



Wellbeing Programme: Evaluation and Learning

‘A Guide to Cost Benefit Analysis’

December 2013

Enter 

Introduction

Introduction

Do you say this sort of thing when asked to describe your organisation?

- We do vital care and support work in the community.
- We fill in the gaps left by public services.
- We support people who are highly excluded and marginalised.
- We build the confidence and capacity of individuals to cope with what life throws at them.

These are very common statements for voluntary and community groups to make about their work, and they are almost always, without exception, very true. But how do you prove it? You may think the outcomes of what you do are so intangible they cannot have a monetary value placed on them. To answer this question, the Ecorys team have put together a quick guide to Cost Benefit Analysis (CBA), to show you ways to measure the immeasurable!

This guide is intended to provide Wellbeing portfolios (2013-2015), some of whom have requested an introduction to CBA, with an overview to aid understanding of the method. The guide can be used as a resource for portfolios who may be deciding whether a CBA is the right evaluation approach for them or for those who just want to know more about the process as well as to enhance understanding of the CBA being undertaken by Ecorys as part of the national evaluation of the Wellbeing Programme.

Ongoing Support

If you have any queries about CBA or would like further information about this guide, please get in contact with Andrew Bryce at Ecorys:

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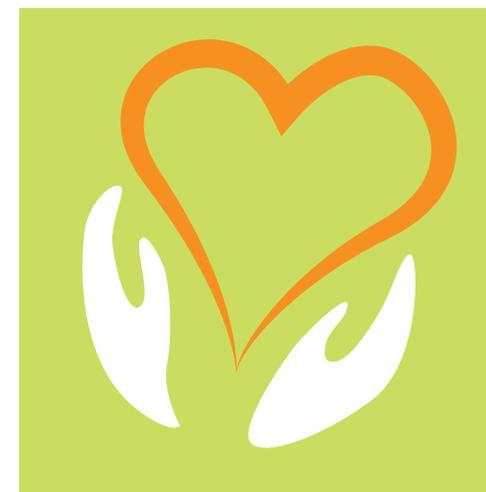




About Cost Benefit Analysis (CBA)?

CBA is a method of evaluating the extent to which (if at all) the benefits to society of a project, programme or intervention exceed its costs. Undertaking a CBA requires the placement of value on additional costs and additional benefits which have occurred as a result of the intervention which is being analysed.

CBA considers both direct costs such as the cost of running a project and indirect costs such as costs to the public sector due to on-going support following on from an intervention. In addition to financial costs and benefits, CBA also includes those costs and benefits which are not directly measured in monetary terms; for example 'in-kind' contributions including volunteer time, and benefits such as improvements in quality of life.



Why should I do a Cost Benefit Analysis (CBA)?

In an increasingly competitive environment, it is vital to quantify not only what you do, but also how many people you reach, how effective you are at what you do, and to place a value on the services you deliver.

CBA is a powerful method of examining the impact of an intervention because it goes beyond simply reporting on the intervention impact by offering insight into the balance between the intervention value against its related costs.

Having the evidence to demonstrate value for money is often an important consideration for funding bodies when making decisions on the types of initiatives to fund. Commissioners, grant making bodies and charitable funders alike are asking for more and better impact measures for every penny they disburse. A CBA is able to provide this type of information by placing a value to society on the types of services delivered against the costs of their implementation.

CBA is also a useful tool for organisations when considering their strategic planning in order to focus their resources to ensure the highest rates of return on the money spent.





When should I do a Cost Benefit Analysis (CBA)?

Before an intervention: A CBA can be carried out prior to an intervention being implemented in order to compare different project options and to see what the most cost effective approach would be. This type of CBA is typically based upon project forecasts and targets that are expected to be achieved.

After an intervention: A CBA can also be undertaken at the end of an intervention to demonstrate the overall impact that the intervention has had and to determine whether the project was a sound investment decision. This type of CBA is typically based on evidence that is gathered to demonstrate the actual outcomes achieved.



