SIMETRICA Jacobs

Methodology Note for Wellbeing Values

08 May 2025

HACT Social Value Bank Refresh

Document Title: Methodology Note for Wellbeing Values
Date: 08 May 2025
Client Name: HACT

Simetrica-Jacobs Limited

Shepherds Building
Charecroft Way
Hammersmith
London
W14 0EE
United Kingdom
T +44 (0) 0203 883 9249
www.simetrica-jacobs.com

Contents

1. Introduction

The HACT Social Value Bank (SVB) provides social value estimates for almost 100 outcomes across 11 different outcome categories. These include Employment, Local Environment, Health, Financial Inclusion, Youth, Social Groups & Hobbies, Physical Activity, Homelessness, Maintenance of the Household, Maintenance of the Local Area, and Environment.

Since the HACT SVB was first published in 2014, there have been a number of advancements and changes which may have an impact on the values associated with the outcomes:

- Significant progress has been made in the wellbeing literature, with the development of a more robust understanding of exactly what factors need to be accounted for when estimating effects on wellbeing. This influences the choice of control variables that are included in our estimations.

- Research on the monetisation of wellbeing impacts has progressed, with HM Treasury now recommending the use of "wellbeing adjusted life years" (WELLBYs). A WELLBY corresponds to the monetised value of a one-point change in life satisfaction (on a scale of 0 to 10), per person per year. This incorporates research that further refines our understanding of the causal impact on income on wellbeing (see Fujiwara and Dass, 2021).

- More generally, a lot of progress has been made in terms of methodological approaches which are adopted in the literature and widely accepted as best-practice in terms of estimating causal effects empirically. In the case of certain outcomes, these allow for the better estimation of their associated impacts, particularly in cases where it may be difficult to isolate certain impacts.

- The available data has changed in many cases, including both data having been updated over time as more recent survey responses have been collected, as well as the discontinuation of certain datasets and the emergence of other newly available data.

- In some cases, there may be structural changes in the outcomes, which result in the fundamental nature of an outcome having altered since the initial estimation.

This update to the SVB aims to incorporate the above developments, in order to ensure that the values included are as methodologically robust and up to date as is feasible at present given the current methodological practices and data available.

The rest of this note first outlines the broad approaches adopted across the HACT wellbeing values, before setting out specific estimation details on an outcome-by-outcome basis.

2. Methodology

The core approach adopted in the value bank is to use regression analysis to estimate the relationships between subjective wellbeing and the various outcome variables included in the value bank. Broadly speaking, this is the same approach that was adopted in the initial HACT SVB. Whilst this is the approach implemented across most outcomes, there are some exceptions in which this is not the case – this is explicitly detailed for the relevant outcomes below in Section 3.

2.1 Wellbeing estimations

In the core wellbeing estimations, we use multivariate ordinary least squares (OLS) regression analysis to estimate the relationship between the outcomes of interest and subjective wellbeing. We also control for other potential confounding variables in these relationships. In general, we estimate the following model:

$$SWB_i = \alpha + \beta_1 Outcome_i + \beta_2 X_i + \varepsilon_i \quad (1)$$

SWB_i denotes the subjective wellbeing of individual i. Across the different datasets used in the analysis, this is a measure of overall life satisfaction – life satisfaction questions are commonly found in national surveys such as Understanding Society or the English Housing Survey data, where respondents must give an answer on either a scale of 0-10 or 1-7. In either case, the appropriate adjustments have been made in the analysis to ensure consistency in the interpretation of the scales across the entire value bank estimations.

$Outcome_i$ denotes the outcome of interest for individual i. This is often a dummy or categorical variable – the exact specifications for each outcome estimation are detailed in Section 3.

$\boldsymbol{X}_i$ is a vector of control variables which are broadly taken from the most recent robust wellbeing analysis and literature. Across all estimations, the control variables included remain the same as much as possible to ensure consistency throughout the value bank. However, where there are slight deviations from these standard controls, this is explicitly detailed in Section 3 for each relevant outcome.

The standard control variables adopted in this value bank are as follows:

- Log equivalised household income – the logarithmic transformation allows for diminishing returns of income on wellbeing – that is, it allows for those with lower incomes to experience a greater wellbeing benefit for a given increase in income, as compared to those with higher incomes.
- Age
- Age squared
- Gender
- Marital status
- Education level
- Employment status
- Whether an individual lives in an urban or rural area
- Mental health – as captured through the SF-12 measure. This is included in the linear, quadratic and cubic forms, to accurately capture the shape of the data.
- Physical health – as captured through the SF-12 measure. This is included in the linear, quadratic and cubic forms, to accurately capture the shape of the data.

- Number of children
- Religion
- Whether an individual is a carer
- Government Office Region
- Ownership of accommodation
- Ethnicity
- Time of year that the interview took place
- Survey wave

Generally, the coefficient β_1 is the key result from this part of our analysis which can be used to produce monetary values for each outcome, as detailed in Section 2.2.

2.2 Wellbeing valuation approach

In order to estimate the monetary equivalent of the impacts of the outcomes on individuals, we use the wellbeing valuation method. This approach relies on measuring the change in wellbeing from the outcome to be valued and converting this change into monetary terms. This methodology is fully endorsed in several best-practice guidance, including the HM Treasury Green Book[1] and the OECD's guidance on wellbeing[2]. More specifically, the WELLBY approach to monetisation is adopted. A WELLBY, or a wellbeing adjusted life year, is the monetised value of a one-point change in life satisfaction (on a scale of 0 to 10), per person per year. This represents the latest development in wellbeing valuation methodology and is in line with the UK's HM Treasury Green Book recommendations[3] The UK uses a WELLBY value of £13,000. This is the average value of a lower-bound and an upper-bound estimate; these are based on the relationship between health and life satisfaction and income and life satisfaction, respectively. By multiplying the WELLBY with estimates of β_1 from Equation (1), the monetised wellbeing value for the corresponding outcome is calculated.

2.3 Health top-up values

Throughout the core wellbeing analysis outlined in Section 2.1 above, we estimate the relationship between outcomes of interest and subjective wellbeing whilst controlling for key other explanatory factors – notably health, alongside further characteristics such as income, age and gender. The results obtained in this way represent only the direct impact of each outcome on wellbeing, *holding everything else – including health – constant*.

However, for many of the outcomes it is not plausible to consider impacts on wellbeing in isolation from impacts on health, as both are likely to be affected simultaneously. Where this is the case, the outcomes may additionally have an indirect impact on subjective wellbeing, via the channel of improvements in health. We capture these indirect wellbeing impacts in the form of health top-up values, designed so that they can be added together with the direct wellbeing values estimated through the core analysis.

The health top-up values are estimated in two stages: first deriving the direct impact of health on subjective wellbeing, and second linking the outcome of interest to improvements in health.

[1] HM Treasury (2022).

[2] OECD (2013).

[3] HM Treasury (2021).

Stage I: relationship between health and subjective wellbeing

There is an intricate relationship between health and subjective wellbeing which complicates the estimation process of this association – concerns include the impact of unobserved differences between individuals on both health and wellbeing, simultaneous changes in health and wellbeing in response to unobserved factors, as well as the likely delayed effect of past health on both current health and current wellbeing levels.

In order to address these concerns, we specify a model that makes use of the panel structure of the available datasets (whereby responses are collected from the same individuals repeatedly over time):

$$SWB_{it} = \alpha \mathrm{SWB}_{i,t-1} + \gamma_1 \mathrm{Health}_{it}^{Physical} + \gamma_2 \mathrm{Health}_{it}^{Mental} + \delta X_{it} + (\upsilon_i + \varepsilon_{it}) \quad (2)$$

This model departs from the one specified earlier in Equation (1) in two key respects: it accounts for the unobserved heterogeneity between individuals (υ_i) and captures the dynamic character of the relationship between health and subjective wellbeing through the inclusion of past subjective wellbeing ($\mathrm{SWB}_{i,t-1}$) as a control variable. The remaining control variables included in X_{it} are analogous to those used in Equation (1), adapted where necessary to ensure sufficient level of variation over time.

Equation (2) is estimated using "system" Generalised Method of Moments (GMM) dynamic panel approach, as developed by Arellano and Bover (1995)[4] and applied in the context of subjective wellbeing by Piper (2022)[5]. This estimation method addresses the heterogeneity of individuals, as in static fixed effects panel models, but with the additional strength of dealing with the endogeneity of dependent variables through a set of internal instruments based on past levels and differences in the endogenous variables. This last feature makes the system GMM approach particularly helpful in the context of Equation (2) where no readily available instruments have been identified for the three variables affected by endogeneity (physical and mental health, as well as past level of subjective wellbeing).

The key output of this first-stage estimation are the coefficients γ_1 and γ_2 capturing the contribution of a one-point increase in the relevant SF-12 health measure to an individual's contemporaneous subjective wellbeing[6].

Stage II: relationship between respective outcomes and health.

The following equations are estimated for each outcome:

$$Health_i^{Physical} = \alpha + \beta_1 Outcome_i + \beta_2 Health_i^{Mental} + \beta_3 X_i + \varepsilon_i \quad (3)$$

$$Health_i^{Mental} = \alpha + \beta_1 Outcome_i + \beta_2 Health_i^{Physical} + \beta_3 X_i + \varepsilon_i \quad (4)$$

[4] Arellano and Bover (1995).

