

YOUTH INVESTMENT FUND: LEARNING AND INSIGHT PAPER TWO

Background to the YIF economic simulation model

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INTRODUCTION

The Youth Investment Fund is a joint investment between the Department for Digital, Culture, Media and Sport and The National Lottery Community Fund of £40 million to expand delivery of open access youth services in six regions of England, and to enable funded organisations to invest in their own development to increase the sustainability of this youth provision. The three-year programme (2017-2020) is providing new opportunities for young people to get involved in their communities and aims to support the personal development of hundreds of thousands of young people across England, building their confidence and supporting their transition to becoming happy, healthy and economically active adults.

As part of the investment in local voluntary and community youth organisations, the funders allocated £1 million to a learning project led by New Philanthropy Capital (NPC) in partnership with the Centre for Youth Impact and a wider consortium (footnote with names). The learning project commenced in May 2017 and is due to be completed in January 2021. It aims to:

- Build a base of knowledge and insight into young people's engagement in informal and non-formal provision, and how it makes a difference to their lives.
- Co-develop a shared approach to evaluation that is adaptable and appropriate across all provision.
- Leave the sector with what they need to self-evaluate long after YIF funding has ended.

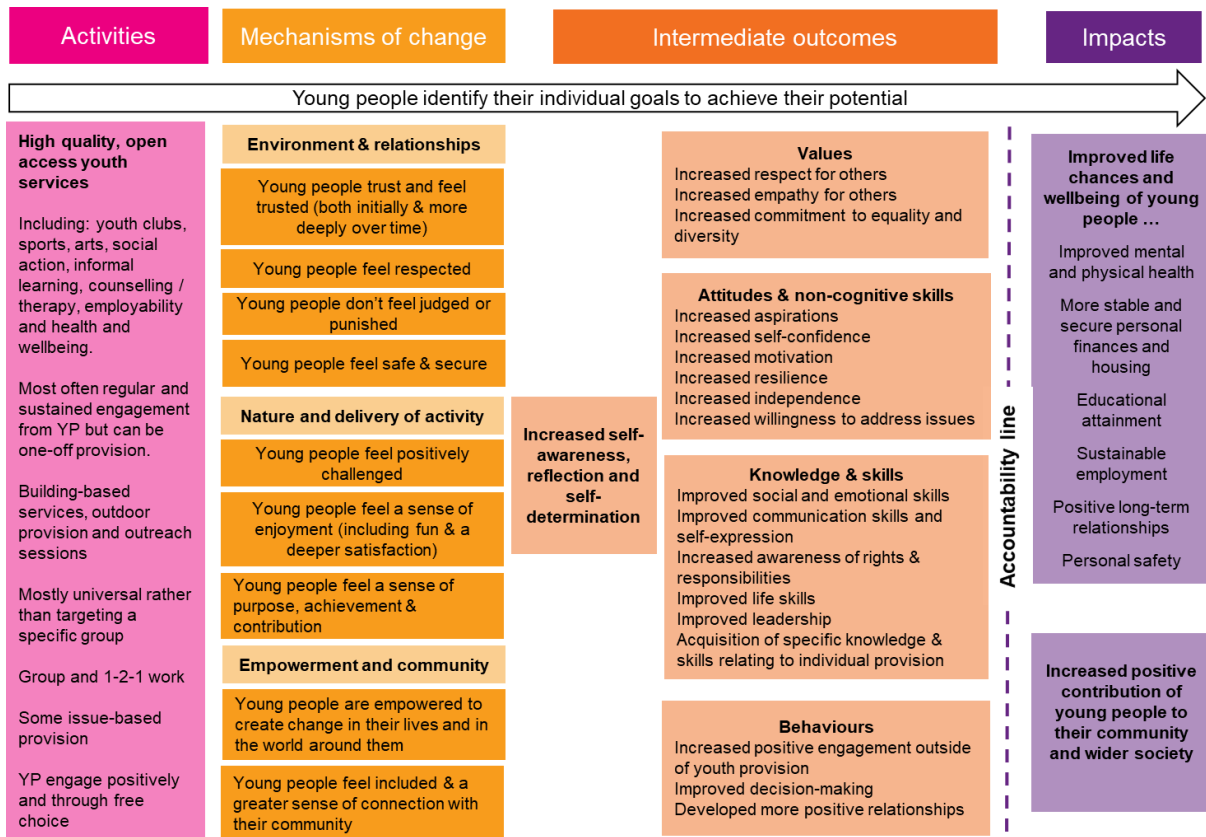
What is the aim of this paper?

The aim of this research is to inform the economic strand of the [Youth Investment Fund's \(YIF\) learning and evaluation](#) work. We are interested in the different methodologies used in economic evaluations of open access and targeted youth programmes. This includes what sorts of benefits (outcomes) are included in evaluations, how these are measured and valued, and how these compare to programme costs.