Who can do a Cost Benefit Analysis (CBA)?

CBA is used by a variety of organisations in the public, private and voluntary sectors. CBA can be carried out on a whole programme of activity with a national remit as well as on a locally based project.

In order to carry out a CBA, you will need to work with individuals who have both qualitative and quantitative research capabilities, plus economic skills, including knowledge of a range of economic principles which have to be factored into the CBA calculation. In particular individuals undertaking a CBA need to be able to conceptualise the impacts and outcomes of project activity as well as be able to search for and input financial proxies.

Top Tip

If you are thinking of combining a number of project CBA's in order to give you an overall CBA for your portfolio or programme, you will need to make sure you adopt a consistent CBA approach across all projects and consider any potential overlaps and double-counting between projects (this would be more of an issue if your projects were targeting the same areas or populations/groups of people).

We recommend that you start with the higher level analysis and develop your CBA framework at the portfolio/programme level then you can see how all of the different projects fit together (and whether there is any overlap or interaction between them) and in turn, plan how to collect the data and analyse the impact on that basis. If there is a lot of overlap/interaction it might be better to do the analysis at this higher level instead, e.g. collecting data on the benefits of all of the projects in total rather than doing separate analysis for each individual project and then finding the potential for overlap is to big to be able to simply add things up.

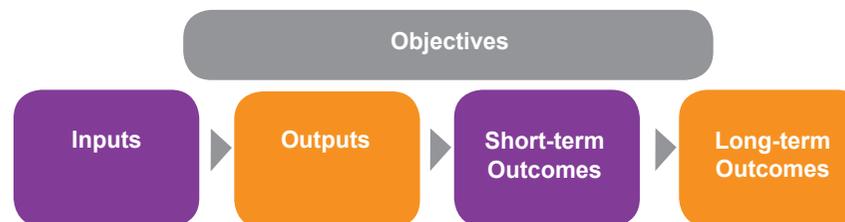


Step 1: Developing the framework

The costs and benefits of an intervention will vary depending upon the type of project and the nature of activities or support delivered. Generally the CBA will be structured around the identified outcomes that an intervention aims to achieve and the costs associated with delivery.

When considering the effects of the intervention it is important to go beyond the outputs (or activity) which will be delivered and think about the outcomes (or consequences) of this. A useful way of doing this is to set out the underlying theory of change in the form of a logic model which is a graphical representation that summarises how the inputs available would be used to deliver a range of outputs which, in turn, would be expected to generate a range of outcomes (and impacts).

The logic model also helps to understand how different possible outcomes relate to each other (i.e. the logical sequence of effect), which helps to identify what benefits to include in your CBA. An example logic model template is provided below, and a worked example of this is set out in the example of a CBA (see page 11).



It is important to consider all costs and benefits associated with the intervention, including those impacting upon:

- **Funders:** such as Government Departments, the Big Lottery Fund or individual donors.
- **Participants:** As examples participants might be people taking part in a weekly walking group, children attending a healthy eating cookery session or isolated older people being visited by a volunteer befriender.
- **Partners:** A partner would be any organisation or individual that supports delivery, for example volunteers, specialist support organisations or referral agencies such as GPs.
- **The State:** The outcomes experienced by participants may result in a change in demand for services or support provided by the State/public sector (with associated cost implications), for example improved health could be linked to reduced visits to the GP or reduced hospital admissions, while training may help individuals move off benefits and into work.
- **Wider society:** Social benefits such as increased community cohesion or welfare effects for the wider community/society should also be considered.

In order to form a framework for the analysis, the costs and benefits experienced by each stakeholder should be listed along with details of the evidence which is available to quantify/value these effects.

