34	5.4	17.4	53.3	23.9	7.4	9816
Aged 35-44	7.3	18.5	52.8	21.4	7.2	12205
Aged 45-54	9.7	20.8	49.4	20.1	7.1	13291
Aged 55-64	8.1	17.4	48.0	26.5	7.3	13265
Aged 65-74	5.1	14.9	44.7	35.3	7.7	11337
Aged 75 & over	6.8	16.7	40.9	35.6	7.7	7106
White	6.8	16.7	50.2	26.4	7.4	65414
Ethnic Minority	9.2	23.9	43.5	23.4	7.1	5901
Not disability	4.6	15.2	52.9	27.3	7.6	47807
Disability	15.6	25.3	38.5	20.6	6.7	16276
No Welsh identity	7.0	17.5	49.5	26.0	7.4	70792
Welsh identity	6.2	16.7	50.0	27.1	7.5	551

Notes: The sample is restricted to individuals aged over 16 who are resident in Wales. The data are weighted but an unweighted sample size N is also reported for each category. Disability has been defined using the *lnglim* and *healim* variables since the *discurr* variable was not included in the APS dataset received from the ONS.

Table A2. Variations in the Worthwhile Measure by Equality Groups in the Rest of the UK

	Worthwhile					
	Very low	**Low**	**Medium**	**High**	**Mean**	**N**
Male	5.6	16.6	50.3	27.5	7.5	31187
Female	4.6	14.2	46.4	34.8	7.8	39865
Aged 16-24	5.2	17.6	47.8	29.4	7.5	4325
Aged 25-34	3.9	16.0	52.2	27.8	7.6	9772
Aged 35-44	4.8	14.7	52.0	28.5	7.6	12172
Aged 45-54	5.9	16.4	50.6	27.1	7.5	13249
Aged 55-64	5.4	13.9	47.8	32.9	7.7	13230
Aged 65-74	3.9	11.6	43.2	41.4	8.0	11284
Aged 75 & over	7.0	16.9	37.0	39.2	7.7	7020
White	5.0	14.8	48.6	31.6	7.7	65159
Ethnic Minority	6.1	20.4	45.6	27.8	7.4	5849
Not disability	3.2	13.8	51.0	31.9	7.8	47668
Disability	11.5	20.9	39.9	27.7	7.1	16180
No Welsh identity	5.1	15.4	48.3	31.2	7.6	70486
Welsh identity	5.0	13.6	46.8	34.6	7.8	549

Notes: The sample is restricted to individuals aged over 16 who are resident in Wales. The data are weighted but an unweighted sample size N is also reported for each category. Disability has been defined using the *lnglim* and *healim* variables since the *discurr* variable was not included in the APS dataset received from the ONS.

Table A3. Variations in Happiness by Equality Groups in the Rest of the UK

	Happy yesterday					
	Very low	**Low**	**Medium**	**High**	**Mean**	**N**
Male	10.5	18.5	40.5	30.5	7.3	31305
Female	11.2	17.2	37.1	34.5	7.3	40048
Aged 16-24	10.7	18.0	38.1	33.2	7.3	4342
Aged 25-34	11.2	19.7	40.2	28.8	7.2	9809
Aged 35-44	10.7	18.6	42.3	28.4	7.2	12201
Aged 45-54	13.0	19.6	39.6	27.8	7.0	13290
Aged 55-64	11.0	16.7	38.1	34.2	7.3	13259
Aged 65-74	8.3	14.1	34.9	42.7	7.7	11341
Aged 75 & over	9.7	15.6	34.0	40.6	7.6	7111
White	10.7	17.5	39.1	32.7	7.3	65408
Ethnic Minority	12.5	20.7	35.7	31.1	7.1	5903
Not disability	8.6	17.0	40.7	33.7	7.5	47809
Disability	19.1	20.8	32.6	27.5	6.7	16268
No Welsh identity	10.9	17.8	38.7	32.6	7.3	70784
Welsh identity	9.7	17.9	41.7	30.7	7.3	552

Notes: The sample is restricted to individuals aged over 16 who are resident in Wales. The data are weighted but an unweighted sample size N is also reported for each category. Disability has been defined using the *lnglim* and *healim* variables since the *discurr* variable was not included in the APS dataset received from the ONS.

Table A4. Variations in Anxiety by Equality Groups in the Rest of the UK

	Anxious Yesterday					
	Very high	**High**	**Medium**	**Low**	**Mean**	**N**
Male	20.5	18.3	25.5	35.7	3.1	31239
Female	24.0	18.1	21.9	36.1	3.3	39986
Aged 16-24	19.2	17.4	25.1	38.3	3.0	4333
Aged 25-34	21.5	19.3	25.8	33.4	3.2	9787
Aged 35-44	24.1	18.3	25.4	32.3	3.4	12187
Aged 45-54	24.9	19.4	23.9	31.8	3.4	13281
Aged 55-64	23.5	17.9	22.1	36.5	3.3	13243
Aged 65-74	20.4	16.5	20.2	42.9	2.9	11320
Aged 75 & over	20.4	17.2	19.9	42.5	2.9	7074
White	21.9	17.9	23.7	36.6	3.2	65311
Ethnic Minority	25.3	20.7	23.6	30.4	3.6	5869
Not disability	19.8	17.7	25.0	37.5	3.0	47741
Disability	31.2	19.9	19.6	29.4	3.9	16239
No Welsh identity	22.3	18.2	23.7	35.9	3.2	70658
Welsh identity	21.7	21.0	24.3	33.1	3.3	551

Notes: The sample is restricted to individuals aged over 16 who are resident in Wales. The data are weighted but an unweighted sample size N is also reported for each category. Disability has been defined using the *lnglim* and *healim* variables since the *discurr* variable was not included in the APS dataset received from the ONS.

Table A5. Probability (Marginal Effects) of Being in Each Satisfaction Category in the UK