[5] Piper (2022).

[6] In order to ensure that the results capture strictly the same-period impact of health on wellbeing, the estimation included additional lagged terms for subjective wellbeing and health (t-1, t-2 and t-3) on the right-hand side of Equation (2). None of these additional terms was found to be statistically significantly different from zero.

As above, $\boldsymbol{X}_i$ is a vector of control variables which are broadly consistent with those in the core wellbeing estimations. The physical and mental health controls again include the linear, quadratic and cubic forms, to accurately capture the shape of the data.

We then combine the β_1 coefficients from Equations (3)-(4) with the relevant health coefficients γ estimated in Stage I, to obtain the corresponding impact of the outcomes on wellbeing via the health channel. Finally, adopting the same wellbeing valuation approach as outlined in Section 2.2, we convert these indirect wellbeing impacts into monetary equivalents.

Note that for outcomes recorded in datasets where the SF-12 measures of health are not available, Equations (3) and (4) cannot be estimated directly. Where this is the case, we apply instead a two-step procedure which first links the outcome of interest to a subjective measure of general health using the following equation:

$$General\ Health_i = \alpha + \beta_0 Outcome_i + \beta_2 X_i + \varepsilon_i \quad (5)$$

We then combine the results with the γ coefficient estimated from Equation (6) below. This is identical to Equation (2), with the exception that the objective SF-12 health measures have been replaced with the same subjective general health measure as in Equation (5).

$$SWB_{it} = \alpha \mathrm{SWB}_{i,t-1} + \gamma General\ Health_{it} + \delta X_{it} + (\upsilon_i + \varepsilon_{it}) \quad (6)$$

Given that these health top-up values capture the indirect effects of each outcome on wellbeing via the health channel, whereas Equation (1) estimates only the direct effects, these values can be combined to create a total wellbeing value, without any double-counting.

It should be noted that whilst the above approach was estimated for all outcomes, there are some outcomes for which there is no corresponding health top-up value.

3. Outcome-specific estimations

3.1 Employment

3.1.1 Full-time employment

This outcome captures the value of moving from unemployment to full-time employment.

The key variable of interest in this estimation is a categorical variable detailing whether an individual is in full-time employment, part-time employment, or unemployed. This same estimation is also used to obtain the relevant coefficient for the part-time employment outcome. In this estimation, full-time employment is defined as those working more than 30 hours per week and part-time employment refers to those working 30 hours or less.

Given that this analysis requires the differentiation between full-time and part-time employment, the variable of interest used is separate from the employment status control variable used throughout the value bank analysis. Due to the strong overlap between the two variables, employment status is not included as a control in this estimation.

Since the previous estimation, it should be noted that there has been a fundamental shift in the nature of the labour market. The relationship between employment and wellbeing is likely to have changed over time with, for example, the growth in popularity of zero-hour contracts. As a result of an increase in volatility of the employment market, there may be an intrinsically lower impact of employment on wellbeing. In addition to the improvements in the estimation techniques adopted, this shift is likely represented by the change in magnitude of the wellbeing value of employment.

3.1.2 Self-employment

This outcome captures the value of moving from unemployment to self-time employment.

The key variable of interest in this estimation is a categorical variable detailing the current labour force status of an individual. This includes whether an individual is in paid employment, self-employed, retired, on maternity leave, taking care of family, a full-time student, long-term sick or disabled, on a government training scheme, doing unpaid family business, on an apprenticeship, doing something else or unemployed. This same estimation is also used to obtain the relevant coefficients for the government training scheme and apprenticeship outcomes.

Note, that the variable of interest in this estimation is the same as the employment status included in the standard control variables.

Since the previous estimation, it should be noted that there has been a fundamental shift in the nature of the labour market. The relationship between employment and wellbeing is likely to have changed over time with, for example, the growth in popularity of zero-hour contracts. As a result of an increase in volatility of the employment market, there may be an intrinsically lower impact of employment on wellbeing. In addition to the improvements in the estimation techniques adopted, this shift is likely represented by the change in magnitude of the wellbeing value of employment.

3.1.3 Part-time employment

This outcome captures the value of moving from unemployment to part-time employment.

The key variable of interest in this estimation is a categorical variable detailing whether an individual is in full-time employment, part-time employment, or unemployed. This same estimation is also used to obtain the relevant coefficient for the full-time employment outcome. In this estimation, full-time employment is defined as those working more than 30 hours per week and part-time employment refers to those working 30 hours or less.

Given that this analysis requires the differentiation between full-time and part-time employment, the variable of interest used is separate from the employment status control variable used throughout the value bank analysis. Due to the strong overlap between the two variables, the employment status is not included as a control in this estimation.

3.1.4 Government training scheme

This outcome captures the value of moving from unemployment to completing a government training scheme. However, there is no corresponding wellbeing value for this outcome – the analysis indicates that the impact of government training schemes on an individual's wellbeing is not statistically different from zero. It is included here for completeness of the analysis conducted.

The key variable of interest in this estimation is a categorical variable detailing the current labour force status of an individual. This includes whether an individual is in paid employment, self-employed, retired, on maternity leave, taking care of family, a full-time student, long-term sick or disabled, on a government training scheme, doing unpaid family business, on an apprenticeship, doing something else or unemployed. This same estimation is also used to obtain the relevant coefficients for the self-employment and apprenticeship outcomes.

Note, that the variable of interest in this estimation is the same as the employment status included in the standard control variables.

3.1.5 Secure job

This outcome captures the value of having a secure job, which is unlikely to be lost in the next 12 months.

The key variable of interest uses a survey question from Understanding Society, where respondents must answer the following question:

I would like you to think about your employment prospects over the next 12 months. Thinking about losing your job by being sacked, laid-off, made redundant or not having your contract renewed, how likely do you think it is that you will lose your job during the next 12 months? Is it...

1) *Very likely*
2) *Likely*
3) *Unlikely*
4) *Very unlikely*

This outcome assigns value to respondents reporting "unlikely" or "very unlikely" to this question.

Note, that there is a slight change in the way that this outcome is captured, as compared to the previous version. This is due to the current available data being part of the Understanding Society survey, whereas previously the British Household Panel Survey (BHPS) was used (which has been discontinued). The previous BHPS data allowed for an analysis of an individual's satisfaction with job security, with respondents answering on a 1-7 satisfaction scale.

This slight change in nature of the outcome may explain the discrepancy between the previous and currently estimated values. In order for the outcome in the value bank to align with the variables used in this estimation, this outcome question has been reworded slightly to reflect the Understanding Society survey question used.

3.1.6 Apprenticeship

This outcome captures the value of currently being enrolled in an apprenticeship, as compared to those that are unemployed.

The key variable of interest in this estimation is a categorical variable detailing the current labour force status of an individual. This includes whether an individual is in paid employment, self-employed, retired, on maternity leave, taking care of family, a full-time student, long-term sick or disabled, on a government training scheme, doing unpaid family business, on an apprenticeship, doing something else or unemployed. This same estimation is also used to obtain the relevant coefficients for the government training scheme and self-employment outcomes.

Note, that the variable of interest in this estimation is the same as the employment status included in the standard control variables.

Previously this outcome was calculated as a simple addition of the vocational training and part-time employment outcomes, rather than using the general regression approach. This was due to restrictions in the data which resulted in a regression approach capturing only the lifetime value of an apprenticeship qualification, rather than that of currently being enrolled in an apprenticeship. Given the available Understanding Society data, it is now possible to capture the value of currently being enrolled in an apprenticeship through the standard wellbeing regression approach. This allows us to align the estimation approach with the majority of other values in the value bank.

3.1.7 Vocational training

This outcome captures the value of achieving a vocational qualification in the past 12 months, compared to having not (including those having achieved other qualifications as well as those with no training or qualifications at all). However, there is no corresponding wellbeing value for this outcome – the analysis indicates that the impact of vocational training on an individual's wellbeing is not statistically different from zero. It is included here for completeness of the analysis conducted.

The key variable of interest in this estimation is a dummy variable detailing whether or not an individual has completed any form of vocational training in the past 12 months. As specified in the Understanding Society survey, this includes completing a youth training certificate, key skills, basic skills, entry level qualification (Wales), a modern/trade apprenticeship, RSA/OCR/Clerical and commercial qualifications, City and Guilds Certificate, GNVQ/GSVQ, NVQ/SVQ, HNC/HND, ONC/OND, BTEC/BEC/TEC/EdExcel/LQL, SCOTVEC/SCOTEC/SCOTBEC, First Aid or other Health and Safety Certificates, and other vocational qualifications.

3.1.8 Regular volunteering

This outcome captures the value of volunteering at least once per month over the past 12 months, compared to those that volunteer less than once a month, or those that do not volunteer at all.

In order to reflect the Understanding Society variable used in the analysis, the HACT question has been reworded slightly – previously the outcome was worded as "Volunteers at least once per month for at least two months".