Step 1: Developing the framework? Step 2: Calculating the costs Step 3: Calculating the benefits Step 4: Completing the analysis

Step 2: Calculating the costs

Most costs are already expressed in monetary terms. Other inputs can be valued using relevant market prices (such as wages or rental values). The following types of cost should be considered:

- **Capital costs** such as facilities or equipment used.
- **Revenue costs** such as staff costs (including pension and national insurance costs), payment of expenses and costs associated with on-going delivery such as costs of making a referral to another service. Costs to participants incurred as a result of taking part in activities, such as travel costs or costs of childcare should also be included.
- **In-kind costs** such as volunteer time which could be valued using a wage rate relevant to their level of skill involved; for average earnings of different rates of pay see, the Office for National Statistics (2011), Earnings by Qualifications¹.



¹http://www.ons.gov.uk/ons/dcp171776_229888.pdf

Step 3: Calculating the benefits

It is important to try to only include those benefits which have emerged as a result of the intervention. It is also necessary to exclude benefits which would have happened anyway.

Typically, the outcomes/benefits of project activity will be identified on the basis of feedback from participants as well as staff and volunteers who have been involved with running activities. This might include quantitative survey results as well as qualitative interviews and observational data. Survey results demonstrating impact can also be linked to longer-term health and economic outcomes using secondary research evidence. The value of some benefits can be easily identified, for example a beneficiary finding employment as a result of project activity can be valued by the gross earnings they subsequently receive. However other benefits are more difficult to value, for example beneficiaries feeling less isolated as the result of a project activity. In order to value these benefits it is necessary to examine secondary sources in order to place a value on them, this might include the cost of equivalent provision to provide the same benefit for example the cost of a one to one counselling course or the cost of going to the gym.

For wellbeing projects, many of the outcomes achieved are not easily expressed in monetary terms. One approach to valuing these outcomes is to consider the likely effect on demand for other services/support. For example, if an intervention helps participants to improve their health this is likely to reduce their demand for healthcare services. The Personal Social Services Research Unit provides details of the unit cost of Health and Social care services² which can be used to value a reduction in demand for healthcare associated with participation.

Where feasible, a CBA should take account of any unintended outcomes of an intervention, which may be positive or negative. For example, a project helping older people become more active may well have a positive impact on physical wellbeing, but may also lead to a higher number of falls among participants, so any cost associated with these negative impacts should be included in the CBA. Beneficiaries might also take up new services increasing demand for services to which they have been referred.



²<http://www.pssru.ac.uk/project-pages/unit-costs/2012/>



Step 4: Completing the analysis

When calculating costs and benefits, it is important to take into account a number of underlying principles. These might include the following:

- **Deadweight:** It is possible that some of the benefits identified would have occurred anyway in the absence of the intervention; as mentioned above, this “deadweight” should be removed from the CBA. There are a number of ways to calculate deadweight which can range from the use of a comparison or control group to a self-reporting approach where participants are asked to report whether they would have experienced these outcomes anyway (i.e. without the intervention). Other options include asking project workers to make a judgement on the level of deadweight (e.g. based on case histories or previous experience) or comparing the outcomes achieved by the intervention with those of the ‘business as usual’ approach.
- **Substitution effects:** If an intervention is designed to help people into jobs it is possible that participants will secure jobs at the expense of others (with the size of the substitution effect dependent on the number of jobs available)³. It is generally assumed that such effects would diminish over time and DWP guidance recommends that substitution effects are included only in sensitivity analysis.
- **Wider benefits:** Spending on a health and wellbeing initiative may have positive effects in other areas, for example a healthier and happier population may result in less working days lost to absence and benefits to the state in terms of higher tax revenue. The CBA framework will need to ensure that it incorporates any wider benefits. These effects can be identified through participant feedback on the impact of project activity on their lives or communities. However, these impacts can be more difficult to measure.
- **Timing:** Many of the benefits incurred as a result of the programme will take many years to come to fruition, while other benefits may be more immediate but will not last as long, so the CBA will need to take into account these variations; costs and benefits incurred in future years should be expressed in present values (where costs and benefits accruing in the near future are given higher weighting than those accruing in the more distant future this is because people tend to value effects more highly the sooner that they take place). To calculate future impacts it will be necessary to discount future values, this can be achieved using Excel Net Present Value function in the formula tab using the financial function button.