	V. low Satisfaction		Low Satisfaction		Med. Satisfaction		High Satisfaction	
	M.E.	p-value	M.E.	p-value	M.E.	p-value	M.E.	p-value
North East	-0.002	0.381	-0.003	0.386	0.000	0.468	0.005	0.389
North West	0.002	0.143	0.005	0.138	0.000	0.023	-0.008	0.135
Yorkshire & the Humber	0.000	0.971	0.000	0.971	0.000	0.971	0.000	0.971
East Midlands	0.001	0.634	0.002	0.632	0.000	0.565	-0.003	0.630
West Midlands	0.008	0.000	0.015	0.000	0.000	0.954	-0.023	0.000
East of England	0.005	0.028	0.009	0.024	0.000	0.020	-0.014	0.021
London	0.009	0.000	0.017	0.000	0.000	0.684	-0.026	0.000
South East	0.001	0.467	0.002	0.464	0.000	0.378	-0.004	0.463
South West	0.001	0.718	0.001	0.717	0.000	0.688	-0.002	0.716
Scotland	-0.004	0.005	-0.009	0.006	-0.001	0.041	0.014	0.006
Northern Ireland	-0.016	0.000	-0.037	0.000	-0.010	0.001	0.064	0.000
Telephone interview	-0.011	0.000	-0.022	0.000	-0.002	0.000	0.035	0.000
Female	-0.008	0.000	-0.015	0.000	-0.001	0.000	0.023	0.000
Aged 16-24	-0.029	0.000	-0.069	0.000	-0.031	0.000	0.129	0.000
Aged 25-34	-0.017	0.000	-0.036	0.000	-0.008	0.000	0.061	0.000
Aged 35-44	-0.006	0.000	-0.013	0.000	-0.002	0.001	0.021	0.000
Aged 55-64	-0.014	0.000	-0.030	0.000	-0.005	0.000	0.050	0.000
Aged 65-74	-0.026	0.000	-0.058	0.000	-0.018	0.000	0.101	0.000
Aged 75 & over	-0.032	0.000	-0.078	0.000	-0.036	0.000	0.146	0.000
Mixed	0.011	0.083	0.020	0.064	-0.001	0.635	-0.030	0.053
Indian	-0.004	0.216	-0.007	0.227	-0.001	0.380	0.012	0.235
Pakistani	0.008	0.076	0.016	0.062	0.000	0.794	-0.024	0.053
Bangladeshi	0.006	0.378	0.012	0.358	0.000	0.966	-0.019	0.344
Chinese	0.021	0.017	0.037	0.007	-0.005	0.279	-0.054	0.003
Other Asian	-0.006	0.135	-0.013	0.153	-0.002	0.349	0.021	0.167
Black	0.029	0.000	0.049	0.000	-0.009	0.000	-0.070	0.000
Other	0.003	0.465	0.006	0.456	0.000	0.000	-0.009	0.450
Disability	0.007	0.000	0.013	0.000	0.000	0.000	-0.020	0.000
No information on disability	0.007	0.000	0.014	0.000	0.000	0.463	-0.021	0.000
Other higher education	0.001	0.746	0.001	0.745	0.000	0.726	-0.002	0.745
A-level or equivalent	0.002	0.091	0.005	0.088	0.000	0.023	-0.007	0.086
GCSE grades A*-C or equivalent	0.003	0.030	0.006	0.028	0.000	0.001	-0.009	0.026
Other qualifications	-0.001	0.566	-0.002	0.568	0.000	0.609	0.003	0.570
No qualifications	-0.003	0.128	-0.005	0.133	0.000	0.232	0.008	0.137
No information on qualifications	0.008	0.001	0.015	0.001	0.000	0.152	-0.024	0.001

Part-time employee	0.002	0.093	0.005	0.090	0.000	0.018	-0.007	0.087
Self-employment	0.000	0.877	-0.001	0.877	0.000	0.881	0.001	0.877
Unemployment	0.068	0.000	0.096	0.000	-0.037	0.000	-0.126	0.000
Inactive – student	-0.009	0.004	-0.019	0.007	-0.003	0.096	0.031	0.010
Inactive – looking after family or home	0.006	0.003	0.012	0.002	0.000	0.500	-0.018	0.002
Inactive – short or long-term disabled	0.014	0.000	0.026	0.000	-0.001	0.086	-0.039	0.000
Inactive – retired	-0.021	0.000	-0.043	0.000	-0.008	0.000	0.072	0.000
Inactive – other	0.000	0.869	0.001	0.869	0.000	0.858	-0.001	0.868
Single (never married)	0.028	0.000	0.051	0.000	-0.003	0.000	-0.076	0.000
Divorced	0.038	0.000	0.065	0.000	-0.011	0.000	-0.092	0.000
Widowed	0.050	0.000	0.078	0.000	-0.020	0.000	-0.107	0.000
Owned outright	-0.009	0.000	-0.018	0.000	-0.002	0.000	0.029	0.000
Private landlord	0.006	0.000	0.011	0.000	0.000	0.006	-0.017	0.000
Social housing	0.004	0.009	0.007	0.008	0.000	0.000	-0.011	0.008
Other housing tenure	0.006	0.376	0.012	0.356	0.000	0.932	-0.018	0.343
Good Health	0.032	0.000	0.060	0.000	-0.001	0.120	-0.091	0.000
Fair Health	0.087	0.000	0.124	0.000	-0.043	0.000	-0.168	0.000
Bad Health	0.219	0.000	0.180	0.000	-0.176	0.000	-0.223	0.000
Very Bad Health	0.370	0.000	0.167	0.000	-0.299	0.000	-0.238	0.000
No information on Health	0.091	0.000	0.116	0.000	-0.058	0.000	-0.148	0.000
Pseudo R-squared					0.069			
Number of observations					79747			

Notes:

1. Excluded Categories are: Wales, Face-to-face interview, Aged 45-54, Not Disabled, White, Degree, Full-time employment, Married, Owning with a Mortgage and Very good health.

2. Estimates are based on weighted data.

Table A6. Probability (Marginal Effects) of Being in Each Worthwhile Category in the UK

	V. low Worthwhile		Low Worthwhile		Med. Worthwhile		High Worthwhile	
	M.E.	p-value	M.E.	p-value	M.E.	p-value	M.E.	p-value
North East	0.001	0.718	0.001	0.717	0.001	0.712	-0.003	0.716
North West	0.000	0.986	0.000	0.986	0.000	0.986	0.000	0.986
Yorkshire & the Humber	0.000	0.766	-0.001	0.767	0.000	0.769	0.002	0.767
East Midlands	0.002	0.358	0.004	0.352	0.002	0.329	-0.007	0.348
West Midlands	0.008	0.000	0.018	0.000	0.007	0.000	-0.032	0.000
East of England	0.001	0.431	0.003	0.427	0.001	0.410	-0.006	0.424
London	0.009	0.000	0.021	0.000	0.008	0.000	-0.038	0.000
South East	0.002	0.105	0.005	0.100	0.002	0.081	-0.010	0.097
South West	0.001	0.561	0.002	0.559	0.001	0.550	-0.004	0.557
Scotland	0.002	0.124	0.005	0.119	0.002	0.103	-0.009	0.117
Northern Ireland	-0.012	0.000	-0.032	0.000	-0.022	0.000	0.066	0.000
Telephone interview	-0.007	0.000	-0.018	0.000	-0.009	0.000	0.034	0.000
Female	-0.013	0.000	-0.030	0.000	-0.014	0.000	0.057	0.000
Aged 16-24	-0.007	0.000	-0.018	0.000	-0.010	0.000	0.035	0.000
Aged 25-34	-0.005	0.000	-0.013	0.000	-0.007	0.000	0.025	0.000
Aged 35-44	-0.003	0.002	-0.008	0.002	-0.004	0.004	0.015	0.002
Aged 55-64	-0.011	0.000	-0.027	0.000	-0.016	0.000	0.054	0.000
Aged 65-74	-0.022	0.000	-0.058	0.000	-0.045	0.000	0.125	0.000
Aged 75 & over	-0.020	0.000	-0.056	0.000	-0.046	0.000	0.122	0.000
Mixed	-0.002	0.666	-0.004	0.670	-0.002	0.686	0.008	0.674
Indian	0.001	0.687	0.002	0.684	0.001	0.674	-0.005	0.683
Pakistani	0.015	0.000	0.033	0.000	0.009	0.000	-0.058	0.000
Bangladeshi	0.009	0.133	0.021	0.107	0.007	0.012	-0.037	0.089
Chinese	0.029	0.001	0.056	0.000	0.008	0.000	-0.093	0.000
Other Asian	0.005	0.194	0.012	0.176	0.005	0.097	-0.023	0.163
Black	0.004	0.099	0.009	0.089	0.004	0.050	-0.017	0.082
Other	0.006	0.079	0.014	0.065	0.006	0.018	-0.026	0.056
Disability	-0.001	0.138	-0.003	0.140	-0.002	0.150	0.006	0.142
No information on disability	0.001	0.432	0.003	0.428	0.001	0.414	-0.005	0.426
Other higher education	0.000	0.877	0.000	0.877	0.000	0.877	0.001	0.877
A-level or equivalent	0.004	0.001	0.009	0.001	0.004	0.000	-0.017	0.000
GCSE grades A*-C or equivalent	0.007	0.000	0.015	0.000	0.006	0.000	-0.028	0.000
Other qualifications	0.006	0.000	0.014	0.000	0.006	0.000	-0.026	0.000
No qualifications	0.009	0.000	0.020	0.000	0.008	0.000	-0.036	0.000
No information on qualifications	0.012	0.000	0.026	0.000	0.010	0.000	-0.047	0.000

