

MAY 2015

THE HEALTH IMPACTS OF HOUSING ASSOCIATIONS' COMMUNITY INVESTMENT ACTIVITIES:

Measuring the indirect impact of improved health on wellbeing

An analysis of seven outcomes in the Social Value Bank

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1. Foreword

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A driving principle for housing associations is providing housing and support services for households on the lowest incomes and living in the poorest areas. These are the people we know have a shorter life expectancy than those living in the richest areas. The extent of this inequality is on a significant scale; on average a difference in life expectancy of seven years¹ - and this is not considering the variation in wellbeing and quality of life experienced during a longer life.

The wide range of support and training provided by housing associations' community investment teams is targeted at addressing the consequences of these imbalances in income and opportunity. For instance the Affinity Sutton Community Foundation, which I chair, aims to do the following: help people into work through our Ready2Work programme, provide training and jobs for over one hundred apprentices, and annually give debt advice to more than a thousand residents. The positive outcomes of community investment activities are well understood. Access to work or training opportunities increases economic activity; participating in shared gardening or community safety programmes develops a sense of neighbourliness and belonging; and volunteering enhances satisfaction from giving something back to the local community.

Yet the beneficial impacts on an individual's physical and mental health from these activities are often overlooked.

We're familiar with the concept that public health challenges can be tackled through improved housing and community engagement projects. But even if this is not a new agenda, making the case to all those involved – health providers, community groups, local authorities, or social housing providers – has been hard. Our aims differ, there is competition for resources between varied activities, and far too often we're not talking the same language.²

The novel method described in this report extends and builds on an existing wellbeing valuation approach, and provides answers to these measurement and communication challenges.

The approach is increasingly influential in the sector and the Social Value Bank report has been downloaded more than 3,000 times since its launch in 2014. As an example, our community investment programme in 2014/15 is calculated to have delivered £70million of social value against a budget of £4million, a social return of 17 times the cost. Using the new values outlined in this report we have calculated that £6.8 million of this was down to the additional health benefits of our community investment activities.

This approach is helping forge discussions between housing and health and we hope other housing associations, as well as the many other organisations working to improve the health of some of our poorest communities, will find it helpful.

2. Executive summary

Affinity Sutton, HACT and Slmetrica have previously deployed the wellbeing valuation approach to create the Social Value Bank, the largest robust and consistent set of monetary values for social outcomes. In the earlier work, the analysis controlled for the effects of health, calculating values that represented the direct effect of outcomes (such as gaining employment) on people's wellbeing.

However, many outcomes might also improve people's wellbeing indirectly, by improving their health, which in turn improves their subjective wellbeing.

This research examines seven key outcomes that are pertinent to housing associations' community investment activity and finds that they all have a significant impact on people's health. A monetary value has been placed on these impacts, and those values have been added to the existing ones for the direct impact on wellbeing. The Social Value Bank will be updated in light of these new values, which capture an additional route by which outcomes deliver improved wellbeing.

The values also act more generally to indicate that outcomes like gaining employment, improving finances, or volunteering could have measureable impacts on health.

Not only will these indications be important for housing associations, keen to understand the impact that they have, but also for those more directly engaged with health, who will be interested in pursuing this line of investigation further, to test these hypotheses using methods that will generate evidence that meets the needs of their sectors.

Consequently, it is hoped that as well as producing values that are immediately useful in the housing sector, the research will also act to stimulate interest across a range of sectors that share at their core an objective of helping people to live happier, healthier lives. Its monetised values can also provide an opening point to conversations, giving people from different sectors a common language to start discussing the findings.

3. Background

In 2014, Affinity Sutton and Catalyst commissioned a ground-breaking piece of research that changed the way the housing sector approaches, assesses and measures its social impact.³ The research resulted in the development of the Social Value Bank, using the wellbeing valuation approach to place robust and consistent monetised values on a set of outcomes. The outcomes were selected for their relevance to housing

providers' community investment activities, and included values relating to employment, local environment, health, financial inclusion and youth work.

The ability to apply the wellbeing valuation approach to housing providers' community investment activities has enabled the sector to quantify and communicate its impact in a way that is consistent with the latest HM Treasury guidance.⁴

Wellbeing valuation

The wellbeing valuation approach offers a way to measure and value outcomes across a wide range of domains in a consistent, rigorous and cost-effective way.

Wellbeing valuation derives robust value estimates in line with the welfare economic theory on valuation and represents the latest thinking in social impact measurement. The approach now features as part of HM Treasury Green Book guidance and OECD guidance on policy evaluation and hence is prominent in government policy making.