3.1.9 Job-related training (provided by employer)

As a result of the available data, the differentiation between general training and employment training is now dependent on specifically who provides job-related training. This outcome captures the value of completing job-related training, which was provided by the employer, as compared to those that have not done any training at all in the past year.

The key variable of interest in this estimation is a categorical variable detailing whether an individual has completed job-related training provided by the employer, has completed job-related training not provided by the employer, or has not completed any training at all. The Understanding Society classifications mean that "non-employer" provided training refers to training provided through government training schemes, university/college degree or diploma courses, or other types of training schemes or courses.

Note that any individuals who have completed both training provided by the employer and training from alternative providers are not included in the analysis. Similarly, given that the Understanding Society survey asks participants about the details of only up to three job-related training courses, those that have completed more than three are not included in the analysis. This ensures that no individuals are misclassified as a result of completing more courses – this does not apply to the majority of individuals.

The wording of this outcome/question is adjusted to "Job-related training (provided by employer)" to accurately reflect and clarify the nature of the estimated value.

The second potential job-related training outcome refers to that *not* provided by the employer. However, for this outcome the analysis did not produce any results significantly different from zero – therefore it is not included as a separate item in this note.

3.2 Local Environment

3.2.1 No problem with teenagers hanging around

This outcome captures the value of there being no problem of teenagers hanging around.

The key variable of interest uses a survey question from Crime Survey for England and Wales, where respondents must answer the following question:

How much of a problem are teenagers hanging around on the streets?

1) *Very big problem*
2) *Fairly big problem*
3) *Not a very big problem*
4) *Not a problem at all*

This outcome assigns value to respondents reporting "not a very big problem" or "not a problem at all" to this question.

Note, that the available data variables in the Crime Survey for England and Wales mean that the control variables differ slightly from the rest of the estimations in the HACT SVB. Whilst most of the same standard variables are included, such as age and gender, there are no suitable variables available to capture whether an individual is a carer or their accommodation ownership status. The available income variable is captured in bands rather than being continuous and thus does not allow for the logarithmic transformation or equivalisation. In addition to this, SF-12 measures of physical and mental health are not available and thus a variable of "general health" is used to capture both of these. The remaining controls are all consistent with the rest of the HACT analysis.

Due to the likely relations between problems of teenagers hanging around, vandalism/graffiti, anti-social behaviour and whether or not the police do a good job, these outcomes are all estimated in the same regression.

3.2.2 No problem with vandalism/graffiti

This outcome captures the value of there being no problem with vandalism or graffiti.

The key variable of interest uses a survey question from Crime Survey for England and Wales, where respondents must answer the following question:

How much of a problem is vandalism, graffiti and other deliberate damage to property or vehicles?

1) *Very big problem*
2) *Fairly big problem*
3) *Not a very big problem*
4) *Not a problem at all*

This outcome assigns value to respondents reporting "not a very big problem" or "not a problem at all" to this question. This is in line with the previous valuation.

Note, that the available data variables in the Crime Survey for England and Wales mean that the control variables differ slightly from the rest of the estimations in the HACT SVB. Whilst most of the same standard variables are included, such as age and gender, there are no suitable variables available to capture whether an individual is a carer or their accommodation ownership status. The available income variable is captured in bands rather than being continuous and thus does not allow for the logarithmic transformation or equivalisation. In addition to this, SF-12 measures of physical and mental health are not available and thus a variable of "general health" is used to capture both of these. The remaining controls are all consistent with the rest of the HACT analysis.

Due to the likely relations between problems of teenagers hanging around, vandalism/graffiti, anti-social behaviour and whether or not the police do a good job, these outcomes are all estimated in the same regression.

3.2.3 Not worried about crime

This outcome captures the value of an individual not being worried about crime.

The key variable of interest is derived from a number of survey questions from Crime Survey for England and Wales. This incorporates how worried an individual is about any of:

- Being raped

- Being mugged or robbed
- Being physically attacked by strangers
- Having their home broken into.

If an individual is "very worried" or "fairly worried" about any of the above, our derived variable of interest indicates that they are worried about crime. This outcome assigns value to respondents who are not worried about crime.

Note, that the available data variables in the Crime Survey for England and Wales mean that the control variables differ slightly from the rest of the estimations in the HACT SVB. Whilst most of the same standard variables are included, such as age and gender, there are no suitable variables available to capture whether an individual is a carer or their accommodation ownership status. The available income variable is captured in bands rather than being continuous and thus does not allow for the logarithmic transformation or equivalisation. In addition to this, SF-12 measures of physical and mental health are not available and thus a variable of "general health" is used to capture both of these. The remaining controls are all consistent with the rest of the HACT analysis.

3.2.4 No problem with anti-social behaviour

This outcome captures the value of there being no problem with anti-social behaviour in the local area.

The key variable of interest uses a survey question from Crime Survey for England and Wales, where respondents must answer the following question:

How much of a problem is anti-social behaviour in your local area? By your area I mean within 15 minutes' walk from here.

1) *Very big problem*
2) *Fairly big problem*
3) *Not a very big problem*
4) *Not a problem at all*

This outcome assigns value to respondents reporting "not a very big problem" or "not a problem at all" to this question. This is in line with the previous valuation.

Note, that the available data variables in the Crime Survey for England and Wales mean that the control variables differ slightly from the rest of the estimations in the HACT SVB. Whilst most of the same standard variables are included, such as age and gender, there are no suitable variables available to capture whether an individual is a carer or their accommodation ownership status. The available income variable is captured in bands rather than being continuous and thus does not allow for the logarithmic transformation or equivalisation. In addition to this, SF-12 measures of physical and mental health are not available and thus a variable of "general health" is used to capture both of these. The remaining controls are all consistent with the rest of the HACT analysis.

Due to the likely relations between problems of teenagers hanging around, vandalism/graffiti, anti-social behaviour and whether or not the police do a good job, these outcomes are all estimated in the same regression.

3.2.5 Police do good job

This outcome captures the value of the police doing a good job in the local area.

The key variable of interest uses a survey question from Crime Survey for England and Wales, where respondents must answer the following question:

Taking everything into account, how good a job do you think the police IN THIS AREA are doing?

1) *Excellent*
2) *Good*
3) *Fair*
4) *Poor*
5) *Very poor*

This outcome assigns value to respondents reporting "excellent" or "good" to this question. This is in line with the previous valuation.

Note, that the available data variables in the Crime Survey for England and Wales mean that the control variables differ slightly from the rest of the estimations in the HACT SVB. Whilst most of the same standard variables are included, such as age and gender, there are no suitable variables available to capture whether an individual is a carer or their accommodation ownership status. The available income variable is captured in bands rather than being continuous and thus does not allow for the logarithmic transformation or equivalisation. In addition to this, SF-12 measures of physical and mental health are not available and thus a variable of "general health" is used to capture both of these. The remaining controls are all consistent with the rest of the HACT analysis.

Due to the likely relations between problems of teenagers hanging around, vandalism/graffiti, anti-social behaviour and whether or not the police do a good job, these outcomes are all estimated in the same regression.

3.2.6 No litter problems

This outcome captures the value of there not being a problem of litter or rubbish in the local area.

The key variable of interest uses a survey question from Crime Survey for England and Wales, where respondents must answer the following question:

How much of a problem is rubbish or litter lying around?

1) *Very big problem*
2) *Fairly big problem*
3) *Not a very big problem*
4) *Not a problem at all*

This outcome assigns value to respondents reporting "not a very big problem" or "not a problem at all" to this question. This is in line with the previous valuation.

Note, that the available data variables in the Crime Survey for England and Wales mean that the control variables differ slightly from the rest of the estimations in the HACT SVB. Whilst most of the same

standard variables are included, such as age and gender, there are no suitable variables available to capture whether an individual is a carer or their accommodation ownership status. The available income variable is captured in bands rather than being continuous and thus does not allow for the logarithmic transformation or equivalisation. In addition to this, SF-12 measures of physical and mental health are not available and thus a variable of "general health" is used to capture both of these. The remaining controls are all consistent with the rest of the HACT analysis.

3.2.7 Able to obtain advice locally

This outcome captures the value of individuals being able to obtain advice locally, as compared to those that are not able to.

The key variable of interest uses a survey question from Understanding Society, where respondents must agree or disagree with the following statement:

If I needed advice about something I could go to someone in my neighbourhood.

1) *Strongly agree*
2) *Agree*
3) *Neither agree/disagree*
4) *Disagree*
5) *Strongly disagree*

This outcome assigns value to respondents reporting "strongly agree" or "agree" to this statement. This is in line with the previous valuation.

Previously, this outcome was estimated against life satisfaction on its own, with only the inclusion of standard control variables as detailed above. However, the outcomes of local advice, good neighbourhood, feeling belonging to neighbourhood, and talking to neighbours regularly are all very closely related. The data available now allows us to estimate all four of these outcomes in one regression, in addition to the standard control variables, becoming the adopted approach.

3.2.8 Good neighbourhood

This outcome captures the value of individuals liking living in their neighbourhood, as compared to those that do not like it.

The key variable of interest uses a survey question from Understanding Society, where respondents must answer the following question:

Overall, do you like living in this neighbourhood?

1) *Yes*
2) *No*

This outcome assigns value to respondents reporting "yes".

