

Well-being and disability – new evidence of inequality

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Abstract

Evidence on disability-related inequality has largely focused on employment and earnings and concludes that disabled people in the UK face some of the greatest employment disadvantages of any group (NEP 2010:117). From April 2012 a new subjective well-being (SWB) measure takes its place alongside the more traditional income-based ones as a measure of the nation's progress. Two things are noteworthy about the first publication of some broad SWB statistics: most people report high levels of SWB most of the time and there are typically minimal inter-group differences. This study is the first to consider inter-group differences in the new SWB indicators by disability. We argue that, for this group, SWB is an important additional indicator of inequality and as a prompt to ask what is it about disability that generates a large SWB gap? Is it disability or the social gradient associated with disability (see Marmot 2010)? How much of the SWB deficit is explained by above average non-employment? For those in work, how much is explained by low pay, poor quality jobs and over-education?

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1. Introduction

Understanding the relationship between disability and subjective well-being (SWB) provides an important additional perspective to evidence on disability equality which has primarily focused on employment and earnings. Disabled people in Britain are less likely to be employed than their non-disabled counterparts and earn less on average if they are. In their report *Anatomy of Economic Inequality in the UK* conducted on behalf of the Government Equalities Office, the National Equalities Panel (2010: 117) concluded that ‘disabled people face some of the greatest employment disadvantages of any group we examine’. Around 30 per cent of the working-age population recorded a long-standing illness or impairment in 2011 (Labour Force Survey (LFS)), including 20 per cent who report that this was activity-limiting either at work or in day-to-day living. We define the latter group (who are impaired and restricted) as disabled. The same survey records an employment gap of 29 per percentage points between those who are defined as disabled and those who are defined as not impaired. This employment gap is enduring as well as large. It is not substantially different in 2011 to that which was recorded in 1998.¹ Earnings gaps are also significant but are considered to be less important than those relating to employment (see for example, Longhi et al 2010).

A well-being agenda has emerged in the UK that ‘seeks to promote a politics of happiness’ (Edwards and Imrie 2008:337). This agenda has academic support. Richard Layard, the pioneer of the well-being agenda in the UK, argues that happiness should be the ultimate goal of life and that the main aim of social science is ‘to throw light on the conditions conducive to happiness and the ways in which those conditions can be produced’ (2011: 5). In October 2010, David Cameron announced that the Office for National Statistics (ONS) would begin a national programme of consultation (Measuring National Well-being Programme) on how well-being should be measured. Four subjective well-being (SWB) indicators, designed by Dolan, Layard and Metcalf (2011), were introduced into Integrated Household Survey (IHS) from April 2011 ($n=200,000$) covering evaluative, eudemonic and experiential approaches which, when measured on a 0-10 point scale, seek to capture what people think and feel about their life.

¹ There is disagreement over the recent (1998-date) trend in the disability employment gap. Minton et al (2012:2) using the GHS, claims that ‘the employment deficit associated with limiting long term illness has increased substantially over time’. Berthoud reports a similar upwards trend. Studies using the LFS record a decrease (by 10 percentage points (Black, 2008) and by 6 percentage points (Jones and Wass, 2011)).

Information on SWB provides a further, and potentially the more important, indicator of the disadvantage experienced by disabled people. Despite a large volume of literature on SWB, both in relation to work and generally, ‘very few studies have focused on individuals with disabilities’ (Uppal, 2006: 525). Moreover, those that have, have confined their analysis to comparisons within the disabled population (Uppal, 2006 and Mehnert et al 1990) or to studies of well-being at work (WBW) and particularly job satisfaction within the population of employees (Uppal, 2005 and Pagan and Malo, 2009). The availability of SWB across a large sample of UK households which is linked to the employment and education data collected in the Labour Force Survey (LFS) allows for a broader analysis which includes all disabled people looks beyond inequalities in the labour market as a source of SWB differentials to include for example the effects of social relationships, access to services and fear of crime.

Of the initial broad descriptive findings from the SWB surveys published by ONS (ONS 2011b (based on the Opinions Survey (OPN)) and ONS 2012 (based on APS)), two things are noteworthy:

(i) Most people appear to be happy most of the time. Around three-quarters rate their SWB at 7 or more out of 10 (on a scale of 0 to 10) (ONS Dec 2011:1).²

(ii) For the most part there are minimal inter-group differences in SWB. Focusing on the ‘overall satisfaction with life’ statement, the mean valuation for women is 7.4 and for men is 7.3. In terms of ethnicity, the mean score for White ethnic groups is 7.4, for Indian is 7.4, for Chinese is 7.3, for Bangladeshi is 7.1 and for Pakistani is 7.0. Lower levels are reported for those of Arab (6.8) and Black ethnicity (6.6). Inter-group means by Socio Economic Group (8 point N-SEC scale) range from 7.6 (Managerial and professional employees and small employers) to 7.3 (semi routine, routine worker and the non-employed). There is the expected middle-aged dip to 7.0 from the twin peaks of 7.8 for the 16-19s and the over 65s. A long-standing illness or impairment also reduces the score to 7.0. Those who are unemployed return an average score of 6.5. Disability is not distinguished in these early reports but the findings reported in this paper record a similar outcome to that associated with unemployment, an average score of 6.4. To place this in the context of the overall distribution of responses on the life satisfaction statement, the average for those reporting disability falls at the 27th percentile

² ONS 2012: 3 (28 February) Using the APS, for overall life satisfaction 75.5 per cent of respondents record 7 or above (average 7.4); for overall life worthwhile 79.5 per cent report 7 or above (average 7.6); for happiness yesterday 71.3 per cent report 7 or above (average 7.3). The median and mode are each 8 (ONS 2011b)

of the population distribution. The average for those reporting a disability and unemployment is 5.5 which falls around the 15th percentile.

This study is amongst the first of the analyses of the new SWB indicators and it is undertaken in relation to the group of people who are most heavily disadvantaged in terms of existing equality indicators. In doing so it asks what is it about disability that generates such a large SWB gap? Is it the direct medical effects of disability (pain, tiredness, poor health) or is it the indirect effects of living in an ablest world? To what extent does the gap reflect the social gradient associated with disability (see Marmot 2010)? How much of the disability-related SWB deficit is explained by the large employment gap? For the disabled in work, how much is explained by low pay, poor quality jobs and over-education?

The paper is organised as follows: the next section reviews the well-being agenda and its relationship with disability. In the following sections, we describe recent studies and measures of well-being and produce some stylized facts on the basis of our review. The subsequent section describes our empirical approach towards the determination of SWB, in particular in relation to the impact of disability on reported SWB, and is followed by a discussion of our findings. In order to distinguish between the medical impact of disability (pain, exhaustion etc) on SWB from the social impact (treatment and exclusion), we look beyond the SWB indicators reported in the APS to the wider set of well-being domains collected in the OPN survey. We conclude with a summary of the contribution of this paper and its implications for future work.