The approach involves the statistical analysis of large national datasets from surveys of the UK population, for example the British Household Panel Survey (BHPS).⁵ These surveys include questions on subjective wellbeing where respondents rate how satisfied they are with their life (on a scale of 1-7), along with hundreds of other questions covering their employment status, their health, whether they volunteer, what they do in their leisure time, how they feel about their local area and so on.

Using sophisticated statistical analysis we are able to isolate the relationship between any one of these variables and life satisfaction. Through this analysis we can uncover the average impact a particular outcome has on life satisfaction, for example the impact of regular volunteering on life satisfaction.

We can also access data on income to reveal the amount of money that has the equivalent impact on an individual's life satisfaction thereby giving us a monetary value for that outcome.

Having applied these measurement approaches over the last year, the housing sector has shown that it is now at the forefront of social impact measurement.

The Social Value Bank and supporting tools developed by HACT and SImetrica enable users to understand the wellbeing impacts of their various community investment activities.⁶ This new source of rigorous measurement has resulted in a wide range of uses and benefits to organisations including informed strategic planning, meaningful evaluation of results, communication of social impact, demonstration of Value for Money and adherence to the Social Value Act in procurement practices.

Health outcomes

The work to date using the wellbeing valuation approach has prompted conversations and raised further questions, which seek to delve deeper into the available data and find out more. Significant areas of the datasets analysed for the Social Value Bank contain great potential to provide further valuable insights yet have so far remained untapped. One such area rich with data is health.

This is a particularly important area for further analysis, both because there are good reasons to believe that the outcomes that housing providers target with their community investment activities are also beneficial for health, and because housing providers are increasingly mindful of their potential to contribute to the good health of their tenants and residents, and are keen to maximise the benefits they can deliver in this area with health sector partners. In doing so, housing providers recognise that this will be an area of work that will require them to develop and use evidence and data, in order to understand the impacts of their work.

4. Valuing the health impacts of outcomes

Having previously placed a value on the wellbeing generated by the outcomes in the Social Value Bank, we have now sought to develop this further to consider the important area of impacts on health. Specifically, we have explored several of the outcomes within the Social Value Bank and placed a value on the impact that these same outcomes have by dint of their effects on health.

Most of the values in the Social Value Bank were calculated controlling for any health differences in order to isolate the direct impact of a specific outcome on wellbeing.⁷ That is, in the statistical methodology it is necessary to control for background factors between different groups (say, between the employed and unemployed when looking at the impact of employment on wellbeing) using regression analysis in order to determine the effect of employment only. In developing the Social Value Bank we controlled for all of the main determinants of wellbeing, including income, employment status, health, marital status, education, gender, age, religion, local area safety, housing conditions and social relationships.

Some of the outcomes that are valued in the Social Value Bank, however, may actually have additional impacts on wellbeing through associated improvements in health. Because the original values were calculated controlling for the effects of health, this indirect impact on wellbeing through health is not captured in them; however, the indirect benefits to wellbeing, acting through improved health, can be valued in the same terms as the direct impact. It is also possible to add the direct and indirect values together to create a total wellbeing value without double-counting.

⁴ https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/209107/greenbook_valuationtechniques.pdf

⁵ <https://www.iser.essex.ac.uk/bhps>

⁶ <http://www.hact.org.uk/publications-and-tools>

⁷ Some of the values in the Social Value Bank considered the health effect as part of the direct impact on wellbeing because the benefit itself was primarily through a health mechanism. For example, the exercise variables; football, frequent mild/moderate exercise, walking etc. It is therefore not possible to derive a separate health value for outcomes of this nature.

The new analysis investigates whether outcomes in key areas of life such as employment and perceptions of neighbourhood have an impact not only on wellbeing directly, but also indirectly through improvements in general health, which captures both physical and mental health.

5. Approach

Following the approach used in the wellbeing valuation study of community activities that led to the creation of the Social Value Bank (and detailed in a Methodology Paper⁸), the analysis in this work used regression analysis models that controlled for a range of variables such as age, employment and marital status⁹ to reveal the impact on wellbeing through health.

We calculated the impact of the following **seven outcomes** from the Social Value Bank on **general health**.