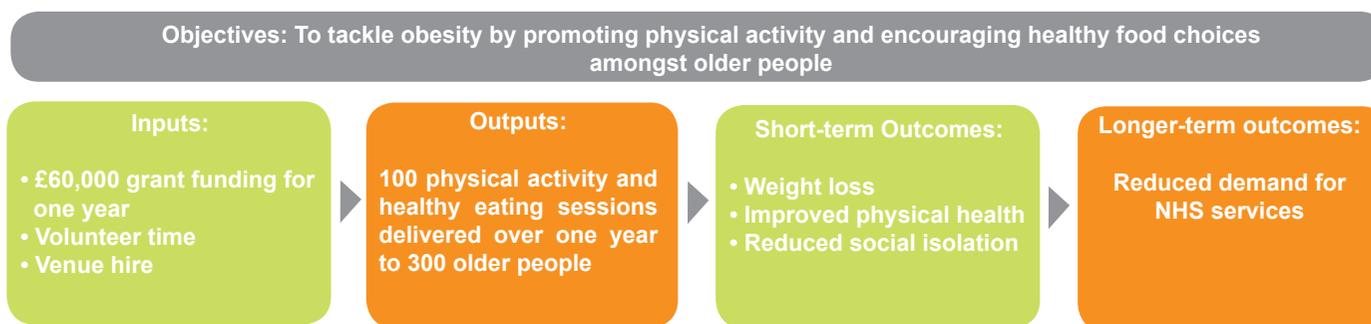
Having taken account of all the above adjustments, the CBA is calculated by adding together all of the identified costs and all of the identified benefits in present value terms. Following analysis of costs and benefits, a cost benefit ratio can be calculated by dividing the present value of benefits by the present value of costs. This figure indicates the return for every £1 of investment in the intervention.

³Similarly, if an intervention is designed to help businesses to improve their performance it is possible that participants will secure increased sales/turnover at the expense of competing firms. This effect (termed displacement) is unlikely to be relevant for the Wellbeing programme.

Example of Step 1: Developing the framework

Below we work through a fictional example of a CBA of a grant funded health and wellbeing project that ran for a year. The overall objective of the project was to work with older people to tackle obesity by delivering a range of physical activity and healthy eating classes including a walking group, cookery classes, Zumba and Yoga sessions.

The project was supported by three volunteers and delivered in partnership with a local charitable organisation that provided free access to a building to deliver the classes in. The project delivered 100 one hour sessions and a total of 300 older people participated in the project over the course of the year.



⁵See Supplementary Green Book Guidance for further details on Optimism Bias, https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/191507/Optimism_bias.pdf



Example of Step 1 **Example of Step 2** Example of Step 3 Example of Step 4

Example of Step 2: Calculating the costs

The table below sets out a framework for analysing the costs of the project.

Costs	Measurement	Valuation	Notes
Direct costs of the intervention - cost to the funder	Amount of grant funding provided for the project.	£60,000	This was used to cover costs such as staff wages (including pension and national insurance contributions), equipment costs and volunteer expenses.
Direct costs of the intervention - other contributions	Amount of match funding and in-kind contributions.	£25 per session for a total of 100 sessions = £2,500	The church hall was made available for free so the cost is calculated at the market value of the hall multiplied by the number of sessions delivered.
Direct costs of the intervention – volunteer time	Volunteers provided a total of 300 hours of time to support the project.	300 hours x £8.37 = £2,511	This was costed using the median wage of a Sports and Leisure Assistant ⁴ as this occupation most closely resembled their volunteer role.
Indirect costs of the intervention – costs to other service providers	Participants reported accessing additional services as a result of sign-posting by project staff.	300 x 25% x £50 = £3,750	This is calculated based upon the finding that a quarter of participants reported being made aware of, and then accessing, other free services. The cost to the service providers concerned is estimated at an average of £50 per person.
Costs to participants as a result of their involvement in the programme	Additional costs include transport costs to access the project and costs of paying for temporary carers (where the participant is a carer for another person).	Travel and caring costs £3,000	An average cost is calculated using local bus fares and other expenses.