2. The well-being agenda and its relationship to disability

Well-being is a tricky subject for economists who prefer to measure ‘what people do’ rather than ‘what they think’ (Uppal 2006:255, Binmore 2007:4) and avoid making inter-personal comparisons across subjective measures (see Binmore 2007:2).³ However, over the course of the last 30 years, interest in the economics of happiness, as measured by articles in mainstream economic journals which have SWB as their focus, has burgeoned (see Dolan et al 2008:94). In the words of MacKerron (2012), ‘economics has re-discovered well-being’. This interest in well-being coincided with the first concerns about the social and economic consequences of a prevailing anti-enlightenment view of the world based upon individualism, competition and an

³ This is the foundation of both logical positivism and utilitarianism. ‘one man’s happiness will never be another man’s happiness: a gain to one man is no gain to another’ (Jeremy Bentham quoted in Binmore 2007:2)

absence of society or shared purpose. This was a period in which absolute economic growth was dwarfed by the growth in economic inequality. It also coincided with the availability of large scale social survey data that measured SWB and WBW (for example in the UK the BHPS from 1991). Until Easterlin 1974, it had been the accepted view in economics that a rising standard of living was synonymous with rising well-being. While a positive relationship between income and well-being is observed in cross section data, time series analyses of happiness indicated that, despite very large increases in living standards, measures of happiness had remained constant. This paradox is explained if it is relative rather than absolute income that is important; that is, if individuals make social comparisons with their own recent experience and with their neighbours. As living standards rise generally but differentially, the population is confined to a ‘hedonic treadmill’ (Layard 2005) of constantly pursuing the living standards of their peers. It was the apparent independence between growth in well-being and growth in GDP, that provided the impetus to look beyond economic growth to other factors which contribute to well-being.⁴ The new science of well-being was born. The purpose of this new science is to understand well-being as an objective entity and to provide an evidence-base of which factors and policy interventions are associated with positive responses and which with negative responses. In fact the literature associated with this science gives a fairly consistent picture of which factors have association with subjective well-being (see NEF 2012:1).⁵

This literature is a politics of well-being as much as it is a science. In 2008, President Sarkozy launched the Commission for the Measurement of Economic Performance and Social Progress (CEMEPSP) (the Stiglitz/Sen Commission) which reported in 2009. Two key findings were that subjective assessments of the quality of working life were important indicators of society’s well-being and that current measures, which did not include this, were inadequate as indicators of societal well-being. Central Statistical Offices around the world were obliged to respond. The Organisation for Economic Co-operation and Development (OECD) responded by adopting satisfaction with work as one of its headline measures of social well-being. The United Nations General Assembly responded with a declaration to use SWB measures as a guide to policy.

⁴ ‘We must acquire a life style which has as its goal maximum freedom and happiness for the individual, not a maximum Gross National Product (Nordhaus and Tobin 1973 quoting Paul Erlich).

⁵ Diener et al (1999) report a high degree of validity, reliability and consistency between different measures of well-being. See also Dolan et al (2008).

In the UK, Prime Minister David Cameron announced that the coalition Government was going to be concerned with ‘not just by how our economy is growing, but by how our lives are improving’ (November 2010) and that in support of this ONS would collect and publish information on SWB from April 2011 with a view to embedding the well-being impact in national and local policy design and evaluation.⁶ The Whitehall Well-being Working Group was tasked to define and conceptualise well-being and embed this within the concept of sustainability (see Dolan et al 2008). In a Treasury working paper, Fujiwara and Campbell (2011) recommend the inclusion of well-being policy evaluation in the influential Green Book. Well-being has been one of ESRC’s eight strategic research priorities since 2011. Layard (2011:5) sees happiness and well-being is becoming more and more central concepts in our culture and he describes the well-being movement as ‘unstoppable’.

It is hard to argue against the promotion of happiness. As Layard (2011:5) observes, ‘Happiness is the only good that is self evidently that, a good’. However, the well-being agenda, as conceived and implemented in UK government policy, has not been universally accepted as good. In the US some academics have likened the approach to happiness to Aldous Huxley’s novel *Brave New World*, in which citizens are brainwashed into considering themselves fortunate even when they are at the lowest level of a strict social and genetic hierarchy. For others the objections are more subtle. Furedi (2006) describes ‘happiness’ as a state of being that can be achieved through particular forms of idealised behaviour, beliefs and personality traits. The assumption is that happiness is a virtue to which we can all aspire and ultimately achieve (through the adoption of ideal characteristics and values). Moloney (2006) argues that the consequences of this well-being agenda is that it downplays the structural and material basis for SWB differentials, the social, economic and organisational barriers that some people face in participating in these ideal behaviours and emotions. In this way the happiness agenda can further stigmatise people in those groups which do not (and cannot) measure up to the ideal.

The path to happiness is seen to lie in good health, community inclusion, economic participation and social integration and the social, economic and medical problems which obscure this path are recast as personal so that failure to report happiness is located with the individual as personal and psychological rather than structural and social (Edwards and Imrie 2008:342). The point about the lives of disabled people in relation to material disadvantage and

⁶ In all areas of national policy -economy, social relationships, community, health, local environment, education and care (see NEF 2011 for examples) and locally under the Local Government Act 2000.

structured inequalities is obscured as the ‘individual self and their happiness becomes the focus for government interventions’ Edwards and Imrie (2008:341). Where certain groups do not match up the average, those who report mental health problems for example, they are targeted for government intervention, intervention which has focused on the personal and aspirational, revolving around psychological development, counselling, mentoring and confidence building. The individual is enjoined to manage their own conditions. It ignores the social and structural disadvantages of disability in favour of character development. For Edwards and Imrie (2008:341), the happiness agenda, in which people are expected to take responsibility for their own happiness, is part of the continued process towards Beck and Beck-Gernsheim’s, (2002) ‘disembedded individualisation’ where individuals’ life courses become increasingly disconnected from their social structure, collective and community ties and identities.

The social model of disability seeks to politicise disability with its focus on social and structural relations and processes that undermine equality of opportunity for disabled people. Edwards and Imrie (2008) argue that the UK well-being agenda shifts focus in the opposite direction, in the words of Sointu (2006:) ‘from the body politic to the body personal’. This is detrimental to disabled individuals because it is founded upon idealised behaviour, behaviour which ignores the effects of impairment, and seeks to manage disabled people through strategies and governance which focus on individual adaptation, personal responsibility and self care and not on the economic, social and organisational relations which do so much to disable those with impairments.

In this paper the focus is on the disability-induced gap in SWB which is taken to reflect the combined impact of medical, social and economic disadvantage which attach to disability. We try to unpick the complicated relationships which drive this inequality in well-being. In the following sections we outline the meaning and measure of well-being and the consistent findings from the literature on inter-group differences in the form of a set of stylised facts.

3. The study and measurement of well-being

Well-being is multidimensional and intangible and there is no single universal accepted definition or measure. In the literature it is measured objectively, cardinally and indirectly through economic, social and environmental statistics (Easterly 1999) and subjectively through self-reported happiness and satisfaction, both overall and in relation to specific domains.

McGillivray and Clarke (2006:4) define SWB as a ‘multidimensional evaluation of life including cognitive judgements of life satisfaction and affective evaluations of emotions and moods’. Economists have used SWB and happiness inter-changeably (Easterlin 2005 and Layard 2005, 2007). From behavioural science, three approaches are identified, the Evaluative, the Eudemonic and the Experiential and the questions on SWB asked in the IHS (and included in the APS) cover each approach. These questions are listed below:

I would like to ask you four questions about your feelings on aspects of your life. There are no right or wrong answers. For each of these questions I’d like you to give an answer on a scale of 0 to 10⁷ where nought is ‘not at all’ and 10 is ‘completely’.