Outcome	How is this outcome defined?		Dataset
Full-time employment	Moving from unemployment to full-time employment		British Household Panel Survey (BHPS)
Relief from being heavily burdened with debt	If you are in debt, how much of a burden is that debt?	1. Heavy burden 2. Somewhat of burden* 3. Not a problem*	BHPS
Talking to neighbours regularly	I regularly stop and talk with people in my neighbourhood	1. Strongly agree* 2. Agree* 3. Neither agree/disagree 4. Disagree 5. Strongly disagree	BHPS
Volunteering regularly	Volunteer at least once per month for at least two months		BHPS
Feeling in control of life	I feel that what happens to me is out of my control	1. Often 2. Sometimes 3. Not Often* 4. Never*	BHPS
Access to Internet	Regular access to the internet		Understanding Society
Worried about crime	How worried are you about being a victim of crime?	1. Very worried 2. Fairly worried 3. Not very worried 4. Not at all worried*	Crime Survey for England and Wales

The seven outcomes in this study were selected as ones that are particularly important within Affinity Sutton's community investment programme and where it was felt that it was relatively likely that positive outcomes might be associated with knock-on health impacts that could be identified and valued.

Applying values

A proportionate approach was developed by HACT and Slmetrica to enable housing providers to apply values from the Social Value Bank to their community investment activities and calculate their social impact. This requires data collection to gather evidence that a change has happened and therefore that values can be applied. We apply deadweight calculations to the outcomes to account for the counterfactual in the analysis (i.e., the probability that the beneficiaries would have achieved the same outcome without the housing provider's intervention).

Applying values associated with the outcomes requires a record of the number of people experiencing the change. The required data varies depending on the nature of the outcome and can be collected through surveys or may already be recorded by an organisation.

The outcomes, with the respective survey question in the second column, require the question to be posed to an individual before and after an intervention or programme. This is to capture any change experienced by that individual. An individual that moves from a non-starred answer to a starred answer denotes a positive result. The number of individuals experiencing an outcome is then multiplied by the value of the outcome to calculate the social impact. This same method of application can similarly be used to apply any health values revealed through the analysis from this study.

Importantly, the approach incorporates a measure of deadweight or ‘what would have happened anyway without the intervention’. In the 2014 Additionality Guide, the HCA published average deadweight figures of housing provider community investment based on research of neighbourhood renewal programmes.¹⁰ These deadweight figures are included in the model to prevent over-claiming in a standardised and proportionate way.

Datasets

The health values (as with the values in the Social Value Bank) are calculated through statistical analyses of three large national UK datasets that contain data on wellbeing, life circumstances and health. These datasets include people’s responses to wellbeing questions along with questions on a large number of aspects and circumstances of their lives.

The [British Household Panel Survey \(BHPS\)](#) was a household survey run by the University of Essex that followed the same people over time (panel data). It surveyed 10,000 - 15,000 people each year and there were 18 years (waves) of data. It included (and was representative of) England, Scotland, Wales and Northern Ireland and consisted of a large range of variables covering all aspects of people’s lives.

[Understanding Society \(U Soc\)](#) incorporated and replaced the BHPS in 2010. It follows the same individuals as the BHPS plus about 60,000 new participants and it has added a new set of variables. It is a panel dataset that surveys over 70,000 individuals each year on all aspects of people’s lives. It is representative of England, Scotland, Wales and Northern Ireland and there are currently two years (waves) of data available. Understanding Society is the largest panel dataset in the UK.

The [Crime Survey for England and Wales \(CSEW\)](#) (formerly the British Crime Survey) is a survey on all aspects of crime run by the Office for National Statistics. It contains

data on reported and unreported crime, police and criminal justice. It surveys about 40,000 households each year as a repeated cross-section and is representative of England and Wales. It is the largest crime-related survey in the UK. We use the two most recent years of data since this is when questions on subjective wellbeing were introduced.

6. Results

We find that all seven outcomes are positively associated with general health in a statistically significant way after controlling for all of the main determinants of health and reverse causality (where possible). The Annex presents the statistical results while the table below shows the values estimated for the seven outcomes.

Outcome	Overall value
Feel in control of life	£15,894
Full time employment	£14,433
Not worried about crime	£12,274
Relief from being heavily burdened with debt	£10,836
Talks to neighbours regularly	£4,511
Regular volunteering	£3,249
Access to internet	£2,413

Note: The overall value shown in the above table include both the health value calculated in this project and the direct (non-health) impact on subjective wellbeing from the earlier work.

The health value of these impacts is estimated using the overall value for good general health from the Social Value Bank (see Annex for more details). The health values found in this study are all smaller than the respective direct impacts on wellbeing for each outcome, although in theory they can be larger if the main effect of the outcome on wellbeing is through health. These values have been added to the existing wellbeing values, and due to the ways in which the two sets of values were calculated, this does not constitute double-counting. Together, they provide a fuller understanding of the social impact created. The new combined values presented in the table above can be used in place of the original wellbeing values from the Social Value Bank for these seven outcomes.