Previously, this outcome was estimated against life satisfaction on its own, with only the inclusion of standard control variables as detailed above. However, the outcomes of local advice, good neighbourhood, feeling belonging to neighbourhood, and talking to neighbours regularly are all very

closely related. The data available now allows us to estimate all four of these outcomes in one regression, in addition to the standard control variables, becoming the adopted approach.

In addition to this, the nature of the survey question used to estimate this value means that the fundamental concept of this outcome has changed slightly – using the previous BHPS data, this outcome corresponded to whether or not individuals think their neighbourhood is a good place to live, answering on a 5-point scale. Given this slight change of nature of the outcome, the outcome question has been reworded to accurately reflect the Understanding Society variable.

3.2.9 Feel belonging to neighbourhood

This outcome captures the value of individuals feeling belonging to their neighbourhood, as compared to those that do not.

The key variable of interest uses a survey question from Understanding Society, where respondents must agree or disagree with the following statement:

I feel like I belong to this neighbourhood.

1) *Strongly agree*
2) *Agree*
3) *Neither agree/disagree*
4) *Disagree*
5) *Strongly disagree*

This outcome assigns value to respondents reporting "strongly agree" or "agree" to this statement. This is in line with the previous valuation.

Previously, this outcome was estimated against life satisfaction on its own, with only the inclusion of standard control variables as detailed above. However, the outcomes of local advice, good neighbourhood, feeling belonging to neighbourhood, and talking to neighbours regularly are all very closely related. The data available now allows us to estimate all four of these outcomes in one regression, in addition to the standard control variables, becoming the adopted approach.

3.2.10 Talks to neighbours regularly

This outcome captures the value of individuals talking to neighbours regularly, as compared to not doing so.

The key variable of interest uses a survey question from Understanding Society, where respondents must agree or disagree with the following statement:

I regularly stop and talk with people in my neighbourhood.

1) *Strongly agree*
2) *Agree*
3) *Neither agree/disagree*
4) *Disagree*
5) *Strongly disagree*

This outcome assigns value to respondents reporting "strongly agree" or "agree" to this statement. This is in line with the previous valuation.

Previously, this outcome was estimated against life satisfaction on its own, with only the inclusion of standard control variables as detailed above. However, the outcomes of local advice, good neighbourhood, feeling belonging to neighbourhood, and talking to neighbours regularly are all very closely related. The data available now allows us to estimate all four of these outcomes in one regression, in addition to the standard control variables, becoming the adopted approach.

3.2.11 Greenspaces are within walking distance

This outcome captures the value of individuals living within walking distance to their local greenspaces, as compared to this not being the case.

The key variable of interest uses a survey question from Monitor of Engagement with the Natural Environment, where respondents must agree or disagree with the following statement:

My local greenspaces are within easy walking distance.

1) *Strongly agree*
2) *Agree*
3) *Neither agree/disagree*
4) *Disagree*
5) *Strongly disagree*

This outcome assigns value to respondents reporting "strongly agree" or "agree" to this statement.

The outcomes of greenspaces being within easy walking distance, of a high standard and easy to get into and around are all very closely related. The data available allows us to estimate all three of these outcomes in one regression, in addition to the standard control variables, becoming the adopted approach.

It should be noted that, due to the analysis for this outcome using data from the Monitor of Engagement with the Natural Environment survey, not all of the standard control variables could be accounted for. This includes an individual's religion, whether they are a carer, and their education level. The quadratic of the age variable is also not included as the corresponding age question refers to age groups rather than the actual age. However, this is not a problem as the age groupings already capture the curvature of the relationship.

3.2.12 Greenspaces are of a high standard

This outcome captures the value of local greenspaces being of a high enough standard, as compared to this not being the case.

The key variable of interest uses a survey question from Monitor of Engagement with the Natural Environment, where respondents must agree or disagree with the following statement:

My local greenspaces are of a high enough standard to want to spend time there.

1) *Strongly agree*
2) *Agree*

3) *Neither agree/disagree*
4) *Disagree*
5) *Strongly disagree*

This outcome assigns value to respondents reporting "strongly agree" or "agree" to this statement.

The outcomes of greenspaces being within easy walking distance, of a high standard and easy to get into and around are all very closely related. The data available allows us to estimate all three of these outcomes in one regression, in addition to the standard control variables, becoming the adopted approach.

It should be noted that, due to the analysis for this outcome using data from the Monitor of Engagement with the Natural Environment survey, not all of the standard control variables could be accounted for. This includes an individual's religion, whether they are a carer, and their education level. The quadratic of the age variable is also not included as the corresponding age question refers to age groups rather than the actual age. However, this is not a problem as the age groupings already capture the curvature of the relationship.

3.2.13 Greenspaces are easy to get into and around

This outcome captures the value of the accessibility of local greenspaces – whether they are easy to get into and around, as compared to this not being the case.

The key variable of interest uses a survey question from Monitor of Engagement with the Natural Environment, where respondents must agree or disagree with the following statement:

My local greenspaces are easy to get into and around.

1) *Strongly agree*
2) *Agree*
3) *Neither agree/disagree*
4) *Disagree*
5) *Strongly disagree*

This outcome assigns value to respondents reporting "strongly agree" or "agree" to this statement.

The outcomes of greenspaces being within easy walking distance, of a high standard and easy to get into and around are all very closely related. The data available allows us to estimate all three of these outcomes in one regression, in addition to the standard control variables, becoming the adopted approach.

It should be noted that, due to the analysis for this outcome using data from the Monitor of Engagement with the Natural Environment survey, not all of the standard control variables could be accounted for. This includes an individual's religion, whether they are a carer, and their education level. The quadratic of the age variable is also not included as the corresponding age question refers to age groups rather than the actual age. However, this is not a problem as the age groupings already capture the curvature of the relationship.

3.2.14 Has access to private outdoor space (private garden, private shared garden, balcony, patio)

This outcome captures the value of individuals having access to a private outdoor space. This includes private gardens, private communal gardens, and private areas which are not gardens such as a balcony, patio area or yard.

The key variable of interest uses a survey question from Monitor of Engagement with the Natural Environment, where respondents must pick which of the following options best applies to them:

1) *I have access to a private garden*
2) *I have access to a private communal garden*
3) *I have access to a private outdoor space but not a garden (balcony, yard, patio area)*
4) *I don't have access to a garden*

This outcome assigns value to respondents reporting any of the first three options.

It should be noted that, due to the analysis for this outcome using data from the Monitor of Engagement with the Natural Environment survey, not all of the standard control variables could be accounted for. This includes an individual's religion, whether they are a carer, and their education level. The quadratic of the age variable is also not included as the corresponding age question refers to age groups rather than the actual age. However, this is not a problem as the age groupings already capture the curvature of the relationship.

In order to ensure that this value is not capturing any effect beyond owning a garden, such as some aspect of wealth through house prices or house ownership, these variables were also incorporated into the analysis as a robustness check. The results were not significantly different from our standard model, and so for consistency are not included in the final value estimations.

3.3 Health

With the exception of the "Can rely on family" and "Improved diet" outcomes, all of the health outcomes are estimated through the impact via health only (as detailed in Section 2.3).

3.3.1 High confidence (adult)

This outcome captures the value of an adult not having issues with their confidence levels.

The key variable of interest uses a general health survey question from Understanding Society, where respondents must answer the following question:

Have you recently been losing confidence in yourself?

1) *Not at all*
2) *No more than usual*
3) *Rather more than usual*
4) *Much more than usual*

This outcome assigns value to respondents reporting "*Not at all*" to this question.

It should be noted that the analysis sample is restricted through the addition of a lag on whether someone had been losing confidence in the previous survey wave.

3.3.2 Relief from depression/anxiety (adult)

This outcome captures the value of an adult experiencing relief from depression.

The key variable of interest uses a survey question from Understanding Society, where respondents must answer the following question:

Have you recently been feeling unhappy or depressed?

1) Not at all

2) No more than usual

3) Rather more than usual

4) Much more than usual

This outcome assigns value to respondents reporting "*Not at all*" to this question.

It should be noted that the analysis sample is restricted by limiting the treatment variable to individuals who currently suffer from depression and have been diagnosed with clinical depression at some point during their life. Note, as we only include individuals suffering from depression who have also been diagnosed as such, this may lead to a self-selection issue with the treatment group having a significantly lower life satisfaction.

3.3.3 Good overall health

This outcome captures the value of an adult experiencing good overall health.

The key variable of interest uses a general health survey question from Understanding Society, where respondents must answer the following question:

In general, would you say your health is...

1) Excellent

2) Very good

3) Good

4) Fair

5) Poor

Individuals responding with excellent, very good or good are categorised as having "Good overall health".

The sample is restricted by limiting the treatment variable to individuals who reported not having good overall health in the previous survey wave.

3.3.4 Relief from alcohol problems

This outcome captures the value of an adult experiencing relief from alcohol problems. Having an "alcohol problem" is captured by the frequency of drinking more than 6 units of alcohol.

The key variable of interest uses a survey question from Understanding Society, where respondents must answer the following question:

How often have you had 6 or more units of alcohol on a single occasion in the last year?