1. *Overall, how satisfied are you with your life nowadays?*
2. *Overall, to what extent do you feel the things you do in your life are worthwhile?*
3. *Overall, how happy did you feel yesterday?*

A fourth question asks ‘*Overall, how anxious did you feel yesterday?*’ This question is, like question 3, based on the experiential approach but anxiety is not the opposite of happiness it is conceptually different and this question is not analysed in this paper.

The first question uses an evaluative approach that asks respondents to reflect on their life and make an overall cognitive assessment (Veenhoven 1991). It is based on Cantril’s ladder of life question (self anchoring scale) but without explicitly articulating the metaphor. The second question uses a eudemonic approach drawing on self-determination theory and measures respondents’ sense of meaning and purpose and the extent to which they gain self-worth from the things in their life. It has its foundation in psychology. The third question is based on an experiential approach and seeks to measure respondents’ positive experiences over a specific and short timeframe.

In addition to the global (life as a whole) indicators included in the APS, SWB in relation to different domains of life were collected in the OPN on an experimental basis between April and September 2011.⁸ Domains are distinguished by intrinsic (personal) and extrinsic (external

⁷ Pudney and Jackle (2012) argue that SWB is better measured on a 7 point scale.

⁸ The OPN is a monthly omnibus survey designed to provide up to date and reliable information on topical issues and/or new research areas.

environmental, economic, social) factors. Unfortunately disability is measured differently in each survey but the more detailed domain differences in SBW in the OPN are explored.

Although not separately measured in APS, WBW is considered a strong predictor of overall individual well-being (Diaz-Serrano and Cabral Vieira, 2005). Easterlin (2005) and Layard (2005) both identified job satisfaction as one of the most important determinants of an individual's happiness. The link between work and happiness is readily embraced by the Prime Minister, 'We have an instinct that having the purpose of a job is as important to the soul as it is to the bank balance' (25/11/2010). The same idea underlies the Black Review (2008: 53) which provides the Government's blueprint for improving the health and well-being of the working-age population and which advocates that employers should go beyond compliance with Health & Safety and Employment Law and extend their agenda to promote employee health and well-being. There is a clear assumption that work is beneficial to health and well-being even though the DWP's own research indicates that this is conditional on working in a 'good job' (Waddell and Burton, 2006).

Work-based surveys were the first to collect SWB information and most studies look at WBW through job satisfaction, for example, the civil service-wide staff survey, The People Survey, the Chartered Institute of Personnel and Development (CIPD) surveys and Workplace Employment Relations Survey (WERS). As with SWB, responses to WBW questions suggest that most British workers are 'satisfied' or 'very satisfied' with their jobs. In their metastudies, Judge and Wantanbe (1993, 1994) and Spector (1997) reported high correlations (around 0.6) between job and life satisfaction. The spillover model proposes that satisfaction in one area of one's life spills over or generalizes to another.⁹ The problem of measures of WBW in the context of disability is that most disabled people of working age are ignored as a consequence of not being in work.

Of course, limitations are imposed by the use of questionnaire based methods including evidence of framing effects (see ONS 2011b, Pudney and Jackle 2012). Questionnaires only capture cognitive (evaluative) aspects of subjective well-being – failing to capture affective (emotional), and behavioural components. Cross section surveys fail to capture the effects of adaptation and coping. Set point theory suggests that most people have an innate level of

⁹ Alternative models propose that the relationship between the two variables is negative so that individuals who are dissatisfied with one area will compensate by gaining satisfaction in another area. The segmentation model assumes that the two variables are unrelated.

satisfaction that they eventually return to after changes in circumstances. Using longitudinal data, Oswald and Prowdthavee (2007) report incomplete adaptation to the onset of disability. It is important to recognise that the presence and combination of self-reporting, unobserved personality factors and simultaneity generate potential for over-stating the impact of disability on SWB. Psychological (personality) characteristics, personal values and genetic make-up are not collected but may all affect SWB. To the extent that they are also related to disability, they bias the effects of disability measured in our analyses. There is also potential bias arising from simultaneity, particularly that low reported SWB may generate poor health, particularly psychological ill health.

Notwithstanding these objections, SWB appears to be capturing something, there are very many references in the literature to the reliability and consistency of SWB measures over time and across populations (Deiner et al 1999 and Dolan et al 2008).

4. Some stylized facts from the literature

SWB is conceptualised in terms of experienced utility, an outcome understood through correlation with social and economic factors analysed through regression techniques in which SWB is the dependent variable. We consider here those that we can control for in this study, that is the personal and employment related characteristics collected in the APS.

Studies of SWB consistently pick up the following inter-groups differences:

1. There is a U-shaped relationship between SBW and age with lowest recorded life satisfaction typically occurring between 32 and 55 years (depending on study) (Clark 2003, Ferrer-i-Carbonell and Gowdy 2007, Dolan et al 2008). A parabola describes age affects across countries and across indicators (Blanchflower and Oswald 2008, Plug and Van Praag 1995).
2. Gender differences are small (Louis and Zhao 2002) especially when measured for particular subsets of the population. Women tend to report a greater range of outcomes (Clark and Oswald 1994) and, in terms of WBW, women tend to report greater job satisfaction than men (Van Praag and Ferrer-i-Carbonell 2010).

3. The white population in the USA report higher life satisfaction scores although this weakens over the life course (Blanchflower and Oswald 2011). Interpretation of white, non-white differentials are difficult because of inter-group differences within the non-white population. To our knowledge there are no studies which investigate ethnic differentials in SWB for the UK or Europe (although ONS provide descriptive statistics for the UK).
4. Unemployment is consistently, strongly and negatively correlated with SWB measures. Di Tella et al (2001) report a 5-15 percent lower average life satisfaction score for the unemployed compared to their employed counterparts. SWB effects are greater for unemployed middle-class men (Andersen 2006). Selection effects, where unhappy people select into unemployment, appear to be minimal (Winkleman and Winkleman, 1998 and Lucas et al. 2004). The unemployment effects on SWB are greater for men, especially middle-aged men and for those from high income countries (Lucas et al 2004, Clark and Oswald 1994 and Fahey and Smyth 2004).
5. The effects of marriage are quite clear. In their review of well-being effects, Dolan et al (2008) conclude that 'stable, secure intimate relationships are beneficial for well-being and the dissolution of relationships is damaging'. Studies for the USA (Blanchflower and Oswald, 2004 and 2011, Graham, 2009, and Di Tella et al, 2003) report that unemployment and marriage breakdown have the largest (negative) effects on SWB.
6. The presence of children affect different domains of SWB differently and the impact on life satisfaction appears to reflect the increased emotional and financial demands on the one hand and at a more cognitive level is associated with greater feeling of purpose and worth on the other. For single parents, poor parents and for parents of sick or disabled children, the likelihood that the presence of children reduces reported SWB. Dolan et al (2008) note that the impact of children may also depend on broader social and cultural factors, with more negative effects reported in the US and UK than in Europe and Russia (p.107).¹⁰

¹⁰ The APS under our current end-user licence does not include information on type of condition, children or earnings. We are in the process of applying for the Special License version which will allow us to control for the effects of pay and the number and age of own children.