¹⁰ http://cfg.homesandcommunities.co.uk/sites/default/files/aboutus/additionality_guide_2014_full.pdf

Direct wellbeing values of seven outcomes from the Social Value Bank and additional value of indirect impact on wellbeing through health



Discussion

We assess the impact of these outcomes on general health through regression analysis controlling for all of the main determinants of health to get the best estimate of cause and effect relationships possible given the structure and type of the data.

The identified health values offer additional insight to support a more comprehensive evaluation of the social impact of seven outcomes in the Social Value Bank. We now have a greater understanding of how the experience of these outcomes benefit individuals and the different ways wellbeing is improved.

The magnitude of the indirect impact on wellbeing through health varies across the seven outcomes that make up this study. Regular volunteering and full-time employment have the greatest impact on health proportionally, where the indirect health impact is 38% and 34% of the direct wellbeing impact respectively.

The measure of health we have used in the analysis captures effects on both physical and mental health. The health impacts observed in this study could reflect improvements in mental health through, for example, reductions in stress or increases in feelings of purpose and self-esteem or the positive benefits from increased social interaction with other individuals. Outcomes such as full-time employment and volunteering may also include physical health improvements as these changes in life circumstances could be coupled with lifestyle changes, a new routine and increased physical activity.

These insights provide further evidence of how a housing provider can improve the quality of life of tenants and residents through its community investment programme. If tenants experience these outcomes, we now have evidence that the effects can ripple out into other areas of people's lives.

Further research

This study has demonstrated the potential of using the wellbeing valuation approach to examine the impact on wellbeing of social outcomes, as mediated through improvements in health. Only a subset of the potential values within the Social Value Bank have benefited from this additional analysis at this time; a further study to examine the health impacts of the remaining relevant outcomes in the Social Value Bank would reveal the extent to which each of those also shows a health-related impact on wellbeing.

Furthermore, there is also the potential to investigate the impact of housing associations' core housing activity on wellbeing, as mediated through health. It has long been known that housing and health are related, and this would provide valuable information to contribute to that body of knowledge.

As the values calculated are data-driven, they arise from the analyses undertaken and provide novel insight into the impact on health of various outcomes that have already been found to have non-health impacts on wellbeing. The relative differences between these variables, therefore, also form a useful set of indicators that could be valuable as a starting point in any future research into health impacts of social interventions.

Moreover, whilst the metrics adopted in this research may not be those that health sectors would use to assess the impact of interventions, because they are values derived from robust analysis of large datasets they should at least be treated as being indicative of health benefits being achievable, and should provide those sectors with the confidence to work more closely with the housing sector to build the evidence base around the health impact of a range of social interventions. They might also provide indications of which areas to prioritise research upon: those areas that show the strongest health impacts through this analysis would merit early investigation that is designed to create measures that meet the needs of all sectors to understand the impact of activities.

The present analysis uses a measure of general health that covers both mental and physical health. An examination of which of these predominates in which situations would be another interesting topic for future research.

7. Deployment in practice

Having had access to the values generated in this work prior to publication, Affinity Sutton has already had some experience of how these can be relevant in practice. In one employment scheme run in 2014/15, 904 individuals found full-time employment. The resultant social impact calculation is shown below:

Associated outcome/ value	Full-time employment
Evidence you need to apply the value	Record of individuals moving from unemployment into FT employment
Which survey? Or is it an activity value?	Employment survey
Average person value	£14,433
No. of participants	904
Total value	£13,047,432
Total minus deadweight	£11,090,317

The same data collection process required to calculate a scheme's wellbeing value from the existing values in the Social Value Bank can be used to easily calculate the increased value, featuring the health impact alongside the direct wellbeing impact.

Affinity Sutton has also reported that the process of participating in this research has itself acted to raise awareness within the organisation of the potential for community investment activity to have health impacts. Alongside its formal quantitative work to measure and value the impact of its activity, consciousness of this novel valuation method has prompted a broader consideration of the benefits at a practical level. For example, in conversations with service users there has been a growing openness to the possibility that impacts can be experienced in different ways.

These values will be added to the Social Value Bank and be another step towards a fuller understanding of the social impact of community investment interventions and thereby supporting the housing sector to take a broader view on how and where they create value. This will contribute to the increasingly sophisticated view that housing associations are able to take regarding the impact of their work; when undertaking strategic planning of community investment programmes, housing associations will now be able to work on the basis of a more thorough evidence base about the relative impacts of different outcomes.