Part-time employee	-0.003	0.003	-0.007	0.004	-0.004	0.007	0.014	0.004
Self-employment	-0.007	0.000	-0.016	0.000	-0.009	0.000	0.032	0.000
Unemployment	0.033	0.000	0.063	0.000	0.009	0.000	-0.105	0.000
Inactive – student	-0.011	0.000	-0.028	0.000	-0.019	0.000	0.058	0.000
Inactive – looking after family or home	-0.009	0.000	-0.022	0.000	-0.014	0.000	0.045	0.000
Inactive – short or long-term disabled	0.016	0.000	0.034	0.000	0.010	0.000	-0.060	0.000
Inactive – retired	-0.007	0.000	-0.017	0.000	-0.009	0.000	0.034	0.000
Inactive – other	0.005	0.066	0.010	0.057	0.004	0.025	-0.019	0.050
Single (never married)	0.019	0.000	0.042	0.000	0.015	0.000	-0.076	0.000
Divorced	0.018	0.000	0.040	0.000	0.012	0.000	-0.070	0.000
Widowed	0.027	0.000	0.055	0.000	0.012	0.000	-0.094	0.000
Owned outright	-0.004	0.000	-0.010	0.000	-0.005	0.000	0.019	0.000
Private landlord	0.003	0.014	0.006	0.012	0.003	0.008	-0.012	0.011
Social housing	0.004	0.000	0.010	0.000	0.004	0.000	-0.018	0.000
Other housing tenure	0.009	0.143	0.019	0.118	0.007	0.021	-0.035	0.101
Good Health	0.022	0.000	0.049	0.000	0.020	0.000	-0.090	0.000
Fair Health	0.054	0.000	0.100	0.000	0.011	0.000	-0.165	0.000
Bad Health	0.133	0.000	0.168	0.000	-0.063	0.000	-0.238	0.000
Very Bad Health	0.240	0.000	0.200	0.000	-0.165	0.000	-0.275	0.000
No information on Health	0.055	0.000	0.095	0.000	-0.002	0.504	-0.148	0.000
Pseudo R-squared				0.050				
Number of observations				79747				

Notes:

1. Excluded Categories are: Wales, Face-to-face interview, Aged 45-54, Not Disabled, White, Degree, Full-time employment, Married, Owning with a Mortgage and Very good health.

2. Estimates are based on weighted data.

Table A7. Probability (Marginal Effects) of Being in Each Happiness Category in the UK

	V. low Happiness		Low Happiness		Med. Happiness		High Happiness	
	M.E.	p-value	M.E.	p-value	M.E.	p-value	M.E.	p-value
North East	0.003	0.322	0.003	0.317	0.001	0.258	-0.007	0.315
North West	0.008	0.005	0.008	0.004	0.001	0.000	-0.017	0.003
Yorkshire & the Humber	0.005	0.144	0.004	0.138	0.001	0.078	-0.010	0.136
East Midlands	0.005	0.178	0.005	0.170	0.001	0.090	-0.010	0.168
West Midlands	0.011	0.001	0.011	0.000	0.001	0.000	-0.023	0.000
East of England	0.005	0.116	0.005	0.109	0.001	0.046	-0.011	0.108
London	0.015	0.000	0.014	0.000	0.001	0.000	-0.030	0.000
South East	0.003	0.366	0.002	0.362	0.000	0.323	-0.005	0.361
South West	0.005	0.086	0.005	0.080	0.001	0.031	-0.011	0.079
Scotland	0.002	0.431	0.002	0.428	0.000	0.401	-0.004	0.428
Northern Ireland	-0.019	0.000	-0.021	0.000	-0.006	0.007	0.046	0.000
Telephone interview	-0.014	0.000	-0.014	0.000	-0.003	0.000	0.031	0.000
Female	-0.006	0.000	-0.006	0.000	-0.001	0.000	0.013	0.000
Aged 16-24	-0.024	0.000	-0.026	0.000	-0.008	0.000	0.058	0.000
Aged 25-34	-0.006	0.022	-0.006	0.025	-0.001	0.048	0.012	0.026
Aged 35-44	-0.004	0.040	-0.004	0.043	-0.001	0.066	0.010	0.044
Aged 55-64	-0.022	0.000	-0.023	0.000	-0.006	0.000	0.052	0.000
Aged 65-74	-0.040	0.000	-0.044	0.000	-0.016	0.000	0.100	0.000
Aged 75 & over	-0.043	0.000	-0.049	0.000	-0.022	0.000	0.114	0.000
Mixed	0.005	0.547	0.005	0.538	0.001	0.418	-0.011	0.536
Indian	-0.008	0.089	-0.008	0.100	-0.002	0.183	0.019	0.104
Pakistani	0.007	0.323	0.007	0.309	0.001	0.127	-0.015	0.306
Bangladeshi	-0.006	0.561	-0.006	0.571	-0.001	0.633	0.014	0.574
Chinese	0.008	0.471	0.008	0.455	0.001	0.185	-0.018	0.452
Other Asian	-0.013	0.054	-0.014	0.069	-0.004	0.174	0.031	0.073
Black	-0.002	0.698	-0.002	0.700	0.000	0.717	0.004	0.701
Other	-0.008	0.231	-0.008	0.246	-0.002	0.342	0.017	0.250
Disability	0.002	0.324	0.002	0.321	0.000	0.301	-0.004	0.321
No information on disability	0.008	0.015	0.007	0.012	0.001	0.001	-0.016	0.012
Other higher education	-0.004	0.157	-0.004	0.163	-0.001	0.207	0.008	0.164
A-level or equivalent	-0.004	0.074	-0.004	0.077	-0.001	0.104	0.008	0.078
GCSE grades A*-C or equivalent	-0.003	0.129	-0.003	0.132	-0.001	0.162	0.007	0.133
Other qualifications	-0.011	0.000	-0.011	0.000	-0.003	0.002	0.024	0.000
No qualifications	-0.008	0.005	-0.008	0.006	-0.002	0.022	0.017	0.007
No information on qualifications	0.003	0.412	0.003	0.408	0.001	0.372	-0.007	0.407