7. At the cross section level, income is an important determinant of SWB and shows positive but diminishing returns (Clark et al 2007). Not inconsistent with a zero relationship over time (difference between absolute and relative). As with health, there is likely to be some upward bias due to endogeneity and the effects of unobservables.
8. Many studies (both national and cross national) have found a positive effect from education. Blanchflower and Oswald (2011) estimate that, controlling for income and health, each additional year of education adds 0.017 happiness points (on a scale of 1 to 3).
9. Given the strong link between SWB and WBW, then hours of work and measures of job quality and type of work are likely to be important factors in SWB. Given the autonomy and ownership of the means of production that accompanies self-employment, higher levels of reported job satisfaction compared with the employed are no surprise (Clark 2010) or that this result is largely confined to those on high self-employed earnings (Alesina et al 2004). Casual work is associated with lower reported SWB as is job insecurity (Blanchflower and Oswald 2011). The relationship between hours of work and reported SWB is generally inverse u-shaped but is complicated by different preferences over the life-cycle. There are no part-time/full-time effects (Bardasi and Francesconi 2004).

5. Health and Disability

Conceptually there is an important difference between health and disability. Health is biological at its source and with medical intervention as its most common response. Disability is social as well as biological and includes recognition of the social and cultural contexts which give rise to limitations at work and in day-to-day activities which define disability. Health can be of short duration whereas disability assumes a long-lasting condition. In practice, ill-health/poor health, impairment and disability are often and incorrectly used interchangeably. The APS includes questions which allow us to approach a distinction so that disability is defined as ill-health or impairment which is long-lasting and is restricting of activities. Respondents are asked to rate their general health separately from questions about the presence

of a long-term illness or impairment.¹¹ There is a considerable overlap in the reporting of health, impairment and disability in the APS and a Spearman Correlation coefficient of 0.62 is recorded. However, it is still the case that 75 per cent of those who report disability (and must by definition report impairment) do not consider themselves to be unwell (in bad or very bad health). Here we compare the disability-related SWB gap between those who report good health and those who report bad health.

The influence of health has received greater attention in the literature on well-being than has disability. Health was the most commonly reported factor in the ONS public consultation on the determinants of well-being (Beaumont and Thomas 2012:1) and studies consistently show a strong negative relationship between health and reported SWB. Clark and Oswald (2002) using the UK BHPS report that ‘excellent health’ records the largest coefficient in their well-being equation. Given the potential bias arising from simultaneity, and the effects of unobservables noted above, it is important to note that studies using fixed effects models and those looking at specific conditions such as heart attacks and stroke (Shields and Wheatly Price, 2005) continue to find a strong health impact on SWB. There is some evidence of a disability effect in addition to an ill health effect, although care is needed because most studies use the terms interchangeably. Celiker and Borman (2001) and Evers et al (1997) both report an additional deficit in SWB which arises where a health state compromises an individual’s ability to function in day-to-day activities. In this study we separate the effects of general ill-health from those of disability by measuring the disability SWB gaps separately for different reported health inputs.

6. Data and method

This paper uses data from the Annual Population Survey (APS) from April-September 2011. The four well-being questions are asked to those aged 16 and above but not to individuals who respond by proxy (roughly 80,000 individuals). We restrict the analysis to the working age population (roughly 55,000) because of our interest in the combined effects of disability and

¹¹ *How is your health in general; would you say it was... (1) very good, (2) good, (3) fair, (4) bad, (5) very bad?*

employment status on SWB. Inactivity for those above statutory retirement age has a very different influence on SWB than for those who are not.

Our SWB indicators, namely life satisfaction, worth and happiness yesterday are based on the responses to the questions introduced in Section 3. We present some descriptive statistics in relation to SWB outcomes measured across the entire scale from 0 to 10 which are weighted using weights designed for the SWB sample. In the regression analysis which follows eleven SWB categories are aggregated into four groups namely very low (0-4) low (5-6), medium (7-8) and high (9-10) (see ONS 2012 for details) and we report unweighted marginal effects for impairment (unrestricted) and disability. 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.

The analysis distinguishes between impairment and disability. The disability categories are (non impaired), long-standing ill-health/impairment which is not work- or ADL-restricting (impaired unrestricted) and long standing ill-health/impairment which is work- or ADL-restricting (disabled). The purpose of this classification is to capture the sensitivity of SWB to the restrictions imposed by impairment. Ill-health/impairment identifies reduced functional capability arising from a long-lasting illness or condition.¹² Functional limitations consequent on ill-health or impairment are defined as a disability if they *either* adversely affect activities of day-to-day living (as defined in the DDA 1995) *or* the amount or the type of work that might be undertaken.¹³ Disability captures the mismatch between an individual's reduced capabilities and the level of capability that is required/expected to function independently at home or at work. Disability is the more complex characteristic: it captures elements of the medical (functional impairment) and social model (mismatch and expectations).

We measure the well-being gap as the raw differences in the SWB indicators between the three disability groups (non-impaired, ill/impaired (not restricted) and disabled). These gaps can arise as a result of differences in the composition of the disability groups in terms of personal

¹² *Do you have any health problems or disabilities that you expect will last for more than a year?*

¹³ *Does this health problem affect the kind of paid work that you might do? Or the amount of paid work that you might do? Does this (do these) health problem(s) or disability(ies)(when taken singly or together) substantially limit your ability to carry out normal day to day activities?*

characteristics which may be associated with both reported SWB and disability. Given the large differences in employment rates between disability groups and the large reduction in reported SWB associated with unemployment reported in the literature, we estimate a SWB gap which controls for disability and employment status together. We define the disability-related SWB penalty as the difference which remains after also controlling for the effects of other characteristics and circumstances, that is educational achievement, age, marital status, ethnicity, housing tenure and sex. We use a multivariate analysis to control for these and ultimately to measure the independent effect of disability status on reported SWB.

The unobserved latent variable reflecting SWB, for the i th individual is given by SWB_i^* and depends on a set of personal, social, economic and environmental factors as follows:

$$SWB_i^* = \alpha D_i + \gamma E_i + \beta X_i + \varepsilon_i \quad (1)$$

The observed variable SWB_i is related to the latent variable SWB_i^* as follows:

$$P_{ij} = \begin{cases} 1 & \text{if } P_{ij}^* \leq c_1 \\ 2 & \text{if } c_1 < SWB_i^* \leq c_2 \\ 3 & \text{if } c_2 < SWB_i^* \leq c_3 \\ 4 & \text{if } c_3 < SWB_i^* \end{cases}$$

where the values of the cut off points are assumed to $c_1 < c_2 < c_3 < c_4$ and 1 refers to *very low* and 4 to *high*. Dummy variables capture impairment and disability (D_i) and the effect of disability status on perceptions is therefore given by α . Dummy variables capture employment status (E_i) and distinguish employment from unemployment and inactivity. The set of personal characteristics (X_i) include controls for age, sex, marital status, highest qualification, ethnicity, housing tenure and region. Full definitions of all variables and their means are provided in Appendix Table 1.

Since SWB indicators are bounded and ranked, with increasing value with agreement with each question, the appropriate model is an ordered probit. This allows for differences in characteristics between individuals reporting high, as well as the low and very low, levels of SWB to be examined. The first specification measures the disability-related SWB gap. It includes controls for the month and mode of interview (face-to-face versus telephone

interview) and whether the individual was from the Quarterly LFS or annual Local LFS sample. In the second specification these controls are enhanced with controls for employment status, more specifically distinguishing between employment, unemployment and inactivity. The full range of personal characteristics are included within the third specification from which we drive the disability-related SWB penalty.