The content of this review will help inform the development of an economic simulation model for the YIF. The economic simulation model will be built on the YIF theory of change in Figure 1, particularly the core intermediate outcomes, which are being measured across many YIF grantees using the YIF shared outcome measurement tool.

The approach is set out in detail in [YIF Insight Paper 1](#), A shared evaluation framework for open access youth provision.

Figure 1: Youth Investment Fund theory of change



This review is not intended to reflect the technical requirements of the government's [Green Book](#)ⁱ on cost-benefit analysis. However, we hope to illustrate the different ways evaluators have approached the challenge of estimating the economic value of youth programmes, and in doing so, further develop our own logic for the YIF economic simulation model.

ⁱ Central Government Guidance on appraisal and evaluation, The Green Book: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/685903/The_Green_Book.pdf

OVERVIEW OF PROGRAMMES REVIEWED

We have reviewed economic evaluation papers and four evidence databases from the UK, USA and Ireland estimating the potential economic value of youth programmes. The full list of papers reviewed is on page 20.

The economic analyses we reviewed cover a range programme types, including open access youth services and youth clubs, open access programmes, and targeted programmes that focus on specific groups or outcome areas. Targeted programmes include school based social and emotional learning, mentoring in the juvenile justice sector, and programmes targeting substance misuse.

In addition, some of the analyses focused on the value of specific activities, for example, sports or volunteering.

The literature from the USA focuses on the economic value of targeted programmes, such as those addressing 'juvenile delinquency', rather than open access youth clubs and youth services in general. This limits applicability of this research to the YIF grantees.

Non-targeted services or programmes focused on a wide range of outcomes, including self-confidence and self-esteem, social skills, educational attendance and engagement, health and wellbeing, as well as more specific outcomes around, for example, anti-social behaviour, or substance abuse.

What do we mean by the 'value' of youth work?

Youth work can bring benefits both directly to the young people themselves and indirectly to the broader community. Such benefits are desirable and hence have value, since anything (or nearly anything) that is desirable can be ascribed a monetary value that signals its relative value compared to other things. Not all things of value can be bought and sold, but that doesn't mean there isn't (at least theoretically) a monetary equivalent of that value. In considering the value of youth work we are seeking the best way to estimate the relative worth of youth work.

Who values youth work?

Anything of value has to be valued by someone. The literature suggests that the value of youth work can accrue to:

- individuals who benefit from participating in youth programmes. This covers both the intrinsic value of the experience or capabilities developed, and the future earnings or improved life chances that flow from participating in youth programmes;
- the local community which benefits from pro-social behaviour (and reduction in anti-social behaviour) fostered by youth work; and
- taxpayers, represented by government, who benefit indirectly from the 'soft' skills that youth work cultivates. This includes lower public spending from reduced anti-social behaviour or use of public services, more positive life choices by young people and increased tax revenues resulting from improved lifetime earnings.

Defining ‘monetary’ vs ‘non-monetary’ value

As noted above, while in theory anything of value can be converted to a monetary value, in practice this is not so easy. Sometimes the outcomes of youth work, like changes to young people’s future earnings or public spending savings, can be readily quantified in terms of money. Other outcomes, like increased self-esteem or higher levels of overall life satisfaction, are not so easily converted to money. In this paper we refer to these as ‘non-monetary’ values, though others might refer to these as ‘intangible’ benefits or ‘subjective wellbeing values’. They relate primarily to the intrinsic value of feelings, skills and experiences.

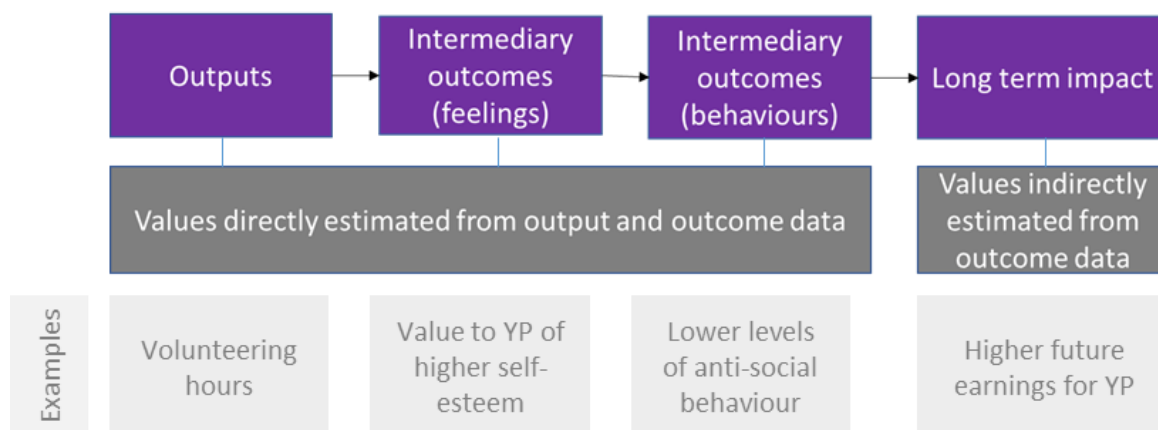
It is important to remember that just because an outcome might be ‘non-monetary’, because it doesn’t directly represent a public spending saving or an income boost to the individual, it may still be *valuable* to someone—a value that can be quantified in terms of money. Much of the effort in estimating the value of youth work involves identifying appropriate financial representations or proxies for how much people value different benefits.