Part-time employee	-0.006	0.005	-0.006	0.006	-0.001	0.016	0.013	0.006
Self-employment	-0.007	0.011	-0.007	0.013	-0.001	0.035	0.015	0.014
Unemployment	0.027	0.000	0.024	0.000	0.001	0.194	-0.052	0.000
Inactive – student	-0.008	0.173	-0.008	0.187	-0.002	0.279	0.017	0.190
Inactive – looking after family or home	-0.011	0.000	-0.011	0.000	-0.003	0.005	0.025	0.000
Inactive – short or long-term disabled	0.000	0.923	0.000	0.923	0.000	0.922	-0.001	0.923
Inactive – retired	-0.036	0.000	-0.038	0.000	-0.011	0.000	0.085	0.000
Inactive – other	-0.011	0.012	-0.011	0.017	-0.003	0.064	0.025	0.018
Single (never married)	0.032	0.000	0.030	0.000	0.002	0.000	-0.064	0.000
Divorced	0.036	0.000	0.032	0.000	0.001	0.057	-0.069	0.000
Widowed	0.052	0.000	0.043	0.000	-0.003	0.001	-0.092	0.000
Owned outright	-0.009	0.000	-0.009	0.000	-0.002	0.000	0.020	0.000
Private landlord	0.003	0.191	0.003	0.187	0.000	0.151	-0.006	0.186
Social housing	0.008	0.001	0.007	0.001	0.001	0.000	-0.016	0.001
Other housing tenure	-0.005	0.654	-0.005	0.661	-0.001	0.701	0.010	0.662
Good Health	0.046	0.000	0.043	0.000	0.004	0.000	-0.093	0.000
Fair Health	0.114	0.000	0.083	0.000	-0.018	0.000	-0.179	0.000
Bad Health	0.245	0.000	0.108	0.000	-0.099	0.000	-0.254	0.000
Very Bad Health	0.386	0.000	0.092	0.000	-0.188	0.000	-0.290	0.000
No information on Health	0.094	0.000	0.066	0.000	-0.019	0.000	-0.140	0.000
Pseudo R-squared				0.040				
Number of observations				79747				

Notes:

1. Excluded Categories are: Wales, Face-to-face interview, Aged 45-54, Not Disabled, White, Degree, Full-time employment, Married, Owning with a Mortgage and Very good health.

2. Estimates are based on weighted data.

Table A8. Probability (Marginal Effects) of Being in Each Anxiety Category in the UK

	Very High Anxiety		High Anxiety		Medium Anxiety		Low Anxiety	
	M.E.	p-value	M.E.	p-value	M.E.	p-value	M.E.	p-value
North East	0.003	0.619	0.001	0.616	0.000	0.645	-0.004	0.618
North West	0.011	0.021	0.003	0.017	-0.001	0.059	-0.014	0.019
Yorkshire & the Humber	0.003	0.640	0.001	0.638	0.000	0.662	-0.003	0.639
East Midlands	0.010	0.132	0.003	0.120	0.000	0.218	-0.012	0.126
West Midlands	0.001	0.851	0.000	0.850	0.000	0.855	-0.001	0.850
East of England	0.013	0.029	0.004	0.023	-0.001	0.086	-0.016	0.026
London	0.032	0.000	0.009	0.000	-0.002	0.000	-0.039	0.000
South East	0.002	0.732	0.001	0.731	0.000	0.742	-0.002	0.731
South West	0.002	0.674	0.001	0.671	0.000	0.691	-0.003	0.672
Scotland	-0.010	0.023	-0.003	0.027	0.000	0.001	0.013	0.025
Northern Ireland	0.001	0.944	0.000	0.943	0.000	0.945	-0.001	0.943
Telephone interview	-0.015	0.000	-0.005	0.000	0.001	0.000	0.019	0.000
Female	0.025	0.000	0.008	0.000	-0.001	0.000	-0.032	0.000
Aged 16-24	-0.043	0.000	-0.015	0.000	-0.001	0.139	0.059	0.000
Aged 25-34	-0.017	0.000	-0.005	0.000	0.000	0.000	0.022	0.000
Aged 35-44	-0.003	0.399	-0.001	0.403	0.000	0.360	0.004	0.401
Aged 55-64	-0.021	0.000	-0.007	0.000	0.000	0.000	0.028	0.000
Aged 65-74	-0.043	0.000	-0.015	0.000	0.000	0.749	0.057	0.000
Aged 75 & over	-0.057	0.000	-0.021	0.000	-0.002	0.040	0.080	0.000
Mixed	0.011	0.497	0.003	0.479	-0.001	0.588	-0.013	0.489
Indian	0.034	0.001	0.009	0.000	-0.003	0.019	-0.041	0.000
Pakistani	0.026	0.044	0.007	0.026	-0.002	0.156	-0.031	0.035
Bangladeshi	0.046	0.032	0.012	0.009	-0.004	0.157	-0.054	0.020
Chinese	0.022	0.278	0.006	0.236	-0.001	0.436	-0.027	0.259
Other Asian	0.021	0.144	0.006	0.112	-0.001	0.290	-0.026	0.129
Black	0.002	0.785	0.001	0.783	0.000	0.798	-0.003	0.784
Other	0.009	0.454	0.003	0.439	0.000	0.541	-0.011	0.447
Disability	0.015	0.000	0.004	0.000	-0.001	0.001	-0.018	0.000
No information on disability	0.011	0.057	0.003	0.049	0.000	0.117	-0.013	0.053
Other higher education	-0.015	0.002	-0.005	0.003	0.000	0.000	0.019	0.002
A-level or equivalent	-0.021	0.000	-0.007	0.000	0.000	0.000	0.027	0.000
GCSE grades A*-C or equivalent	-0.023	0.000	-0.008	0.000	0.000	0.000	0.030	0.000
Other qualifications	-0.022	0.000	-0.007	0.000	0.000	0.002	0.028	0.000
No qualifications	-0.016	0.001	-0.005	0.002	0.000	0.000	0.021	0.001
No information on qualifications	0.004	0.537	0.001	0.533	0.000	0.567	-0.005	0.535