The estimates for the ordered probit models relate to the probabilities of being in each SWB category relative to a particular reference category. Table A2 (Appendix) reports the coefficient estimates and t-statistics for the final, most comprehensive, specification. For the coefficients on impaired-unrestricted and disabled, we calculate the actual probability, as a marginal effect calculated at the sample means, of being in each SWB group. This can be interpreted as a percentage point differential if the marginal effect is multiplied by 100. These are reported in Tables 1 and 2. Compared to a threshold binary probit, 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 focus on the impact of disability on the SWB indicator (SWB gap) and the impact of including other covariates (comparison with the penalty).

We are also interested in the disability-related gaps and penalties for those in employment and in an additional specification we confine our sample to employees.¹⁴ In addition to the controls mentioned above we include a set of employment-related characteristics such as hourly pay, industry, occupation, tenure, firm-size, part-time and temporary employment and a measure of over-education. Table A3 (Appendix) reports the coefficient estimates and t-statistics for this specification.

7. Disability and SWB

In Figure 1, we report SWB outcomes by the three disability categories. Bar charts in Panel 1 record the full (disaggregated) distribution for life satisfaction, in Panel 2 for things in life are worthwhile and in Panel 3 for happiness yesterday.

[Figure 1 here]

¹⁴ The results are, however, similar, if individuals in self-employment are included in the model, although the list of controls changes slightly as a consequence.

Figure 1 panel 1 displays the distribution of reported life satisfaction by disability status. The median and modal scores are 8 for both the non-disabled groups. The mean scores are 7.56 (non-impaired) and 7.38 (impaired – not restricted). The median score is 7 for the disabled group (the mean is 6.41). A higher proportion of those who report disability report lower scores on life satisfaction. The important factor is not the impairment per se but the restrictive nature of the impairment. A relatively small reduction in the SWB average is associated with a large movement down the distribution. Similar patterns are revealed in panels 2 and 3 with a greater proportion of those reporting disability also reporting the lower categories on the worthwhile and happiness SWB indicators.

Recall from the introduction that employment status generates a similar reduction in the mean SWB score and of course employment is a key area in which the disabled are disadvantaged (see Longhi et al 2010 and Jones and Wass 2011 and a 29 percentage point employment gap in the APS).¹⁵ Employment status is defined as employed, unemployment (ILO definition) and inactive. In Figure 2 we combine the effects of disability and employment status and measure the raw gaps in the means for each SWB indicator.

[Figure 2 here]

In Figure 2, the reference category is an employed non-impaired respondent. The average life satisfaction score for this group is 7.63, things are worthwhile is 7.80 and happiness yesterday is 7.45. Life satisfaction shows the greatest variation with an almost 2 point fall (26 percent) associated with simultaneously reporting unemployment and disability. The life satisfaction gap associated with unemployment for the non-impaired is 0.9 and 1.2 for the impaired-unrestricted. Inactivity is a little less life satisfaction-reducing than is unemployment for the disabled. Disability combined with non-employment is associated with the biggest SWB gaps on each indicator. For those who report inactivity, there is a particularly large SWB gap associated with disability compared to both impairment and non-impairment. Each SWB indicator is greater for the non-impaired and inactive than for the reference group (for non-impaired inactivity is likely to be a choice (retirement or child care) but for the disabled it is likely to be a consequence of the restriction). The life satisfaction gap associated with being disabled and employed is 0.7. Mostly responses are consistent across the measures. The gap associated with multiple disadvantage appears to be cumulative (rather than additive) such that

¹⁵ This is a smaller gap than is recorded in Jones and Wass 2011 which uses a stricter definition of disability as impaired/ill and both ADL and work limited.

disability for the employed (0.7) is broadly the same as unemployment for the non-disabled (0.9) but disability and unemployment together is greater than the sum of the parts at 1.9.

8. Disability-related gaps and penalties

The first ordered probit specification measures the disability-related SWB gap. It includes controls for reference month, mode of interview and LFS sample. Employment status is added in the second specification where the reference category is inactivity. Employment reduces the probability of scoring very low or low on the LS score and raises the probability of a high and particularly a very high score. Personal characteristics are added in the third specification.

The gender dummy is significant and women are less likely to report SWB in the lower categories. Age displays its usual u-shaped relationship with respect to SWB. White individuals report higher SWB than their non-white counterparts. Specification 3 also includes education, marital status and housing tenure. The probability of reporting low SWB is significantly higher for those with qualifications below degree level (reference category). Relative to being married all groups experience a higher probability of reporting low SWB categories and the lowest well-being is typically reported by those who are widowed. 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 categories. In contrast, those who live in private- or social-rented housing are more likely to report low SWB categories. The coefficient estimates from the ordered probits for each of the three SWB indicators are reported in the Appendix. They are all consistent with the stylized facts reported earlier.

Here we are interested in the impact of the covariates on the impairment and disability gaps. Table 1 summaries the differences in probability of reporting each of the four ordered SWB outcomes (life satisfaction, worthwhile and happiness yesterday) for impairment (unrestricted) and disability compared to the status of no impairment. The SWB gap (first column, Table 1) is the percentage difference in the probability of reporting SWB in each of the four aggregated bands between those who are impaired and unrestricted and those who are disabled compared and those who are not impaired. It ignores the effects of employment and the social gradient. The SWB employment-adjusted gap (second column) measures the difference in SWB which arises from a ‘disability’ effect after the removal of the effects of differential chances of employment. The SWB penalty (third column) measures the difference in SWB which arises

from a 'disability' effect after the removal of the influence of employment status and the social gradient. The SWB penalty compares SWB outcomes by disability status for otherwise similar individuals. It measures that part of the SWB gap which is not explained by differences in personal characteristics and employment outcomes and which therefore arises from real or perceived differences in treatment, experience, or differences in other unmeasured individual characteristics.

[Table 1 here]

The gap is significant for both the impaired unrestricted and disabled groups although it is far larger for the latter. Controlling for employment (column 2) reduces the gap for the disabled but not for the impaired unrestricted. This indicates an employment gap amongst the former but not the latter. Controlling for employment and the social gradient reduces the disability gap further across the distribution but the gap between the impaired unrestricted and the non-impaired is robust to the inclusion of the additional controls. Importantly large disability-induced gaps in well-being remain after controlling for employment and for social and personal characteristics. In fact, only a minority of the gap is closed. In terms of disability and life satisfaction, the percentage reduction between column (1) and column (3) is 30% (very low), 14% (low), 27% (medium) and 20% (high) so that well over 2/3rd of the SWB gap is not accounted for by employment status or differences in measured characteristics.

In Table 2 we restrict our sample to employees and estimate the disability-related SWB gaps for employees where we are able to control for features of employment. The disability/impairment gaps are smaller for employees relative to the working age population which is consistent with the effects of employment reported in Table 1. The inclusion of controls narrows the gap but only slightly indicating that inequality in terms of pay and occupation for those who are disabled contributes only a small amount to the SWB gap. For the impaired unrestricted groups, the gap does not narrow and in some instances widens. As for the working age population sample, substantial differences remain after accounting for a comprehensive set of work-related controls. Of course one factor that we cannot control for is differential treatment at work which is not related to our included variables. In two surveys of employee's experience at work, the British Workplace Behaviour Survey (2008) and the Fair Treatment at Work Survey (2007), larger percentages of employees with a disability reported being affected by negative behaviour at work (EHRC 2008: 2). The remaining SWB gap may

also reflect factors external to work that we have not controlled for (for example social relationships etc).