1) Never

2) Less than monthly

3) Monthly

4) Weekly

5) Daily or almost daily

6) Does not drink alcohol

Individuals responding with *"daily or almost daily"* are reported to have an alcohol problem.

Note that previously the data allowed for the analysis to explicitly capture both drug and alcohol problems, whereas the Understanding Society data now allows only for the above derived alcohol measure, with no reference at all to drug usage.

3.3.5 Smoking cessation

This outcome captures the value of an adult no longer smoking.

The key variable of interest uses a survey question from Understanding Society, where respondents must answer the following question:

Do you smoke cigarettes?

1) Yes

2) No

This outcome assigns value to respondents reporting "*No*" to this question.

The sample is restricted to individuals who previously reported that they have "ever smoked" in their lives.

3.3.6 Can rely on family

This outcome captures the value of individuals being able to rely on their immediate family, as compared to those that cannot.

The key variable of interest uses a survey question from Understanding Society, where respondents must answer the following question:

Thinking of your immediate family, how much can you rely on them if you have a serious problem?

1) *A lot*
2) *Somewhat*
3) *A little*
4) *Not at all*

This outcome assigns value to respondents reporting "a lot" only. This is in line with the previous valuation.

3.3.7 Improved diet

This outcome captures the value of individuals having an improved diet, as captured by eating fruit.

The key variable of interest uses a survey question from Understanding Society, where respondents must answer the following question:

Including tinned, frozen, dried and fresh fruit, on how many days in a usual week do you eat fruit?

1) *Never*
2) *1 -3 days*
3) *4-6 days*
4) *Every day*

This outcome assigns value to respondents reporting 4-6 days or more.

3.3.8 Improved ability to manage addiction

This outcome captures the value of individuals who have used drugs in the past year moving from feeling they couldn't go to someone in their neighbourhood if they needed advice to feeling that they could.

The key variable of interest uses a survey question from Understanding Society, where respondents must answer the following question:

Here are some statements about neighbourhoods. Please answer how strongly you agree or disagree with each statement.

If I needed advice about something I could go to someone in my neighbourhood.

5) *Strongly agree*
6) *Agree*
7) *Neither agree nor disagree*
8) *Disagree*
9) *Strongly disagree*

This outcome assigns value to respondents reporting "agree" or "strongly agree" to this question. This outcome should only be assigned to those who are known to have used drugs in the last year.

In addition to the standard control variables, an individual's self-reported levels of confidence and feelings of depression are controlled for in the health top-up regressions. This is due to the likely strong relationships between these factors and the outcome and well as between these factors and health. Controlling for them, therefore, allows for the estimation of the impact of the outcome on health net of these factors.

Ideally, feelings of being able to rely on one's family would also be included as a control variable. However, the waves that this variable is asked in do not match those that the outcome is asked in, meaning this was not possible. This may marginally inflate the number, although the impact is felt to be reasonably small.

Note that this variable is not an exact match for the outcome. This is due to Understanding Society not containing a question that asks about an improved ability to manage one's addiction. Because of this,

the above variable was used as a proxy. To maximise its alignment with the outcome, the analysis sample is restricted to individuals who have used drugs in the past year.

3.3.9 Improved motivation to address addiction

This outcome captures the value of an individual moving from feeling that they cannot motivate themself to accomplish long-term goals to feeling that they can.

The key variable of interest uses a survey question from Understanding Society, where respondents must answer the following question on a 0-10 scale, where 0 signifies that they strongly disagree and 10 that they strongly agree:

To what extent do you agree or disagree that the following set of statements describes you?

I cannot motivate myself to accomplish long-term goals.

This outcome assigns value to respondents reporting a 5 or less to this question.

In addition to the standard control variables, self-reported feelings of financial comfort are controlled for. This is due to the likely high degree of overlap between this and having a sense of motivation around the achievement of long-term goals. Due to the outcome focusing on addicted individuals, whether an individual has used drugs in the past year is also controlled for. This was chosen because, among variables estimating addiction, it was included in the largest number of waves.

Moreover, an individual's self-reported levels of confidence, feelings of depression and feelings of being able to rely on their family are controlled for in the health top-up regressions. This is due to the likely strong relationships between these factors and the outcome and well as between these factors and health. Controlling for them, therefore, allows for the estimation of the impact of the outcome on health net of these factors.

3.3.10 Improved positive lifestyle choices

This outcome captures the value of an individual moving from not feeling optimistic about the future to feeling optimistic about the future.

The key variable of interest uses a survey question from Understanding Society, where respondents must answer the following question:

Here are some statements about feelings and thoughts. Please select the answer that best describes your experience of each over the last 2 weeks.

I've been feeling optimistic about the future.

1) *None of the time*
2) *Rarely*
3) *Some of the time*
4) *Often*
5) *All of the time*

This outcome assigns value to respondents reporting "often" or "all of the time" to this question.

In addition to the standard control variables, self-reported feelings of financial comfort are controlled for in both the direct and health top-up regressions. This is due to the likely high degree of overlap between this and feeling optimistic about the future.

Ideally, several other factors would also be included as control variables. Such variables could influence both the outcome and the dependent variable. Some candidates include job security, feelings around crime and financial factors. However, since the outcome is only available in one wave, it was not possible to control for these factors. As such, we do not allow this outcome to be applied at the same time as outcomes in those areas.

3.4 Financial Inclusion

3.4.1 Afford to keep house well-decorated

This outcome captures the value of individuals affording to keep their home in a decent state of repair, as compared to those that cannot afford to do so.

The key variable of interest uses a survey question from Understanding Society, where respondents must answer the following question:

Do you have enough money to keep your house in a decent state of repair?

1) *We have this*
2) *Can't afford it*
3) *Don't need it now*
4) *Does not apply*

The sample used in this estimation is limited to only those responding either "We have this" and "Can't afford it", whereby value is assigned to respondents reporting the former.

Note, that in the previous version of the HACT value bank, this outcome was estimated using survey data which asked respondents on their ability to keep their home in a "decent state of decoration". However, given that this value is no longer available, this outcome has been adapted and reworded.

3.4.2 Able to save regularly

This outcome captures the value of individuals being able to save regularly, as compared to those who cannot do so on a regular basis, or do not save at all.

The key variable of interest mainly uses a survey question from Understanding Society, where respondents must answer the following question:

Do you save on a regular basis or just from time to time when you can?

1) *Regular basis*
2) *From time to time*
3) *Other*

In the Understanding Society survey, this question is only asked to those who have previously reported that they do indeed save at all. Therefore, in the analysis these responses are also incorporated such

that the value compares not only those that save regularly or from time to time, but also those that do not save at all.

Given the slight change in nature of the combination of data variables being used in this estimation, the wording of the HACT outcome differs slightly to:

Do you save on a regular basis?

1) *Yes*
2) *No*

3.4.3 Relief from being heavily burdened with debt

This outcome captures the value to individuals of not being heavily burdened with debt. Note that previously there were two outcomes in the SVB relating to debt – due to the strong overlap between the two and feedback from the HACT working groups, this has now been narrowed to just this outcome.

The key variable of interest uses a survey question from the Wealth and Assets Survey, where respondents must answer the following question:

If you are in debt (not including mortgage-debt), to what extent is keeping up with the repayment of your non-mortgage debt and any interest payments a financial burden to you?

1) *Heavy burden*
2) *Somewhat of a burden*
3) *Not a problem*

This outcome assigns value to respondents who are not facing a "heavy financial burden" – this includes both respondents who report that their debt is only somewhat or not a burden, as well those that do not have any non-mortgage debt at all. Note that the outcome is specified for non-mortgage debt due to available data in the Wealth and Assets Survey.

In addition to the standard control variables detailed in Section 2.1, this estimation also includes controls for the household total net property wealth, the household net financial wealth and the total physical wealth. These controls are taken from the recently published paper for the Financial Conduct Authority "The Wellbeing Effects of Debt and Debt-Related Factors".

Furthermore, due to the analysis for this outcome using data from the Wealth and Assets Survey, not all of the standard control variables could be accounted for. This includes an individual's religion, whether they live in an urban area, whether they are a carer, and the quadratic of the age variable (given that the corresponding age question refers to age groups rather than the actual age, this is not a problem as the grouping already captures the curvature of the relationship). However, comparisons between this analysis, the analysis used in the FCA report and estimates conducted using only Understanding Society data suggest that the benefits of including the additional financial controls (which are not available in Understanding Society) outweigh the costs of the incomplete control variables.

3.4.4 Able to pay for housing

This outcome captures the ability of an individual to pay for their accommodation, as compared to those that have struggled.

The key variable of interest uses a survey question from Understanding Society, where respondents must answer the following question:

In the last 12 months, have you ever found yourself behind with your rent/mortgage?

1) *Yes*
2) *No*

This outcome assigns value to respondents having answered "No". This is in line with the previous valuation. However, due to the wording of the Understanding Society survey question used, the HACT question has been reworded slightly, such that the two questions are in alignment.

3.4.5 Financial comfort

This outcome captures an individual's subjective financial situation.

The key variable of interest uses a survey question from Understanding Society, where respondents must answer the following question:

How well would you say you yourself are managing financially these days?