Part-time employee	-0.005	0.164	-0.002	0.170	0.000	0.105	0.007	0.167
Self-employment	-0.005	0.267	-0.002	0.275	0.000	0.177	0.007	0.271
Unemployment	0.036	0.000	0.010	0.000	-0.003	0.000	-0.043	0.000
Inactive – student	0.044	0.000	0.012	0.000	-0.004	0.012	-0.052	0.000
Inactive – looking after family or home	-0.008	0.135	-0.003	0.146	0.000	0.026	0.011	0.141
Inactive – short or long-term disabled	0.017	0.008	0.005	0.005	-0.001	0.045	-0.022	0.006
Inactive – retired	-0.053	0.000	-0.018	0.000	0.000	0.280	0.070	0.000
Inactive – other	-0.013	0.117	-0.004	0.134	0.000	0.000	0.017	0.126
Single (never married)	0.013	0.000	0.004	0.000	-0.001	0.003	-0.016	0.000
Divorced	0.021	0.000	0.006	0.000	-0.001	0.000	-0.026	0.000
Widowed	0.014	0.003	0.004	0.002	-0.001	0.021	-0.018	0.003
Owned outright	-0.010	0.004	-0.003	0.005	0.000	0.002	0.013	0.004
Private landlord	0.007	0.092	0.002	0.086	0.000	0.141	-0.009	0.089
Social housing	-0.006	0.150	-0.002	0.156	0.000	0.096	0.007	0.153
Other housing tenure	-0.004	0.823	-0.001	0.826	0.000	0.789	0.005	0.825
Good Health	0.061	0.000	0.018	0.000	-0.003	0.000	-0.076	0.000
Fair Health	0.145	0.000	0.031	0.000	-0.018	0.000	-0.158	0.000
Bad Health	0.236	0.000	0.028	0.000	-0.048	0.000	-0.216	0.000
Very Bad Health	0.328	0.000	0.013	0.000	-0.081	0.000	-0.260	0.000
No information on Health	0.129	0.000	0.025	0.000	-0.019	0.000	-0.134	0.000
Pseudo R-squared					0.020			
Number of observations					79747			

Notes:

1. Excluded Categories are: Wales, Face-to-face interview, Aged 45-54, Not Disabled, White, Degree, Full-time employment, Married, Owning with a Mortgage and Very good health.

2. Estimates are based on weighted data.

Table A9. Probability (Marginal Effects) of Being in Each Satisfaction Category in Wales

	V. low Satisfaction		Low Satisfaction		Med. Satisfaction		High Satisfaction	
	M.E.	p-value	M.E.	p-value	M.E.	p-value	M.E.	p-value
Blaenau Gwent	0.004	0.631	0.009	0.621	0.001	0.331	-0.014	0.615
Bridgend	0.000	0.962	0.001	0.962	0.000	0.961	-0.001	0.962
Caerphilly	0.004	0.654	0.007	0.646	0.001	0.474	-0.011	0.642
Carmarthenshire	0.016	0.106	0.028	0.076	0.000	0.924	-0.044	0.061
Ceredigion	0.005	0.574	0.010	0.562	0.001	0.164	-0.016	0.554
Conwy	0.015	0.108	0.028	0.079	0.000	0.935	-0.043	0.064
Denbighshire	0.016	0.086	0.030	0.059	0.000	0.868	-0.046	0.046
Flintshire	0.006	0.473	0.012	0.455	0.001	0.014	-0.019	0.444
Gwynedd	0.007	0.450	0.013	0.432	0.001	0.013	-0.020	0.420
Isle of Anglesey	0.001	0.907	0.002	0.906	0.000	0.898	-0.003	0.906
Merthyr	-0.007	0.386	-0.014	0.406	-0.003	0.543	0.023	0.420
Monmouthshire	-0.001	0.885	-0.002	0.886	0.000	0.894	0.004	0.886
Neath Port Talbot	0.012	0.194	0.022	0.163	0.000	0.743	-0.034	0.146
Newport	0.006	0.493	0.011	0.478	0.001	0.049	-0.018	0.468
Pembrokeshire	0.000	0.957	0.001	0.957	0.000	0.955	-0.001	0.956
Powys	-0.003	0.699	-0.006	0.704	-0.001	0.749	0.010	0.707
Rhondda Cynon Taff	0.009	0.319	0.016	0.294	0.001	0.203	-0.026	0.279
Swansea	0.014	0.119	0.026	0.091	0.000	0.951	-0.040	0.076
Torfaen	0.009	0.294	0.017	0.268	0.001	0.249	-0.027	0.252
Vale of Glamorgan	0.001	0.944	0.001	0.944	0.000	0.941	-0.002	0.944
Wrexham	-0.010	0.150	-0.021	0.178	-0.005	0.364	0.036	0.199
Telephone interview	-0.014	0.000	-0.027	0.000	-0.003	0.000	0.044	0.000
Female	-0.006	0.025	-0.011	0.023	-0.001	0.030	0.019	0.023
Aged 16-24	-0.023	0.000	-0.054	0.000	-0.023	0.010	0.100	0.000
Aged 25-34	-0.017	0.000	-0.037	0.000	-0.011	0.012	0.065	0.000
Aged 35-44	-0.003	0.408	-0.007	0.415	-0.001	0.492	0.011	0.421
Aged 55-64	-0.012	0.001	-0.025	0.001	-0.005	0.027	0.043	0.002
Aged 65-74	-0.011	0.045	-0.024	0.056	-0.005	0.180	0.040	0.066
Aged 75 & over	-0.025	0.000	-0.056	0.000	-0.022	0.034	0.103	0.001
Nonwhite	0.007	0.455	0.014	0.435	0.001	0.070	-0.022	0.421
Disability	0.001	0.750	0.002	0.750	0.000	0.754	-0.003	0.750
No information on disability	0.006	0.136	0.011	0.128	0.001	0.050	-0.018	0.122
Welsh Identity	-0.005	0.324	-0.010	0.334	-0.002	0.432	0.016	0.342
Other higher education	-0.001	0.798	-0.003	0.799	0.000	0.815	0.004	0.800
A-level or equivalent	0.005	0.310	0.009	0.300	0.001	0.155	-0.014	0.293
GCSE grades A*-C or equivalent	0.005	0.222	0.010	0.212	0.001	0.077	-0.017	0.205

Other qualifications	0.002	0.706	0.004	0.703	0.000	0.644	-0.007	0.700
No qualifications	-0.013	0.003	-0.028	0.005	-0.007	0.068	0.048	0.008
No information on qualifications	0.002	0.759	0.004	0.757	0.000	0.730	-0.007	0.756
Part-time employee	0.006	0.159	0.012	0.147	0.001	0.021	-0.019	0.139
Self-employment	-0.003	0.489	-0.007	0.497	-0.001	0.574	0.011	0.503
Unemployment	0.068	0.000	0.095	0.000	-0.032	0.001	-0.131	0.000
Inactive – student	-0.015	0.072	-0.034	0.108	-0.011	0.328	0.060	0.139
Inactive – looking after family or home	0.007	0.254	0.014	0.234	0.001	0.023	-0.022	0.220
Inactive – short or long-term disabled	0.010	0.157	0.018	0.136	0.001	0.205	-0.029	0.122
Inactive – retired	-0.019	0.000	-0.040	0.000	-0.009	0.010	0.068	0.000
Inactive – other	-0.002	0.798	-0.004	0.801	-0.001	0.828	0.007	0.803
Single (never married)	0.032	0.000	0.057	0.000	-0.002	0.307	-0.087	0.000
Divorced	0.044	0.000	0.071	0.000	-0.010	0.004	-0.105	0.000
Widowed	0.045	0.000	0.072	0.000	-0.012	0.007	-0.105	0.000
Owned outright	-0.012	0.000	-0.024	0.000	-0.004	0.007	0.039	0.001
Private landlord	0.004	0.428	0.007	0.420	0.001	0.281	-0.011	0.415
Social housing	-0.001	0.903	-0.001	0.903	0.000	0.906	0.002	0.903
Other housing tenure	-0.005	0.832	-0.010	0.837	-0.002	0.876	0.017	0.841
Good Health	0.040	0.000	0.072	0.000	0.000	0.819	-0.112	0.000
Fair Health	0.092	0.000	0.129	0.000	-0.038	0.000	-0.182	0.000
Bad Health	0.240	0.000	0.184	0.000	-0.180	0.000	-0.244	0.000
Very Bad Health	0.347	0.000	0.171	0.000	-0.270	0.000	-0.248	0.000
No information on Health	0.128	0.000	0.144	0.000	-0.082	0.000	-0.190	0.000
Second WIMD quartile	-0.006	0.110	-0.011	0.116	-0.002	0.196	0.018	0.121
Third WIMD quartile	-0.005	0.175	-0.010	0.182	-0.002	0.261	0.017	0.186
Fourth WIMD quartile	-0.006	0.123	-0.012	0.130	-0.002	0.217	0.020	0.135
Town and Fringe	-0.005	0.102	-0.011	0.110	-0.002	0.205	0.018	0.116
Village	-0.006	0.131	-0.011	0.142	-0.002	0.252	0.019	0.149
Hamlet	-0.008	0.075	-0.016	0.087	-0.003	0.218	0.027	0.098
Pseudo R-squared				0.070				
Number of obs.				9022				