⁴This figure is taken from ONS (2011), Earnings by Qualification, http://www.ons.gov.uk/ons/dcp171776_229888.pdf



Example of Step 3: Calculating the benefits

The table below sets out an example of a framework for the reported benefits of the project.

Benefits	Measurement	Valuation	Notes
Participants reporting weight loss	Using baseline and follow up questionnaires, 80% of participants reported an improved BMI score which would not have occurred without the project.	$300 \times 80\% \times \text{£}4.65 \times 45 =$ £50,220	Project activity is delivered at no cost to the participant. It is assumed that each participant attends 45 sessions on average during the year. However, this can be valued on the basis of the market price for similar services. Cost of Slimming World session = £4.65 for participants aged over 50. (http://www.slimmingworld.com/joining-a-group/special-offers.aspx).
Participants reporting benefits of reduced social isolation and increased interaction with other older people	Survey data showed a reduction in loneliness and isolation for 80% of participants, all of whom reported that this was due to the project. The value of this benefit could be calculated using a stated preference 'Willingness to Pay' approach ⁵ to estimate the value of health and wellbeing outcomes to individuals (i.e. on average, how much would a person be willing to pay to attend the sessions?)	$300 \times 80\% \times \text{£}3.50 \times 45 =$ £37,800	80% of participants reported that they had benefited from reduced loneliness/isolation as a result of the project and would be willing to pay on average £3.50. It is assumed that each participant attends 45 sessions on average during the year.
Reduction in use of NHS services as a result of participants reporting improvements in physical health	Participant surveys demonstrate a reduction in the number of GP visits and 50% of those who experienced a decrease feel that this is due to the project.	$300 \times 50\% \times \text{£}36 \times 3$ less visits per year = £16,200	Unit cost of a GP visit = £36 assuming a 12 minute visit time (source: PSSRU - http://www.pssru.ac.uk/index-kent-lse.php)

⁵Further details on the Willingness to Pay model can be found in the HM Treasury Green Book, Appraisal and Evaluation in Central Government, https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/220541/green_book_complete.pdf

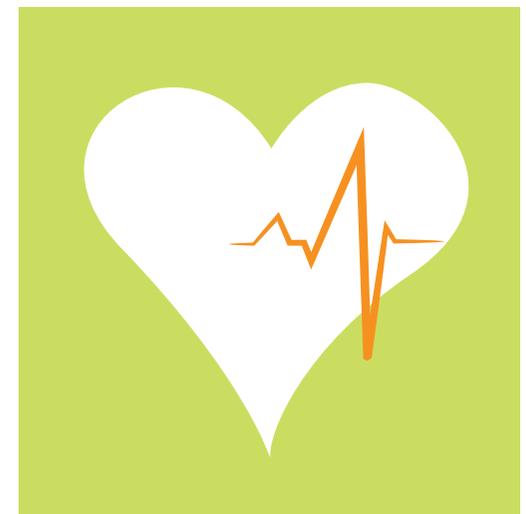
Example of Step 4: Completing the analysis

The total costs of the intervention are calculated as **£71,761**.

The total benefits of the project are **£104,220**.

The cost benefit ratio for the project is therefore **1.45:1**.