1) *Living comfortably*
2) *Doing alright*
3) *Just about getting by*
4) *Finding it quite difficult*
5) *Finding it very difficult*

This outcome assigns value to those responding that they are "doing alright" and "living comfortably". This is in line with the previous estimations.

3.4.6 Access to internet

This outcome captures the value of a household having access to internet from their homes.

The key variable of interest uses a survey question from Understanding Society, where respondents must answer the following question:

Does your household have access to the internet from home?

1) *Yes*
2) *No*

This outcome assigns value to respondents reporting "yes" to this question. This is in line with the previous valuation.

However, given the increase in prevalence of internet access since the previous estimation took place, the data indicates that this outcome is not very relevant to high-income households. Given that the vast majority of households have internet access of some form, only a very small proportion of the population report "no" to the above question. This does not allow for a robust analysis of the relationship. For this reason, the population analysed for this outcome is restricted to only low-income

households. As per Government guidance, households are classified as being low-income if they live on less than 60% of the average (median) net disposable equivalised UK household income. The outcome remains more relevant for this subset of the population.

3.4.7 Access to internet via computer

This outcome captures the value of a household having access to the internet via a home computer, laptop, netbook or tablet computer, as opposed to those which have access to internet but only via a different means, such as mobile phone or games console. This outcome may be particularly relevant given the recent increase in working from home culture and therefore importance of having adequate access to internet.

The key variable of interest uses a survey question from Understanding Society, where respondents must answer the following question:

How does your household access the internet from home?

1) *Home computer, laptop, netbook or tablet computer*
2) *Digital television*
3) *Mobile phone*
4) *Games console*
5) *Other*

This outcome assigns value to respondents reporting the first option to this question.

Given the increase in prevalence of internet access since the previous estimation took place, the data indicates that this outcome is not very relevant to high-income households. For this reason, the population analysed for this outcome is restricted to only low-income households. As per Government guidance, households are classified as being low-income if they live on less than 60% of the average (median) net disposable equivalised UK household income. The outcome remains more relevant for this subset of the population.

3.4.8 Able to insure home contents

This outcome captures the value of an individual insuring their home contents.

The key variable of interest uses a survey question from Crime Survey for England and Wales, where respondents must answer the following question:

Are the contents of your home insured?

1) *Yes*
2) *No*

This outcome assigns value to respondents reporting "yes" to this question. This is in line with the previous valuation.

Note, that the available data variables in the Crime Survey for England and Wales mean that the control variables differ slightly from the rest of the estimations in the HACT SVB. Whilst most of the same standard variables are included, such as age and gender, there are no suitable variables available to capture whether an individual is a carer or their ownership status of their accommodation. The available income variable is captured in bands rather than being continuous and thus does not allow for the logarithmic transformation or equivalisation. In addition to this, SF-12 measures of physical and mental health are not available and thus a variable of "general health" is used to capture both of these. The remaining controls are all consistent with the rest of the HACT analysis.

3.4.9 Able to heat household in the winter

This outcome captures the value of a household being able to heat their accommodation.

The key variable of interest uses a survey question from Understanding Society, where respondents must answer the following question:

In winter, are you able to keep this accommodation warm enough?

1) *Yes*
2) *No*

This outcome assigns value to respondents reporting "yes" to this question.

3.4.10 Reduced energy debt

This outcome captures the value of an individual moving from being behind with some or all bills to being up to date with all bills.

The key variable of interest uses a survey question from Understanding Society, where respondents must answer the following question:

Sometimes people are not able to pay every household bill when it falls due. May we ask, are you up to date with all your household bills such as electricity, gas, water rates, telephone and other bills or are you behind with any of them?

1) *Up to date with all bills*
2) *Behind with some bills*
3) *Behind with all bills*

This outcome assigns value to respondents reporting "up to date with all bills" to this question.

In addition to the standard control variables, self-reported feelings of financial comfort are controlled for. This is due to the likely high degree of overlap between this and being up to date with all bills.

Moreover, an individual's self-reported levels of confidence and feelings of depression are controlled for in the health top-up regressions. This is due to the likely strong relationships between these factors and the outcome and well as between these factors and health. Controlling for them, therefore, allows for the estimation of the impact of the outcome on health net of these factors.

3.5 Youth

3.5.1 Go to youth clubs

This outcome captures the value of youths attending a youth club. However, our analysis of the data does not indicate an effect significantly different from zero. A number of alternative specifications were tested as further robustness checks, including:

- Controlling for granular geographic level – this accounted for any local area effects which may impact on the results, such as there being greater positive impacts of youth clubs in low-income areas.
- Controlling for local crime levels.

As a result of this analysis, there is no corresponding wellbeing value for youth clubs. There is however a corresponding health top-up value.

3.5.2 Does not feel useless (youth)

This outcome captures the value of youths not feeling useless.

The key variable of interest is a dummy variable capturing whether or not an individual reports feeling useless. This uses data from Understanding Society, where respondents must answer the following:

I certainly feel useless at times.

1) *Strongly agree*
2) *Agree*
3) *Disagree*
4) *Strongly disagree*

This outcome assigns value to those responding "strongly disagree" or "disagree" to the above.

Note that this outcome replaces a previous outcome which captured youth depression and anxiety. The current data does not allow us to accurately capture this same exact outcome.

3.5.3 Improvements in confidence (youth)

This outcome captures the value of youths not being nervous in new situations or not easily losing confidence.

The key variable of interest is a dummy variable capturing whether or not an individual reports a lack of confidence. This uses data from Understanding Society, where respondents must state whether the following is true:

I am nervous in new situations or easily lose confidence.

1) *Not true*
2) *Somewhat true*

3) *Certainly true*

This outcome assigns value to those responding "not true" to the above.

3.6 Social Groups & Hobbies

3.6.1 Active in a social group

This outcome captures the value of being active in a social/working men's club.

The key variable of interest is a dummy variable capturing whether or not an individual is active in a social or working men's club. This uses data from Understanding Society, where respondents must answer the following:

Whether you are a member or not, do you join in the activities of social or working men clubs on a regular basis?

4) *Yes*

5) *No*

This outcome assigns value to those responding "yes" to the above.

Note, the data available allows us to align the two social group outcomes, such that they are both capturing the same value of being active in the respective groups. Therefore, this outcome has been reworded slightly to reflect this change.

Due to the correlation between being active in a social group and being active in a tenant's group, both variables are estimated in the same regression, in addition to the standard control variables. This ensures that any social value due to being active in a tenant's group is not misattributed to being active in a social group, and vice versa.

3.6.2 Active in tenants' group

This outcome captures the value of being active in a tenants'/residents' group or Neighbourhood Watch.

The key variable of interest is a dummy variable capturing whether or not an individual is active in a tenants' group. This uses data from Understanding Society, where respondents must answer the following:

Whether you are a member or not, do you join in the activities of tenants or residents groups on a regular basis?

1) *Yes*

2) *No*

This outcome assigns value to those responding "yes" to the above.

Due to the correlation between being active in a social group and being active in a tenant's group, both variables are estimated in the same regression, in addition to the standard control variables. This ensures

that any social value due to being active in a tenant's group is not misattributed to being active in a social group, and vice versa.

3.6.3 Enjoys gardening

This outcome captures the value of an individual enjoying gardening, as compared to those that do not.

The key variable of interest uses a survey question from Monitor of Engagement with the Natural Environment, where respondents must agree or disagree with the following statement:

I enjoy gardening.

1) *Strongly agree*
2) *Agree*
3) *Neither agree/disagree*
4) *Disagree*
5) *Strongly disagree*

This outcome assigns value to respondents reporting "strongly agree" or "agree" to this statement.

It should be noted that, due to the analysis for this outcome using data from the Monitor of Engagement with the Natural Environment survey, not all of the standard control variables could be accounted for. This includes an individual's religion, whether they are a carer, and their education level. The quadratic of the age variable is also not included as the corresponding age question refers to age groups rather than the actual age. However, this is not a problem as the age groupings already capture the curvature of the relationship.

3.7 Physical Activity

3.7.1 Infrequent moderate exercise

This outcome captures the value of an individual doing any moderate form of exercise on an infrequent basis over the past 12 months, as compared to those that do not do any moderate form of exercise. "Infrequent" is defined as exercise completed less often than once a week.

This variable is taken from a survey question in Understanding Society and includes, but is not limited to, the following sports:

- Health, fitness, gym or conditioning activities (including aerobics, keep-fit classes, weight-training or weight-lifting)
- Gymnastics
- Swimming or diving
- Cycling, BMX or mountain biking (for sport or recreation)
- Football (including 5 or 6-a-side)
- Rugby (Union or League) or American Football
- Track and field athletics
- Jogging, cross-country, road-running
- Hill trekking, backpacking, climbing or mountaineering

- Golf (including pitch and putt)
- Boxing
- Martial arts (including tai chi, taekwondo, karate and judo)
- Water sports, including yachting, dinghy sailing, canoeing, rowing, windsurfing, waterski-ing etc.
- Horse riding
- Basketball
- Netball
- Volleyball
- Cricket
- Hockey
- Baseball, softball or rounders
- Racquet sports such as table tennis, tennis, badminton or squash
- Ice-skating
- Ski-ing (on snow, or an artificial surface: on slopes or grass)
- Motor sports
- Angling or Fishing
- Archery (if age is greater than 64)
- Yoga or pilates (if age is greater than 64)
- Bowls, indoors or outdoors (if age is greater than 64)
- Croquet (if age is greater than 64)

3.7.2 Frequent moderate exercise

This outcome captures the value of an individual doing any moderate form of exercise on a frequent basis over the past 12 months, as compared to those that do moderate exercise only infrequently. "Frequent" is defined as exercise completed at least once a week.