Notes:

1. Excluded Categories are: Cardiff, Face-to-face interview, Aged 45-54, Not Disabled, White, Degree, Full-time employment, Married, Owning with a Mortgage, Very good health, first (most deprived) WIMD quartile and urban.

2. Estimates are based on unweighted data.

Table A10. Probability (Marginal Effects) of Being in Each Worthwhile Category in Wales

	V. low Worthwhile		Low Worthwhile		Med. Worthwhile		High Worthwhile	
	M.E.	p-value	M.E.	p-value	M.E.	p-value	M.E.	p-value
Blaenau Gwent	0.009	0.238	0.022	0.206	0.009	0.078	-0.040	0.184
Bridgend	-0.004	0.518	-0.009	0.530	-0.005	0.565	0.018	0.539
Caerphilly	-0.006	0.271	-0.015	0.293	-0.009	0.358	0.030	0.309
Carmarthenshire	0.015	0.059	0.033	0.036	0.012	0.000	-0.060	0.025
Ceredigion	0.009	0.256	0.020	0.226	0.009	0.103	-0.038	0.205
Conwy	0.000	0.984	0.000	0.984	0.000	0.984	-0.001	0.984
Denbighshire	0.007	0.287	0.017	0.262	0.008	0.159	-0.032	0.244
Flintshire	-0.002	0.743	-0.005	0.746	-0.003	0.758	0.010	0.749
Gwynedd	0.003	0.632	0.007	0.624	0.004	0.593	-0.014	0.619
Isle of Anglesey	-0.002	0.693	-0.006	0.699	-0.004	0.716	0.012	0.703
Merthyr	0.003	0.694	0.006	0.688	0.003	0.665	-0.012	0.684
Monmouthshire	0.006	0.362	0.014	0.340	0.007	0.250	-0.027	0.325
Neath Port Talbot	0.012	0.096	0.028	0.069	0.011	0.004	-0.051	0.054
Newport	0.011	0.133	0.025	0.104	0.010	0.017	-0.046	0.087
Pembrokeshire	0.001	0.906	0.002	0.905	0.001	0.903	-0.003	0.905
Powys	-0.003	0.589	-0.008	0.598	-0.005	0.625	0.015	0.604
Rhondda Cynon Taff	0.011	0.141	0.024	0.112	0.010	0.022	-0.044	0.095
Swansea	0.008	0.223	0.019	0.196	0.008	0.094	-0.035	0.178
Torfaen	0.008	0.249	0.018	0.223	0.008	0.121	-0.034	0.206
Vale of Glamorgan	0.003	0.613	0.007	0.604	0.004	0.572	-0.014	0.598
Wrexham	-0.006	0.221	-0.017	0.247	-0.011	0.321	0.034	0.266
Telephone interview	-0.007	0.001	-0.016	0.001	-0.009	0.001	0.032	0.000
Female	-0.008	0.000	-0.020	0.000	-0.010	0.000	0.038	0.000
Aged 16-24	0.003	0.566	0.007	0.557	0.004	0.522	-0.014	0.550
Aged 25-34	-0.006	0.050	-0.016	0.059	-0.010	0.097	0.033	0.068
Aged 35-44	0.000	0.883	-0.001	0.883	-0.001	0.884	0.002	0.883
Aged 55-64	-0.011	0.000	-0.030	0.000	-0.020	0.000	0.061	0.000
Aged 65-74	-0.017	0.000	-0.047	0.000	-0.036	0.001	0.100	0.000
Aged 75 & over	-0.020	0.000	-0.056	0.000	-0.048	0.003	0.123	0.000
Nonwhite	0.002	0.771	0.005	0.768	0.003	0.754	-0.009	0.765
Disability	-0.001	0.653	-0.002	0.652	-0.001	0.651	0.004	0.652
No information on disability	-0.003	0.238	-0.008	0.244	-0.005	0.267	0.016	0.249
Welsh Identity	-0.004	0.278	-0.010	0.289	-0.006	0.324	0.020	0.297
Other higher education	0.001	0.754	0.003	0.752	0.002	0.745	-0.006	0.750
A-level or equivalent	0.005	0.166	0.012	0.154	0.006	0.116	-0.022	0.146
GCSE grades A*-C or equivalent	0.008	0.024	0.019	0.019	0.009	0.006	-0.036	0.015

Other qualifications	0.002	0.650	0.005	0.645	0.002	0.628	-0.009	0.642
No qualifications	-0.001	0.836	-0.002	0.837	-0.001	0.840	0.004	0.838
No information on qualifications	0.014	0.023	0.031	0.016	0.014	0.002	-0.059	0.012
Part-time employee	0.002	0.630	0.004	0.627	0.002	0.616	-0.007	0.625
Self-employment	-0.009	0.004	-0.024	0.007	-0.016	0.027	0.050	0.011
Unemployment	0.028	0.000	0.058	0.000	0.014	0.000	-0.100	0.000
Inactive – student	-0.005	0.552	-0.012	0.567	-0.007	0.611	0.023	0.579
Inactive – looking after family or home	-0.003	0.427	-0.008	0.438	-0.005	0.475	0.017	0.447
Inactive – short or long-term disabled	0.007	0.190	0.016	0.170	0.007	0.095	-0.030	0.155
Inactive – retired	-0.007	0.066	-0.018	0.072	-0.011	0.096	0.036	0.077
Inactive – other	-0.001	0.841	-0.003	0.842	-0.002	0.848	0.007	0.844
Single (never married)	0.018	0.000	0.041	0.000	0.017	0.000	-0.076	0.000
Divorced	0.020	0.000	0.044	0.000	0.016	0.000	-0.079	0.000
Widowed	0.025	0.000	0.053	0.000	0.016	0.000	-0.094	0.000
Owned outright	-0.004	0.173	-0.009	0.175	-0.005	0.184	0.017	0.177
Private landlord	0.006	0.115	0.013	0.103	0.006	0.062	-0.025	0.094
Social housing	0.004	0.208	0.011	0.196	0.005	0.155	-0.020	0.188
Other housing tenure	0.066	0.131	0.109	0.026	-0.006	0.838	-0.169	0.006
Good Health	0.026	0.000	0.060	0.000	0.026	0.000	-0.112	0.000
Fair Health	0.062	0.000	0.115	0.000	0.015	0.000	-0.192	0.000
Bad Health	0.150	0.000	0.182	0.000	-0.066	0.000	-0.266	0.000
Very Bad Health	0.237	0.000	0.204	0.000	-0.151	0.000	-0.290	0.000
No information on Health	0.065	0.000	0.111	0.000	0.000	0.963	-0.176	0.000
Second WIMD quartile	-0.003	0.261	-0.007	0.266	-0.004	0.286	0.015	0.270
Third WIMD quartile	-0.002	0.472	-0.005	0.475	-0.003	0.487	0.010	0.478
Fourth WIMD quartile	-0.001	0.641	-0.003	0.643	-0.002	0.650	0.007	0.645
Town and Fringe	-0.002	0.490	-0.004	0.494	-0.002	0.508	0.009	0.497
Village	-0.005	0.073	-0.013	0.081	-0.008	0.114	0.025	0.089
Hamlet	-0.001	0.858	-0.002	0.858	-0.001	0.860	0.003	0.859
Pseudo R-squared				0.050				
Number of obs.				9022				