[Table 2 here]

The focus on work may be misleading if this is just one dimension through which inequality operates. In Table 3 we look to wider set of SWB indicators including social relationships, access to services and trust in society's institutions to see if the disabled SWB is universal across domains and measures. This also provides an opportunity to distinguish between biological and social effects, between intrinsic and extrinsic factors and between work and non-work activities. The OPN survey uses the broad evaluative, eudemonic and experiential classification but asks questions about specific well-being domains within each classification. For example, within the experiential approach, respondents are asked about the extent to which they experienced different emotional states (joy, contentment, stress, anger etc) yesterday. We provide an initial exploration of these estimating raw gaps measured at the mean SBW score. The sample size is around 800 with around 18 per cent reporting a long lasting limiting impairment.¹⁶ It is interesting that the domain averages within the experiential classification are all lower than the global experiential measure. The disability-related gaps are also greater for the experiential domains with gaps in all domains exceeding 1 SWB point, with the exception of contentment. Of particular note are the large gaps relating to pain, tiredness, energy, stress, worry, excitement, optimism and loneliness. In terms of satisfaction, SBW gaps are greatest in relation to physical and mental health, work and financial situation. Equality across some of the measures indicates that the disabled group are not more pessimistic about everything. In terms of external factors, local and national, SWB gaps are much lower and for satisfaction with the local area, public transport, the state pension and living in this country and trust in the police, disabled people report higher scores.

[Table 3 here]

¹⁶ The questions and definitions relating to disability differ in the OPN from the APS. All individuals are asked *Have you any long-standing illness, disability or infirmity?* Those who answer positively, which we refer to as the impaired, are then asked: *Does this illness /disability limit any of your activities?* We define the disabled as those who answer positively to both questions (they are impaired and restricted). The unrestricted impaired group answer positively to the first but not to the second question.

9. Discussion and conclusions

There is an active well-being agenda in the UK. Political interest post-dates academic interest by at around 15 years. As part of this agenda ONS collect and publish detailed and high quality information on SWB. As well as providing an aggregate measure for publication alongside aggregate income, inter-group differences in SWB provides a measure of inequality. We see differences in well-being as primarily reflecting different opportunities and outcomes in relation to participation in the activities which generate well-being. In terms of labour market outcomes, the disabled are one of the most disadvantaged groups. The same is true when the outcome is SWB.

This latter indicator has a number of advantages over exclusively work-based measures. It includes the experience of those who are out of work (a group who are ignored in the WBW literature). Furthermore, SWB takes into account a far broader range of well-being domains which disability may influence, not only health and work but social relationships, access to services, fear for safety, areas neglected in the literature on inequality and disability. One advantage we have not explored here (but which is relevant) is that SWB remains a valid measure of inequality of those after retirement. Inequality measures associated with the labour market completely neglect this group but this group is substantial in number and disability is more prevalent with age. What we seem to find is that work is important (as is the nature of work) but that this is only a small part of the picture.

From the range of domains, it is clear that large negative gaps for the disabled are not universal. This undermines the argument that more pessimistic people are more likely to report both disability and low scores on the SWB indicators. It is not the case that the disabled are more unhappy and less satisfied in all well-being domains. Large gaps are recorded in relation to living with pain and living with restriction but not in respect of more objective and external domains such as satisfaction with the police, local public transport, the health service, the state pension, and overall satisfaction with their local area and living in this country.

The recent political interest in well-being is not necessarily benign. It has been used to justify welfare-to-work programmes and to individualising responsibility for the management of one's health, care and participation. For disabled people, claims to justice and rights in the realm of social and structural relations are where progress has historically come from. A well-being agenda which emphasises self-help is a retreat from this. Well-being is an important societal aim, even if it may not be the ultimate one, and may need some careful definition and

qualification. In this paper we use the information generated as part of the well-being agenda to signal where the inequalities in well-being lie and, in relation disability, what characteristics and activities are associated with well-being and how (and why) they are differently distributed for the disabled. Very large gaps in reported SWB are interpreted as a reflection of structured inequality in the workplace and in society and as a measure of the unhappiness these inequalities generate.

Although, the SWB indicators have the advantages of being high quality, collected over large samples and not being restricted to workers, or the working-age population, they are cross-section data and the absence of a longitudinal element means that we cannot use panel data methods, such as fixed effects regressions, to control for unobserved heterogeneity. Neither can we identify the onset of disability and adjustment over time. Instead we focus on a stock of individuals who will have different disability trajectories (some long-term others temporary).

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Table 1 Impairment and disability SWB gaps and penalties

		Gap	Gap - employment corrected	Penalty
<i>Life satisfaction</i>				
Very low	Impairment - unrestricted	1.35	1.37	1.22
	Disability	9.37	8.53	6.54
Low	Impairment - unrestricted	1.85	1.95	1.95
	Disability	10.52	10.11	9.06
Medium	Impairment - unrestricted	-0.38	-0.41	-0.40
	Disability	-4.71	-4.33	-3.43
High	Impairment - unrestricted	-2.82	-2.92	-2.76
	Disability	-15.17	-14.31	-12.17
<i>N</i>		54,329	54,329	54,111
<i>Worthwhile</i>				
Very low	Impairment - unrestricted	0.38	0.40	0.46
	Disability	4.86	4.20	3.34
Low	Impairment - unrestricted	0.72	0.78	0.96
	Disability	7.93	7.24	6.38
Medium	Impairment - unrestricted	0.21	0.22	0.27
	Disability	0.56	0.68	0.82
High	Impairment - unrestricted	-1.30	-1.39	-1.70
	Disability	-13.35	-12.11	-10.54
<i>N</i>		54,163	54,163	53,949
<i>Happy yesterday</i>				
Very low	Impairment - unrestricted	1.65	1.68	1.90
	Disability	8.92	8.53	7.51
Low	Impairment - unrestricted	1.27	1.30	1.52
	Disability	5.99	5.82	5.43
Medium	Impairment - unrestricted	-0.12	-0.12	-0.16
	Disability	-1.65	-1.54	-1.30
High	Impairment - unrestricted	-2.81	-2.86	-3.25
	Disability	-13.27	-12.80	-11.64
<i>N</i>		54,309	54,309	54,094

Notes: Figures refer to marginal effects relating to impairment – unrestricted and disability (relative to non-impairment) estimated from an ordered probit model. Column (1) also includes controls for month of interview, interview mode and LFS sample. Column (2) further includes controls for employment and unemployment. Column (3) supplements this with controls for age, ethnicity, marital status, highest qualification, housing tenure and region of residence. A full set of coefficients relating to column 3 are presented in Appendix Table A2.