This variable is taken from a survey question in Understanding Society and includes the same sports as listed above for infrequent moderate exercise.

Given that this outcome captures the value as compared to those that are already doing moderate exercise but on a less frequent basis, if an individual moves from no moderate exercise at all to frequent moderate exercise, the two outcomes are intended to be additive – they should be assigned both values.

3.7.3 Infrequent mild exercise

This outcome captures the value of an individual doing any mild form of exercise on an infrequent basis over the past 12 months, as compared to those that do no exercise at all. "Infrequent" is defined as sport completed less often than once a week.

This variable is taken from a survey question in Understanding Society and includes, but is not limited to, the following sports:

- Snooker, pool or billiards
- Darts
- Ten-pin bowling
- Rambling, for pleasure or recreation
- Shooting
- Archery (if age is less than 65)
- Yoga or pilates (if age is less than 65)
- Bowls, indoors or outdoors (if age is less than 65)
- Croquet (if age is less than 65)

This value is only applicable to individuals that participate in mild exercise only – if individuals also qualify for the moderate exercise outcomes, they should be assigned these values only.

3.7.4 Frequent mild exercise

This outcome captures the value of an individual doing any mild form of exercise on a frequent basis over the past 12 months, as compared to those that do mild exercise only infrequently. "Frequent" is defined as exercise completed at least once a week.

This variable is taken from a survey question in Understanding Society and includes the same sports as listed above for infrequent mild exercise.

Given that this outcome captures the value as compared to those that are already doing mild exercise but on a less frequent basis, if an individual moves from no exercise at all to frequent mild exercise, the two outcomes are intended to be additive – they should be assigned both values.

3.7.5 Walk/cycle short distances

This outcome captures the value of individuals walking or cycling short journeys.

The key variable of interest uses a survey question from Understanding Society, where respondents must answer the following question:

How often do you walk or cycle for short journeys less than 2 or 3 miles?

1) *Always*
2) *Very often*
3) *Quite often*
4) *Not very often*
5) *Never*

This outcome assigns value to respondents reporting "always", "very often" or "quite often" to this question.

3.8 Homelessness

In the previous version of the HACT SVB, all of the homelessness outcomes were estimated using data from the Australian Journeys Home survey. Active from 2011 to 2014, this was a longitudinal survey which collected data of 1,700 participants who were homeless or at risk thereof, surveying them across 6 waves. This included capturing health and income measures, as well as the exact nature of homelessness, allowing us to estimate the various outcomes included in the value bank.

However, given that this survey is no longer active, it is not possible for us to re-estimate the values from this dataset again. Furthermore, there is no more recent, equivalent dataset which covers a similar scope. For this reason, re-estimation is not possible at present – in this value refresh, the original analysis is simply updated for inflation. For full details on the original methodology applied to the homelessness outcomes, please refer to The Wellbeing Value of Tackling Homelessness, which documents the full approach.

3.9 Maintenance of the Household

3.9.1 Rectification of serious condensation/ mould growth

This outcome captures the value of there being no problems of serious condensation or mould growth within the property.

The key variable of interest uses the physical survey of the English Housing Survey, where surveyors must assess each room for extensive patches of mould growth on walls and ceilings and/or mildew on soft furnishings. Remedies would include redecoration, increased ventilation and/or increased heating provision. Surveyors should not record very minor defects – only those which are defects which would be considered when making judgements about health and safety hazards. For further details of what level of defect is sufficient to be considered in this assessment, the English Housing Survey Surveyor Briefing Manual should be consulted.

This outcome assigns value to those that do not have any serious condensation or mould growth. This is in line with the previous estimations.

In the HACT value bank, this value should be applied to households in which serious condensation or mould growth was present and has now been rectified.

In this estimation, the available data variables in the English Housing Survey mean that the control variables differ slightly from the rest of the estimations in the HACT SVB. Whilst most of the same standard variables are included, such as age and income, there is no suitable variable available to capture an individual's religion. In addition to this, SF-12 measures of physical and mental health are not available and thus a variable of "general health" is used to capture both of these. The remaining controls are all consistent with the rest of the HACT analysis.

3.9.2 Rectification of penetrating (higher level) damp

This outcome captures the value of there being no problems of penetrating higher level damp within the property.

The key variable of interest uses the physical survey of the English Housing Survey, where surveyors must assess each room for penetrating damp. This does not include temporary condensation, or if the cause has been rectified.

This outcome assigns value to those that do not suffer from any penetrating (higher level) damp. This is in line with the previous estimations. However, the analysis indicates that the corresponding value is not significantly different from zero. Therefore, there is no corresponding wellbeing value for this outcome.

In this estimation, the available data variables in the English Housing Survey mean that the control variables differ slightly from the rest of the estimations in the HACT SVB. Whilst most of the same standard variables are included, such as age and income, there is no suitable variable available to capture an individual's religion. In addition to this, SF-12 measures of physical and mental health are not available and thus a variable of "general health" is used to capture both of these. The remaining controls are all consistent with the rest of the HACT analysis.

3.9.3 Rectification of ceiling fault

This outcome captures the value of there being no ceiling faults within the property.

The key variable of interest uses the physical survey of the English Housing Survey, where surveyors must assess each room for ceiling faults - all ceilings, other soffits to the room and sloping ceilings in attics/dormers must be included.

This outcome assigns value to those that do not suffer from any ceiling faults. This is in line with the previous estimations.

In the HACT value bank, this value should be applied to households in which ceiling faults were present and have now been rectified.

In this estimation, the available data variables in the English Housing Survey mean that the control variables differ slightly from the rest of the estimations in the HACT SVB. Whilst most of the same standard variables are included, such as age and income, there is no suitable variable available to capture an individual's religion. In addition to this, SF-12 measures of physical and mental health are not available and thus a variable of "general health" is used to capture both of these. The remaining controls are all consistent with the rest of the HACT analysis.

3.9.4 Rectification of floor fault

This outcome captures the value of there being no floor faults within the property.

The key variable of interest uses the physical survey of the English Housing Survey, where surveyors must assess each room for floor faults – further details on how floor faults are determined can be found in the English Housing Survey Surveyor Briefing Manual.

This outcome assigns value to those that do not suffer from any floor faults. This is in line with the previous estimations.

In the HACT value bank, this value should be applied to households in which floor faults were present and have now been rectified.

In this estimation, the available data variables in the English Housing Survey mean that the control variables differ slightly from the rest of the estimations in the HACT SVB. Whilst most of the same standard variables are included, such as age and income, there is no suitable variable available to capture an individual's religion. In addition to this, SF-12 measures of physical and mental health are

not available and thus a variable of "general health" is used to capture both of these. The remaining controls are all consistent with the rest of the HACT analysis.

3.9.5 Rectification of wall fault

This outcome captures the value of there being no wall faults within the property.

The key variable of interest uses the physical survey of the English Housing Survey, where surveyors must assess each room for wall faults – this should include all walls of a room whether external, party wall, or internal partitions.

This outcome assigns value to those that do not suffer from any wall faults. This is in line with the previous estimations.

In the HACT value bank, this value should be applied to households in which wall faults were present and have now been rectified.

In this estimation, the available data variables in the English Housing Survey mean that the control variables differ slightly from the rest of the estimations in the HACT SVB. Whilst most of the same standard variables are included, such as age and income, there is no suitable variable available to capture an individual's religion. In addition to this, SF-12 measures of physical and mental health are not available and thus a variable of "general health" is used to capture both of these. The remaining controls are all consistent with the rest of the HACT analysis.

3.9.6 Rectification of door faults (interior doors)

This outcome captures the value of there being no interior door faults within the property.

The key variable of interest uses the physical survey of the English Housing Survey, where surveyors must assess each room for door faults – this should include internal doors only. Doors opening to the outside environment should not be included. Similarly, the entrance door to a flat, which opens off an enclosed hall, landing or stair, is classed as an exterior door, and should not be included. Doors into walk in cupboards should be included. If a door is missing, and it is intended that a door should be present, then this should be recorded as a fault.
This outcome assigns value to those that do not suffer from any wall faults. This is in line with the previous estimations.

In the HACT value bank, this value should be applied to households in which wall faults were present and have now been rectified.

In this estimation, the available data variables in the English Housing Survey mean that the control variables differ slightly from the rest of the estimations in the HACT SVB. Whilst most of the same standard variables are included, such as age and income, there is no suitable variable available to capture an individual's religion. In addition to this, SF-12 measures of physical and mental health are not available and thus a variable of "general health" is used to capture both of these. The remaining controls are all consistent with the rest of the HACT analysis.

3.9.7 Satisfaction with how landlord maintains and repairs home

This outcome captures the value of an individual being satisfied with landlord reparations and maintenance in their accommodation.