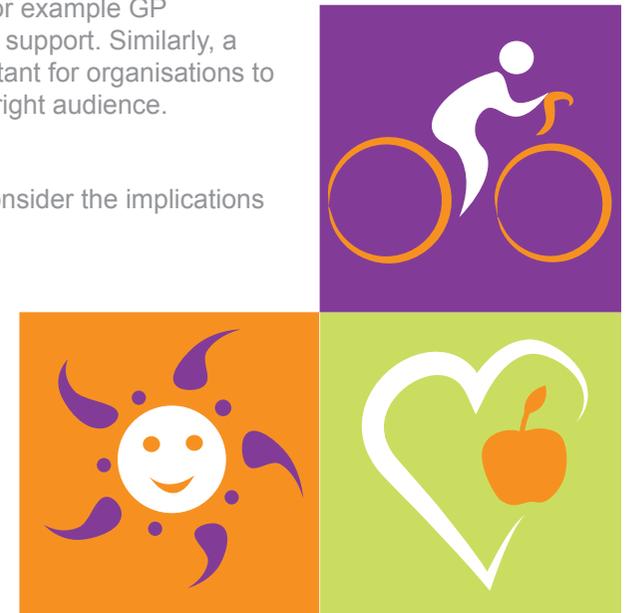
In other words for every **£1** invested, **£1.45** worth of benefits was generated by the project.



Top Tips - sharing CBA findings

Top Tips – sharing CBA findings

- The findings of a CBA can provide very useful evidence for a range of decision makers looking at whether to fund a particular initiative, and the value for money they will receive from this. However, when sharing the findings of a CBA, it is important to be clear and transparent about the assumptions made in the CBA, and where the sources of data have come from. Assumptions should also include analysis of the possibility for optimism bias. Optimism bias occurs when project appraisers are overly optimistic about the impact of their project⁶. As such, projects should always be conservative when placing values on benefits of an intervention.
- The value of a CBA should be seen as a whole process rather than just an end result. When providing the results of a CBA, it is therefore important to ensure that potential audiences are made aware of the whole process of the CBA rather than just being presented with a final CBA figure. Summaries of the CBA should reflect each stage of the process and the rationale involved.
- It is important to understand the audience for a potential CBA and the aspects which they will be most interested in. For example GP commissioners may be most interested in savings made on the basis of costs avoided in accessing healthcare related support. Similarly, a local authority funder will be more interested in the cost benefits that affect local communities. As such, it will be important for organisations to tailor the findings of their CBA appropriately, in order to ensure that the relevant messages are being conveyed to the right audience.
- In addition to using the findings of a CBA to demonstrate value for money to potential funders, organisations should consider the implications of the findings in order to influence their strategic planning.



⁶See Supplementary Green Book Guidance for further details on Optimism Bias,
https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/191507/Optimism_bias.pdf



Useful links and resources

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Further reading and guidance on Cost Benefit Analysis can be found below:

- Further Reading: HM Treasury, The Green Book – Appraisal and Evaluation in Central Government
https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/220541/green_book_complete.pdf
- Fujiwara, D, The Department for Work and Pensions Social Cost Benefit Analysis Framework
https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/214384/WP86.pdf
- Fujiwara, D and Campbell, R, Valuation Techniques for Social Cost Benefit Analysis: Stated Preference, Revealed Preference and Subjective Wellbeing Approaches
https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/209107/greenbook_valuationtechniques.pdf
- Supplementary Green Book Guidance (topics include health, crime, the environment)
<https://www.gov.uk/government/collections/the-green-book-supplementary-guidance>
- Personal Social Services Research Unit, Unit Costs of Health and Social Care 2012
<http://www.pssru.ac.uk/project-pages/unit-costs/2012/>
- Office for National Statistics, various datasets
<http://www.ons.gov.uk/ons/index.html>
(including Earnings by Qualification: http://www.ons.gov.uk/ons/dcp171776_229888.pdf)
- How does CBA compare to SROI?
https://eprints.mdx.ac.uk/7104/1/The_ambitions_and_challenges_of_SROI.pdf

Useful websites

Personal Social Services Research Unit: <http://www.pssru.ac.uk/index-kent-lse.php>