Notes:

1. Excluded Categories are: Cardiff, Face-to-face interview, Aged 45-54, Not Disabled, White, Degree, Full-time employment, Married, Owning with a Mortgage, Very good health, first (most deprived) WIMD quartile and urban.

2. Estimates are based on unweighted data.

Table A11. Probability (Marginal Effects) of Being in Each Happiness Category in Wales

	V. low Happiness		Low Happiness		Med. Happiness		High Happiness	
	M.E.	p-value	M.E.	p-value	M.E.	p-value	M.E.	p-value
Blaenau Gwent	0.009	0.535	0.009	0.520	0.002	0.387	-0.020	0.516
Bridgend	-0.001	0.919	-0.001	0.920	0.000	0.922	0.003	0.920
Caerphilly	0.006	0.657	0.006	0.650	0.001	0.598	-0.013	0.648
Carmarthenshire	0.030	0.048	0.027	0.027	0.003	0.006	-0.060	0.024
Ceredigion	0.007	0.624	0.007	0.614	0.002	0.538	-0.016	0.612
Conwy	0.012	0.375	0.012	0.353	0.002	0.161	-0.026	0.347
Denbighshire	0.015	0.279	0.014	0.253	0.003	0.044	-0.032	0.246
Flintshire	-0.002	0.881	-0.002	0.882	-0.001	0.887	0.004	0.882
Gwynedd	0.011	0.413	0.011	0.393	0.002	0.216	-0.025	0.388
Isle of Anglesey	-0.011	0.362	-0.012	0.384	-0.004	0.473	0.028	0.390
Merthyr	-0.001	0.917	-0.001	0.917	0.000	0.920	0.003	0.918
Monmouthshire	0.008	0.530	0.008	0.517	0.002	0.408	-0.018	0.513
Neath Port Talbot	0.025	0.089	0.023	0.062	0.003	0.000	-0.051	0.057
Newport	0.006	0.633	0.006	0.624	0.001	0.562	-0.014	0.622
Pembrokeshire	0.003	0.816	0.003	0.814	0.001	0.801	-0.007	0.814
Powys	-0.005	0.680	-0.005	0.686	-0.002	0.714	0.012	0.688
Rhondda Cynon Taff	0.010	0.461	0.009	0.445	0.002	0.303	-0.021	0.440
Swansea	0.022	0.116	0.020	0.088	0.003	0.000	-0.045	0.082
Torfaen	0.042	0.007	0.036	0.002	0.002	0.420	-0.079	0.001
Vale of Glamorgan	0.003	0.824	0.003	0.822	0.001	0.810	-0.006	0.822
Wrexham	-0.008	0.530	-0.008	0.543	-0.003	0.597	0.018	0.546
Telephone interview	-0.013	0.001	-0.013	0.001	-0.004	0.001	0.030	0.001
Female	-0.009	0.029	-0.009	0.028	-0.002	0.027	0.020	0.028
Aged 16-24	-0.005	0.660	-0.005	0.665	-0.001	0.692	0.011	0.667
Aged 25-34	-0.007	0.335	-0.007	0.346	-0.002	0.400	0.017	0.349
Aged 35-44	0.008	0.265	0.008	0.253	0.002	0.179	-0.018	0.250
Aged 55-64	-0.019	0.001	-0.020	0.002	-0.007	0.014	0.045	0.003
Aged 65-74	-0.036	0.000	-0.041	0.000	-0.019	0.004	0.095	0.000
Aged 75 & over	-0.044	0.000	-0.052	0.000	-0.029	0.009	0.125	0.000
Nonwhite	-0.017	0.142	-0.019	0.173	-0.008	0.298	0.044	0.183
Disability	-0.001	0.840	-0.001	0.840	0.000	0.839	0.002	0.840
No information on disability	-0.001	0.822	-0.001	0.823	0.000	0.825	0.003	0.823
Welsh Identity	-0.006	0.493	-0.006	0.500	-0.002	0.534	0.013	0.502
Other higher education	-0.007	0.382	-0.007	0.393	-0.002	0.446	0.016	0.396
A-level or equivalent	-0.003	0.624	-0.003	0.628	-0.001	0.644	0.007	0.628
GCSE grades A*-C or equivalent	-0.006	0.373	-0.006	0.380	-0.002	0.419	0.013	0.382