The key variable of interest uses the English Housing Survey where respondents must answer:

Overall, how satisfied or dissatisfied are you with the way your landlord repairs and maintains your home?

1) *Very satisfied*
2) *Fairly satisfied*
3) *Neither satisfied nor dissatisfied*
4) *Slightly dissatisfied*
5) *Very dissatisfied*

This outcome assigns value to those responding "very satisfied" or "fairly satisfied".

In this estimation, the available data variables in the English Housing Survey mean that the control variables differ slightly from the rest of the estimations in the HACT SVB. Whilst most of the same standard variables are included, such as age and income, there is no suitable variable available to capture an individual's religion. In addition to this, SF-12 measures of physical and mental health are not available and thus a variable of "general health" is used to capture both of these. The remaining controls are all consistent with the rest of the HACT analysis.

3.10 Maintenance of the local area

3.10.1 Resolution of problems with condition of dwellings

This outcome captures the value of there being no problems with the condition of dwellings in the local area around a household.

The key variable of interest uses the physical survey of the English Housing Survey, where surveyors must assign a score to the local area, capturing how much of a problem the condition of dwellings is. The extent of the problem is recorded on a simple subjective scale from 1 (no problem) to 5 (major problem). This is an impression of the external condition of dwellings in the area. Surveyors are instructed to consider whether run down or unsightly residential properties (including blocks of flats) have a negative visual impact on the local area.

The English Housing Survey defines the "local area" as:

"the 'area around the dwelling of which the dwelling seems to be a part'. To put an imaginary boundary on this area the surveyor will need to be aware of the character of the surrounding streets. Generally, a reliable impression will have been gained as the surveyor made the initial search for the address. The area is likely to be, but not necessarily defined by physical boundaries such as roads, railway lines, canals, etc. The survey dwelling will not necessarily be at the centre of the area. Surveyors should define an area of manageable size so that they can clearly define the boundaries of the local area and visually inspect the whole area on foot before proceeding to complete the questions."

This outcome assigns value to households in local areas which have been given a score of 1 or 2. This is in line with the previous estimations.

In this estimation, the available data variables in the English Housing Survey mean that the control variables differ slightly from the rest of the estimations in the HACT SVB. Whilst most of the same standard variables are included, such as age and income, there is no suitable variable available to capture an individual's religion. In addition to this, SF-12 measures of physical and mental health are not available and thus a variable of "general health" is used to capture both of these. The remaining controls are all consistent with the rest of the HACT analysis.

3.10.2 Resolution of problems with local streets

This outcome captures the value of there being no problems with the condition of local streets. This incorporates problems with:

- Condition of road, pavements and street furniture - consider how well road surfaces, pavements and other street furniture are maintained.
- Litter, rubbish or dumping - consider the quantity of discarded items, paper, cardboard, household goods in the street and in gardens, as well as any more extensive rubbish dumping.
- Graffiti - consider any painting or visual defacement on outside surfaces of either public or private property.
- Vandalism - consider any evidence of deliberate damage to either public or private property.
- Dog excrement - consider to what extent dog mess is a problem, or other excrement, in the area.

The key variable of interest uses the physical survey of the English Housing Survey, where surveyors must assign a score to the local area, capturing how much of a problem each of the above is. The extent of the problem is recorded on a simple subjective scale from 1 (no problem) to 5 (major problem).

This outcome assigns "No problem" to each outcome if they are individually scored as 1 or 2, and "A problem" if scored higher. Overall, this outcome can only be applied if all of the above outcomes have been respectively resolved.

In this estimation, the available data variables in the English Housing Survey mean that the control variables differ slightly from the rest of the estimations in the HACT SVB. Whilst most of the same standard variables are included, such as age and income, there is no suitable variable available to capture an individual's religion. In addition to this, SF-12 measures of physical and mental health are not available and thus a variable of "general health" is used to capture both of these. The remaining controls are all consistent with the rest of the HACT analysis.

3.10.3 Resolution of problems with scruffiness

This outcome captures the value of there being no problems of scruffiness. This incorporates problems with:

- Scruffy gardens/ landscaping - consider to what extent poorly maintained private plots and public open spaces have a negative impact on the area.
- Scruffy/ neglected buildings - consider to what extent run down or unsightly commercial, civic, or other public buildings have a negative effect on the environment.

The key variable of interest uses the physical survey of the English Housing Survey, where surveyors must assign a score to the local area, capturing how much of a problem each of the above is. The extent of the problem is recorded on a simple subjective scale from 1 (no problem) to 5 (major problem).

This outcome assigns "No problem" to each outcome if they are individually scored as 1 or 2, and "A problem" if scored higher. Overall, this outcome can only be applied if both of the above outcomes have been respectively resolved.

In this estimation, the available data variables in the English Housing Survey mean that the control variables differ slightly from the rest of the estimations in the HACT SVB. Whilst most of the same standard variables are included, such as age and income, there is no suitable variable available to capture an individual's religion. In addition to this, SF-12 measures of physical and mental health are not available and thus a variable of "general health" is used to capture both of these. The remaining controls are all consistent with the rest of the HACT analysis.

3.11 Environment

3.11.1 Energy efficiency improvements

These outcomes capture the value of energy efficiency in terms of improvements to a dwelling's EPC rating.

There are three incremental improvements that are valued:

- Energy efficiency improved to Bands A or B (from Band C)
- Energy efficiency improved to Band C (from Band D)
- Energy efficiency improved to Band D (from E, F or G)

The key variable of interest uses the physical survey of the English Housing Survey, where surveyors must record the EPC rating of each household.

The outcomes are intended to be additive – for example, if a household moves from an EPC Band E to a Band A rating, then they should be assigned the summation of all three energy efficiency values.

3.11.2 Pollution

This outcome captures the value of an individual not experiencing pollution.

The key variable of interest uses a survey question from Understanding Society, where respondents must answer the following question:

Does your accommodation experience pollution, grime or other environmental problems caused by traffic or industry?

1) *Yes*
2) *No*

This outcome assigns value to respondents reporting "no" to this question.

In addition to controlling for the standard control variables, measures of both objective air and noise pollution are also included in these estimations.

3.11.3 Buys recycled products

This outcome captures the value of an individual buying recycled products.

The key variable of interest uses a survey question from Understanding Society, where respondents must answer the following question:

How often do you buy recycled paper products such as toilet paper or tissues?

3) *Always*
4) *Very often*
5) *Quite often*
6) *Not very often*
7) *Never*

This outcome assigns value to respondents reporting "always", "very often" or "quite often" to this question.

3.11.4 Recycles waste

This outcome captures the value of an individual separating their rubbish into items that can be recycled.

The key variable of interest uses a survey question from Understanding Society, where respondents must answer the following question:

Do you separate your rubbish into items that can be recycled through your normal rubbish collection always, usually, sometimes or never?

1) *Always*
2) *Usually*
3) *Sometimes*
4) *Never*

This outcome assigns value to respondents reporting "always" or "usually" to this question.

References

Arellano and Bover (1995). Another look at the instrumental variable estimation of error-components models. Journal of Econometrics 68: 29 – 51.

Department for Communities and Local Government. (2013-2019). English Housing Survey, 2013-2019: Household Data. [data collection]. 2nd Edition. UK Data Service. SN: 6805, DOI: 10.5255/UKDA-SN-6805-2.

Fujiwara, D. and Dass, D. (2021). Incorporating Life Satisfaction into Discrete Choice Experiments to Estimate Wellbeing Values for Non-Market Goods. Simetrica-Jacobs Research Paper. [online] Available at https://simetrica-jacobs.com/wp-content/uploads/2021/07/Life-satisfaction-in-DCE.pdf.

HM Treasury (2021). Wellbeing Guidance for Appraisal: Supplementary Green Book Guidance. [Online]. Available at https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1005388/Wellbeing_guidance_for_appraisal_-_supplementary_Green_Book_guidance.pdf.

HM Treasury (2022). The Green Book: Central Government Guidance on Appraisal and Evaluation. [Online]. Available at https://assets.publishing.service.gov.uk/media/623d99f5e90e075f14254676/Green_Book_2022.pdf.

OECD (2013). OECD Guidelines on Measuring Subjective Well-being, OECD Publishing, Paris. Available at https://doi.org/10.1787/9789264191655-en.

Office for National Statistics (2020). Crime Survey for England and Wales, 2012-2019. [data collection]. 2nd Edition. UK Data Service.

Office for National Statistics, Social Survey Division (2020). Wealth and Assets Survey, Waves 1-5 and Rounds 5-6, 2006-2018. [Data collection]. 11th Edition. UK Data Service. SN: 7215, http://doi.org/10.5255/UKDA-SN-7215-11.

Piper (2022). What does dynamic panel analysis tell us about life satisfaction? Review of income and wealth, Early View Online Version. https://doi.org/10.1111/roiw.12567.

University of Essex, Institute for Social and Economic Research (2021). Understanding Society: Waves 1-11, 2009-2020 and Harmonised BHPS: Waves 1-18, 1991-2009. [Data collection]. 14th Edition. UK Data Service. SN: 6614, http://doi.org/10.5255/UKDA-SN-6614-15.