Table 2 Impairment and disability SWB gaps and penalties – in work only

		Gap	Penalty
<i>Life Satisfaction</i>			
Very low	Impairment - unrestricted	1.16	0.97
	Disability	4.46	3.60
Low	Impairment - unrestricted	2.27	2.15
	Disability	7.63	7.09
Medium	Impairment - unrestricted	0.00	0.06
	Disability	-1.42	-1.07
High	Impairment - unrestricted	-3.45	-3.17
	Disability	-10.67	-9.62
<i>N</i>		38,685	38,374
<i>Worthwhile</i>			
Very low	Impairment - unrestricted	0.25	0.31
	Disability	1.57	1.42
Low	Impairment - unrestricted	0.73	1.03
	Disability	4.30	4.35
Medium	Impairment - unrestricted	0.39	0.56
	Disability	1.58	1.69
High	Impairment - unrestricted	-1.37	-1.90
	Disability	-7.45	-7.46
<i>N</i>		38,606	38,297
<i>Happy Yesterday</i>			
Very low	Impairment - unrestricted	1.76	1.85
	Disability	4.98	4.81
Low	Impairment - unrestricted	1.70	1.83
	Disability	4.41	4.40
Medium	Impairment - unrestricted	0.03	0.02
	Disability	-0.47	-0.45
High	Impairment - unrestricted	-3.48	-3.70
	Disability	-8.91	-8.76
<i>N</i>		38,681	38,373

Notes: Figures refer to marginal effects relating to impairment – unrestricted and disability (relative to non-impairment) estimated from an ordered probit model. Column (1) also includes controls for month of interview, interview mode and LFS sample. Column (2) supplements this with controls for personal characteristics namely age, ethnicity, marital status, highest qualification, housing tenure and region of residence and employment related characteristics (occupation, industry, part-time, self-employment and tenure). Coefficients are presented for column 2 in Appendix Table A3)

Table 2 Impairment and disability SWB gaps and penalties – employees only

		Gap	Penalty
<i>Life Satisfaction</i>			
Very low	Impairment - unrestricted	1.15	0.92
	Disability	4.30	3.20
Low	Impairment - unrestricted	2.38	2.27
	Disability	7.74	7.06
Medium	Impairment - unrestricted	0.03	0.07
	Disability	-1.41	-0.96
High	Impairment - unrestricted	-3.56	-3.26
	Disability	-10.62	-9.30
<i>N</i>		33,596	29,289
<i>Worthwhile</i>			
Very low	Impairment - unrestricted	0.25	0.37
	Disability	1.58	1.42
Low	Impairment - unrestricted	0.78	1.30
	Disability	4.43	4.57
Medium	Impairment - unrestricted	0.40	0.66
	Disability	1.53	1.65
High	Impairment - unrestricted	-1.43	-2.34
	Disability	-7.54	-7.64
<i>N</i>		33,526	29,240
<i>Happy Yesterday</i>			
Very low	Impairment - unrestricted	1.90	2.04
	Disability	5.06	4.67
Low	Impairment - unrestricted	1.86	2.06
	Disability	4.54	4.39
Medium	Impairment - unrestricted	-0.01	-0.02
	Disability	-0.57	-0.49
High	Impairment - unrestricted	-3.76	-4.09
	Disability	-9.03	-8.56
<i>N</i>		33,592	29,288

Notes: Figures refer to marginal effects relating to impairment – unrestricted and disability (relative to non-impairment) estimated from an ordered probit model. Column (1) also includes controls for month of interview, interview mode and LFS sample. Column (1) supplements this with controls for personal characteristics namely age, ethnicity, marital status, highest qualification, housing tenure and region of residence and employment related characteristics (hourly pay, temporary contract, part-time, occupation, industry, firm size and tenure). A full set of coefficients relating to column (2) are presented in Appendix Table A3.

Table 3 Additional well-being questions asked in OPN 2011

	Non-impaired	Impaired restricted	Difference in SWB scores	% difference
<i>Evaluative/Eudemonic</i>				
Overall how satisfied are you with your.....				
Personal relationships	8.19	7.54	0.65	7.94
Physical health	7.93	4.17	3.76	47.41
Mental health	8.52	5.99	2.53	29.69
Work situation	6.70	4.49	2.21	32.99
Financial situation	6.09	4.56	1.53	25.12
Area live in	7.81	7.02	0.79	10.12
Time to do things	6.38	5.86	0.52	8.15
Children's wellbeing	8.79	8.29	0.50	5.69
Amount of time to do things you like doing	7.58	6.24	1.34	17.68
How lonely do you feel	2.64	3.93	-1.29	-48.86
Opportunity to show capability	7.11	5.87	1.24	17.44
Extent you have sense direction	7.35	5.80	1.55	21.09
How positive do you feel about yourself	7.71	6.29	1.42	18.42
How important to you to learn new things	8.09	7.28	0.81	10.01
Extent get on with people around you	8.39	7.96	0.43	5.13
Extent play a useful role in the world	7.23	6.36	0.87	12.03
Extent people treat you with respect	7.34	6.75	0.59	8.04
Extent feel appreciated by people you know	7.62	7.23	0.39	5.12
How optimistic fell about future	7.49	5.71	1.78	23.77
Extent fell sense of accomplishment	7.49	6.37	1.12	14.95
Level of resilience after setbacks	7.04	5.75	1.29	18.32
Extent feel that learn new things	6.86	6.04	0.82	11.95
Extent fell able to deal with problems in life	7.64	6.49	1.15	15.05
<i>Experiential/external</i>				
How contented did you feel yesterday	7.04	6.05	0.99	14.06
How calm did you feel yesterday	6.76	5.62	1.14	16.86
How relaxed did you feel yesterday	6.40	5.06	1.34	20.94
How peaceful did you feel yesterday	6.24	5.02	1.22	19.55
How much enjoyment did you experience yesterday	6.33	5.04	1.29	20.38
How joyful did you feel yesterday	6.25	4.80	1.45	23.20
How energised did you feel yesterday	5.72	4.21	1.51	26.40
How excited did you feel yesterday	5.07	3.84	1.23	24.26
How tired did you feel yesterday	4.04	6.02	-1.98	-49.01
How stressed did you feel yesterday	3.38	5.05	-1.67	-49.41

How worried did you feel yesterday	2.89	4.40	-1.51	-52.25
How bored did you feel yesterday	2.33	3.63	-1.30	-55.79
How much pain did you experience yesterday	1.62	4.99	-3.37	-208.02
How angry did you feel yesterday	2.00	3.07	-1.07	-53.50
How lonely did you feel yesterday	1.59	2.89	-1.30	-81.76
Extent most people can be trusted	5.63	5.22	0.41	7.28
Anyone to discuss personal matters with	8.02	7.02	1.00	12.47
Friends, relatives, neighbours to ask for help	8.40	7.47	0.93	11.07
Local area satisfaction	7.34	7.48	-0.14	-1.91
Local area involvement	3.86	3.54	0.32	8.29
Local area belonging	6.29	5.86	0.43	6.84
Local area cohesion	6.54	6.17	0.37	5.66
Feel can influence local decisions	3.56	3.06	0.50	14.04
Fell local people pull together	5.04	4.84	0.20	3.97
Satisfaction with local green spaces	6.82	6.54	0.28	4.11
How safe alone at night	6.71	5.19	1.52	22.65
How rate quality public health service (in this country)	6.88	6.70	0.18	2.62
How rate quality state education (in this country)	6.53	6.12	0.41	6.28
How rate quality public transport (in this country)	5.99	6.00	-0.01	-0.17
How rate quality state child care (in this country)	5.73	5.22	0.51	8.90
How rate quality elder care (in this country)	5.46	5.06	0.40	7.33
How rate state pension	4.57	4.62	-0.05	-1.09
How much trust in legal system (in this country)	5.87	5.43	0.44	7.50
How much trust in police (in this country)	6.65	6.65	0.00	0.00
How much trust in media (in this country)	3.49	3.21	0.28	8.02
How much trust in political system (in this country)	4.03	3.71	0.32	7.94
Extent feel informed current affairs affect this country	5.91	5.27	0.64	10.83
Satisfaction with living in this country	7.09	7.44	-0.35	-4.94