Other qualifications	-0.016	0.035	-0.017	0.047	-0.007	0.119	0.040	0.051
No qualifications	-0.018	0.011	-0.020	0.017	-0.008	0.063	0.046	0.019
No information on qualifications	0.005	0.626	0.005	0.622	0.001	0.594	-0.012	0.620
Part-time employee	0.006	0.357	0.006	0.347	0.002	0.288	-0.014	0.345
Self-employment	-0.001	0.923	-0.001	0.923	0.000	0.924	0.002	0.923
Unemployment	0.021	0.074	0.019	0.054	0.003	0.000	-0.043	0.050
Inactive – student	0.004	0.823	0.004	0.820	0.001	0.799	-0.009	0.820
Inactive – looking after family or home	-0.008	0.389	-0.008	0.403	-0.003	0.467	0.018	0.407
Inactive – short or long-term disabled	-0.003	0.758	-0.003	0.760	-0.001	0.773	0.007	0.761
Inactive – retired	-0.028	0.000	-0.029	0.001	-0.011	0.006	0.068	0.001
Inactive – other	-0.013	0.290	-0.014	0.318	-0.005	0.425	0.033	0.327
Single (never married)	0.016	0.009	0.016	0.006	0.004	0.001	-0.035	0.006
Divorced	0.039	0.000	0.035	0.000	0.004	0.000	-0.077	0.000
Widowed	0.055	0.000	0.047	0.000	0.001	0.684	-0.102	0.000
Owned outright	-0.007	0.202	-0.007	0.205	-0.002	0.221	0.016	0.205
Private landlord	0.006	0.403	0.006	0.394	0.001	0.335	-0.013	0.392
Social housing	0.012	0.101	0.012	0.089	0.003	0.028	-0.026	0.086
Other housing tenure	0.082	0.196	0.060	0.070	-0.010	0.666	-0.132	0.069
Good Health	0.054	0.000	0.050	0.000	0.009	0.000	-0.113	0.000
Fair Health	0.119	0.000	0.088	0.000	-0.012	0.004	-0.196	0.000
Bad Health	0.261	0.000	0.114	0.000	-0.098	0.000	-0.277	0.000
Very Bad Health	0.335	0.000	0.104	0.000	-0.150	0.000	-0.289	0.000
No information on Health	0.100	0.000	0.072	0.000	-0.014	0.113	-0.158	0.000
Second WIMD quartile	-0.008	0.128	-0.009	0.135	-0.003	0.173	0.020	0.136
Third WIMD quartile	-0.012	0.041	-0.012	0.045	-0.004	0.077	0.029	0.047
Fourth WIMD quartile	-0.012	0.040	-0.013	0.046	-0.004	0.081	0.029	0.047
Town and Fringe	-0.008	0.111	-0.009	0.120	-0.003	0.167	0.020	0.122
Village	-0.002	0.790	-0.002	0.791	0.000	0.796	0.004	0.791
Hamlet	0.000	0.953	0.000	0.953	0.000	0.953	0.001	0.953
Pseudo R-squared				0.042				
Number of obs.				9022				

Notes:

1. Excluded Categories are: Cardiff, Face-to-face interview, Aged 45-54, Not Disabled, White, Degree, Full-time employment, Married, Owning with a Mortgage, Very good health, first (most deprived) WIMD quartile and urban.

2. Estimates are based on unweighted data.

Table A12. Probability (Marginal Effects) of Being in Each Anxiety Category in Wales

	Very High Anxiety		High Anxiety		Medium Anxiety		Low Anxiety	
	M.E.	p-value	M.E.	p-value	M.E.	p-value	M.E.	p-value
Other qualifications	-0.018	0.235	-0.006	0.261	0.000	0.909	0.024	0.249
No qualifications	-0.046	0.001	-0.017	0.003	-0.002	0.245	0.064	0.002
No information on qualifications	-0.059	0.080	-0.013	0.137	-0.004	0.425	0.076	0.094
Part-time employee	-0.037	0.158	-0.012	0.149	-0.001	0.582	0.049	0.146
Self-employed	-0.024	0.398	-0.007	0.806	0.000	0.943	0.028	0.395
Unemployment	0.046	0.046	0.011	0.030	-0.002	0.269	-0.056	0.039
Looking after home or family	-0.027	0.300	-0.008	0.360	-0.002	0.798	0.037	0.307
Student	-0.023	0.510	-0.007	0.509	-0.001	0.748	0.032	0.507
Inactive – looking after family or home	0.009	0.607	0.003	0.596	0.000	0.705	-0.012	0.601
Inactive – short or long-term disabled	0.022	0.251	0.006	0.218	-0.001	0.458	-0.027	0.235
Inactive – retired	-0.028	0.068	-0.009	0.079	0.000	0.725	0.037	0.074
Inactive – other	0.028	0.319	0.008	0.268	-0.001	0.534	-0.034	0.295
Single (never married)	-0.007	0.476	-0.002	0.483	0.000	0.366	0.010	0.480
Divorced	0.013	0.220	0.004	0.204	0.000	0.392	-0.017	0.212
Widowed	0.021	0.127	0.006	0.104	-0.001	0.323	-0.026	0.115
Owned outright	-0.024	0.015	-0.008	0.017	0.000	0.198	0.032	0.016
Private landlord	-0.001	0.957	0.000	0.957	0.000	0.956	0.001	0.957
Social housing	-0.003	0.839	-0.001	0.840	0.000	0.814	0.003	0.840
Other housing tenure	-0.015	0.827	-0.005	0.836	0.000	0.984	0.021	0.832
Good Health	0.081	0.000	0.023	0.000	-0.004	0.000	-0.100	0.000
Fair Health	0.156	0.000	0.034	0.000	-0.018	0.000	-0.172	0.000
Bad Health	0.261	0.000	0.028	0.000	-0.051	0.000	-0.238	0.000
Very Bad Health	0.421	0.000	-0.004	0.691	-0.109	0.000	-0.307	0.000
Telephone interview	-0.009	0.245	-0.003	0.244	0.000	0.321	0.011	0.244
No information on Health	0.148	0.000	0.028	0.000	-0.021	0.009	-0.155	0.000
Female	0.025	0.001	0.008	0.001	0.000	0.169	-0.032	0.001
Aged 16-24	-0.028	0.120	-0.010	0.155	0.000	0.647	0.039	0.139
Aged 25-34	-0.021	0.119	-0.007	0.141	0.000	0.871	0.028	0.131
Aged 35-44	-0.011	0.347	-0.004	0.362	0.000	0.472	0.015	0.353
Aged 55-64	-0.013	0.248	-0.004	0.262	0.000	0.412	0.018	0.255
Aged 65-74	-0.040	0.019	-0.014	0.032	-0.001	0.499	0.055	0.026
Aged 75 & over	-0.069	0.001	-0.027	0.006	-0.004	0.205	0.100	0.003
Nonwhite	-0.042	0.131	-0.011	0.074	-0.003	0.362	0.056	0.104
Disability	0.007	0.315	0.002	0.318	0.000	0.341	-0.010	0.316
No information on disability	0.017	0.115	0.005	0.103	-0.001	0.280	-0.022	0.109
Welsh Identity	0.011	0.496	0.003	0.485	0.000	0.611	-0.014	0.491
Other higher education	-0.029	0.032	-0.010	0.048	0.000	0.561	0.040	0.040
A-level or equivalent	-0.031	0.007	-0.011	0.013	0.000	0.581	0.042	0.010
GCSE grades A*-C or equivalent	-0.021	0.076	-0.007	0.091	0.000	0.949	0.028	0.083
Second WIMD quartile	-0.016	0.130	-0.005	0.119	0.000	0.389	0.021	0.124
Third WIMD quartile	-0.002	0.851	-0.001	0.851	0.000	0.860	0.003	0.851
Fourth WIMD quartile	-0.014	0.258	-0.004	0.242	0.000	0.403	0.017	0.247
Town and Fringe	-0.006	0.574	-0.002	0.579	0.000	0.456	0.007	0.576
Village	-0.003	0.803	-0.001	0.801	0.000	0.825	0.004	0.802
Hamlet	-0.008	0.544	-0.003	0.554	0.000	0.318	0.011	0.549
Pseudo R-squared	0.026							
Number of obs.	9022							

Notes:

1. Excluded Categories are: Cardiff, Face-to-face interview, Aged 45-54, Not Disabled, White, Degree, Full-time employment, Married, Owning with a Mortgage, Very good health, first (most deprived) WIMD quartile and urban.

2. Estimates are based on unweighted data.