In the past if the aim of an intervention was to tackle physical or mental health issues, it is likely a specific project would have been delivered to address these issues. This analysis, however, reveals that existing interventions with an alternative primary focus have the potential to make significant impacts on people's general health. This could influence the way that community investment programmes are designed or indeed provide evidence to inform which partners could be approached to collaborate on specific projects; even where a project has an alternative primary outcome (such as providing access to employment or digital inclusion), if that outcome has been shown to have a beneficial impact on health there could be merit in having discussions with relevant public health professionals.

While health interventions have always been on the agenda of housing providers in traditional areas such as compliance with health and safety requirements, managing fire risk and providing warm, safe homes, this has largely been to prevent health problems rather than to improve health per se. This research has revealed that areas of investment not typically associated with tenant health also have an impact on health; this presents an opportunity to capitalise on this association. If it was deemed a priority to improve the health of tenants and residents then the option to include an additional health element within an employment or volunteering programme could work to maximise any potential health benefits. Conversely, a health programme could potentially include a focus on employment or volunteering type outcomes to help tackle health problems or inequalities. Naturally, these types of development would require robust evaluation to ensure that the benefits are accrued as expected in programmes that are designed to address dual elements, but the evidence from the current study suggests that it is an area that would merit trials.

8. Annex: Methodology

Statistical models

We use logistic regression models to determine the association between each outcome and health after controlling for a range of important determinants of health. The regression models take the form:

$$H_{it} = \alpha_{it} + \beta_1 Z_{it-1} + \beta_2 X_{it} + \varepsilon_{it} \quad (1)$$

where H_{it} is the health status of individual i at time t ; Z_{it-1} is the outcome of interest (for example talking to neighbours regularly), which is lagged by one year where possible¹¹ (see discussion below); X_{it} is a vector of control variables; and ε_{it} is the error term under the standard assumptions. Health is measured as a binary variable, which equals 1 if the respondent reports their health as being “good” or “better” (these are the top two categories on the 1-5 general health variable scales in the BHPS, U Soc and CSEW datasets). In addition to controlling for the main determinants of health, where possible we also lag the outcome variable Z by one year to eliminate bias due to reverse causality. As we discuss below on a number of occasions there were not sufficient observations to run the model with a lagged term and lagging was only possible for the BHPS and U Soc datasets as the CSEW does not have a longitudinal element to it.

Following Fujiwara et al (2014)¹² we use the following control variables in the health model:

- Income
- Age
- Gender
- Attended higher education
- Employment status
- Marital status
- Number of children
- Local area safety
- Housing quality
- Social networks
- Region fixed effects

These variables were derived and determined from an extensive review of the health economics literature, performed in Fujiwara et al (2014).

The coefficient on the outcome (β_1) provides an estimate of the association or impact of the outcome on the likelihood of reporting good health (measured in terms of changes in log odds ratios) after controlling for other determinants of health. To attach a monetary value to this we use the values for good health derived using the wellbeing valuation method in the Social Value Bank. The monetary value of the health impact of outcome Z is estimated as follows:

$$\text{Value of health impact} = \beta'_1 * WV(\text{Good Health}) \quad (2)$$

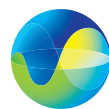
where β'_1 is the probability estimate of β_1 (rather than the log odds ratio impact) and $WV(\text{Good Health})$ is the wellbeing value of good health (from the Social Value Bank), which is on average £20,141 per annum. The probability estimate is used so that we can apply the value of good health to the predicted likelihood of reporting good health due to the impact of the outcome.

In this study we employ multivariate analysis techniques. These are methods that control for as many of the possible differences across different groups as possible. In this case we control for all of the main determinants of health. The empirical evidence on health is such that we now have a fairly well-determined set of factors that all regression models should capture. Although in this type of technique we can never control for all factors because some will be unobserved, regression analysis is the most commonly used technique in wellbeing analysis and health models of this kind in academic journals and the policy literature.

Results

Outcome	Dataset	Coefficient	Probability impact	Health value
Full time employment	BHPS	0.880***	18.20%	£3,666
Feels in control of life	BHPS	0.812***	17%	£3,424
Relief from being heavily burdened with debt	BHPS	0.340***	6.90%	£1,408
Regular volunteering	BHPS	0.226***	4.40%	£892
Talks to neighbours regularly	BHPS	0.157***	3.30%	£663
Access to internet	US	0.107**	2.70%	£538
Not worried about crime	CSEW	0.164**	1.90%	£401

Notes: Logistic regression models with heteroskedasticity-robust standard errors. *** 0.01 significance level, ** 0.05 significance level. One year lag was possible for ‘full time employment’ and ‘relief from being heavily burdened with debt’. Probability impacts signify the increase in likelihood of reporting good health and are calculated at the sample mean values of the other covariates.



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