Notes: OPN April, July, August and September 2011. The overall working age sample is about 800 per month. This typically comprises of about 600 non-impaired individual

Appendix

Table A1 Sample Means and Proportions

	Non-impaired	Variable Mean Impaired	Disabled
<i>SWB</i>			
Life Satisfaction	7.55	7.39	6.46
Worthwhile	7.79	7.73	7.01
Happy yesterday	7.43	7.26	6.47
<i>Employment Status</i>			
Employed	0.79	0.80	0.47
Unemployed	0.06	0.06	0.07
Economically Inactive (omitted)	0.15	0.14	0.47
<i>Gender</i>			
Female	0.55	0.51	0.53
<i>Age</i>			
16-19 (omitted)	0.03	0.02	0.01
20-24	0.08	0.05	0.03
25-29	0.11	0.06	0.05
30-34	0.13	0.08	0.06
35-39	0.13	0.09	0.09
40-44	0.14	0.12	0.12
45-49	0.13	0.15	0.15
50-54	0.12	0.15	0.17
55-59	0.09	0.17	0.20
60-64	0.04	0.10	0.12
<i>Highest qualification</i>			
Degree (omitted)	0.28	0.26	0.14
Other Higher Education	0.11	0.11	0.10
A level	0.23	0.24	0.20
O level	0.23	0.23	0.24
Other	0.09	0.09	0.12
None	0.07	0.07	0.20
<i>Ethnicity</i>			
White	0.89	0.93	0.93
<i>Marital Status</i>			
Single	0.37	0.28	0.29
Married (omitted)	0.48	0.54	0.45
Divorced	0.13	0.16	0.22
Widowed	0.01	0.02	0.03
<i>Housing Tenure</i>			
Owned outright	0.17	0.24	0.21
Bought mortgage/loan (omitted)	0.50	0.49	0.33
Private landlord	0.21	0.15	0.15
Social housing	0.13	0.12	0.31
<i>Children</i>			
Dependent child in household			
No dependent child in household			
<i>Self-reported health</i>			
Very good	0.54	0.23	0.07
Good	0.40	0.56	0.28
Fair	0.06	0.20	0.39
Bad/Very Bad	0.00	0.01	0.26
<i>Employees</i>			
Temporary employment	0.05	0.05	0.06
Part-time	0.27	0.25	0.33
Hourly pay	11.28	11.37	10.60
Overeducated	0.17	0.15	0.14
Matched	0.72	0.73	0.72

Undereducated	0.12	0.12	0.14
<i>Industry</i>			
Agriculture & fishing (omitted)	0.00	0.00	0.00
Energy & water	0.02	0.02	0.02
Manufacturing	0.11	0.10	0.10
Construction	0.05	0.05	0.04
Distribution, hotels & restaurants	0.18	0.15	0.18
Transport & communication	0.08	0.08	0.07
Banking, finance & insurance	0.15	0.14	0.13
Public administration, education & health	0.37	0.41	0.42
Other services	0.04	0.04	0.04
<i>Occupation</i>			
Managers and senior officials (omitted)	0.09	0.09	0.08
Professional occupations	0.22	0.23	0.18
Associate professional and technical	0.14	0.14	0.12
Administrative and secretarial	0.13	0.13	0.15
Skilled trades occupations	0.07	0.07	0.07
Personal service occupations	0.10	0.10	0.12
Sales and customer service occupation	0.08	0.08	0.10
Process, plant and machine operatives	0.06	0.06	0.06
Elementary occupations	0.11	0.10	0.13
<i>Tenure</i>			
Less than 3 months	0.04	0.03	0.03
Between 3 and 6 months	0.03	0.02	0.03
Between 6 and 12 months	0.07	0.05	0.05
Between 1 and 2 years	0.10	0.08	0.08
Between 2 and 5 years	0.23	0.22	0.20
Between 5 and 10 years	0.21	0.20	0.21
Between 10 and 20 years	0.20	0.23	0.23
More than 20 years	0.12	0.17	0.16
<i>Firm Size</i>			
Less than 25 employees	0.32	0.33	0.34
Between 25-50 employees	0.14	0.15	0.13
Between 50-500 employees	0.35	0.34	0.34
More than 500 employees	0.19	0.19	0.19

Notes: All figures represent unweighted means and are based on the working age population who report life satisfaction.

Table A2. Coefficients from SWB ordered probit models – working age population - full specification

	Life Satisfaction	Worthwhile	Happy yesterday
Age 20-24	-0.344*** (9.52)	-0.175*** (4.88)	-0.201*** (5.65)
Age 25-29	-0.450*** (12.87)	-0.183*** (5.25)	-0.293*** (8.51)
Age 30-34	-0.568*** (16.27)	-0.250*** (7.22)	-0.322*** (9.37)
Age 35-39	-0.621*** (17.75)	-0.256*** (7.37)	-0.314*** (9.12)
Age 40-44	-0.713*** (20.50)	-0.286*** (8.27)	-0.356*** (10.42)
Age 45-49	-0.774*** (22.12)	-0.353*** (10.16)	-0.401*** (11.68)
Age 50-54	-0.767*** (21.63)	-0.335*** (9.51)	-0.374*** (10.72)
Age 50-59	-0.691*** (19.24)	-0.261*** (7.33)	-0.313*** (8.85)
Age 60-64	-0.503*** (12.91)	-0.125*** (3.22)	-0.143*** (3.73)
White	0.109*** (6.36)	0.068*** (3.97)	-0.004 (0.21)
Other higher education	-0.024 (1.35)	-0.021 (1.19)	0.001 (0.05)
A level	-0.064*** (4.51)	-0.077*** (5.37)	-0.011 (0.78)
O level	-0.072*** (5.03)	-0.115*** (7.99)	-0.020 (1.43)
Other	-0.041** (2.19)	-0.135*** (7.20)	0.011 (0.58)
None	-0.058*** (3.00)	-0.216*** (11.06)	-0.045** (2.35)
Single	-0.307*** (24.22)	-0.247*** (19.43)	-0.207*** (16.57)
Divorced	-0.382*** (26.91)	-0.243*** (16.98)	-0.233*** (16.61)
Widowed	-0.605*** (16.46)	-0.356*** (9.59)	-0.398*** (10.86)
Owned outright	0.164*** (11.55)	0.080*** (5.62)	0.094*** (6.72)
Private landlord	-0.093*** (6.46)	-0.058*** (4.04)	-0.042*** (2.97)
Social housing	-0.161*** (10.51)	-0.110*** (7.14)	-0.127*** (8.38)
Employed	0.136*** (10.32)	0.119*** (8.99)	0.057*** (4.34)
Unemployed	-0.343*** (15.93)	-0.244*** (11.29)	-0.120*** (5.58)
Impaired	-0.097*** (6.26)	-0.050*** (3.21)	-0.097*** (6.29)
Disabled	-0.460*** (37.00)	-0.328*** (26.32)	-0.359*** (29.20)
<i>N</i>	54,111	53,949	54,094

Cut1	-2.273	-2.061	-1.786
Cut2	-1.389	-1.173	-1.087
Cut3	0.073	0.254	-0.011

Notes: t statistics are presented in parenthesis and *, **, *** indicate significance at the 1, 5 and 10% level respectively. Controls for region, interview, month and sample included.