Direct vs indirect estimations of value—short, intermediate and long-term outcomes

Outcomes from youth work may occur during, immediately after, or long after the intervention is delivered. As such, some economic values can be estimated *directly* based on the outcomes generated immediately by youth work. Other elements of value will be created much further in the future. For the latter, to estimate the value of youth work happening today, we need evidence about the relationship between changes in young peoples’ attitudes and behaviours now, and how that will influence their life in the future—*indirectly* estimating value from outcomes data.

We can think of value being created as we move along the outcomes chain.

Figure 2: Value generated through the outcomes chain



Outputs: Some of the values estimated in the economic analyses we reviewed are based directly on the volume of outputs delivered by youth programmes—ie, how much activity took place, rather than the changes that occurred as a result. *The National Citizen Service (NCS) evaluation*¹ among others, include the value of volunteering hours young people offer through participation in their programmes. Others consider the intrinsic value of doing exercise.

In theory of change language, this is the economic value of *outputs* and is comparable to, say, the market value of the goods produced by a factory. To assess this, we need data on the economic value of an output and the quantity delivered.

Intermediary outcomes (feelings): Non-monetary values, ie, the intrinsic value to young people of participating and having different feelings/attitudes/beliefs/skills as a result, can be estimated based on direct outcome data. For example, the Housing Association Charitable Trust (HACT) social value bank estimates the intrinsic value to participants of being at ‘reduced risk of anxiety and depression’ or of ‘going to a youth club’ⁱⁱ. A technical report by NCS and JUMP² *If you could bottle it... A wellbeing and human capital for money* estimates the value of self-reported life satisfaction (though importantly, they note that that the ‘value’ of life satisfaction is assumed to incorporate expected changes to life chances and future earnings).

In theory of change language, these are the *soft* or *intangible outcomes* generated by participation in youth work—changes in young people’s thoughts, feelings, skills and attitudes. To assess the intrinsic value of soft outcomes for young people, we need data on how much a young person values these changes, and data on magnitude of outcomes generated by youth work.

Intermediary outcomes (behaviour): In addition, programmes may change young people’s behaviour in a way that generates value for themselves or others. In theory of change language, these are *intermediary hard outcomes*. For example, economic models in the USA typically value changes in behaviour, such as anti-social behaviour or crime, health (resulting from more healthy life choices), school attendance, and use of alcohol or drugs.

These sorts of values often accrue as ‘costs saved’ to the state or other people besides the participants. To assess this, we need data on the change in participants’ behaviour and data on the cost of these behaviours to participants and third parties, such as the criminal justice system and victims of crime, or the health system.

Long-term impact: Many economic analyses also consider the long-term economic benefits of youth work, usually by reference to changes in life chances. Estimates of such benefits rely on additional or external research that predicts a relationship between intermediary outcomes, particularly soft outcomes like changes in confidence and resilience, and long-term impact, like earnings.

For example, the NCS evaluation draws on the research *Leadership, skills and wages* from the USA³ which finds self-assessed leadership skills—an intermediary outcome—can improve the present value of lifetime earnings by 2.1%-3.8%. In the *Economic value of sports* by Sports England⁴ estimate the impact of participation in sport on the long-term likelihood a young person will experience health conditions such as diabetes, and value this using the NHS costs associated with people having these conditions.

ⁱⁱ The Housing Association Charitable Trust Social Value Bank: <https://www.hact.org.uk/value-calculator>

Types of outcomes and impact—valuing youth work

Many of the papers we reviewed consider several types of value in their estimations, since most youth programmes generate short, intermediate and long-term values, and what we have termed ‘monetary’ and ‘non-monetary’ categories of value.

Importantly, these different elements of value are often inter-related. For example, youth work may produce intermediate, ‘soft’ outcomes, like changes in feelings, attitudes, skills, for young people—outcomes that are *intrinsically* valuable to those young people (‘non-monetary’ outcomes). These outcomes may subsequently lead to behaviour change or implementation of skills learned, which mean that youth work also generates ‘hard’ outcomes with *extrinsic* value in the intermediate and long-term, like higher earnings and lower public spending (‘monetary’ outcomes). Intermediate outcomes may also lead to further ‘non-monetary’ outcomes for young people in the long term, like greater levels of life satisfaction.

Figure 3: Sources of value created by youth work (outcomes)

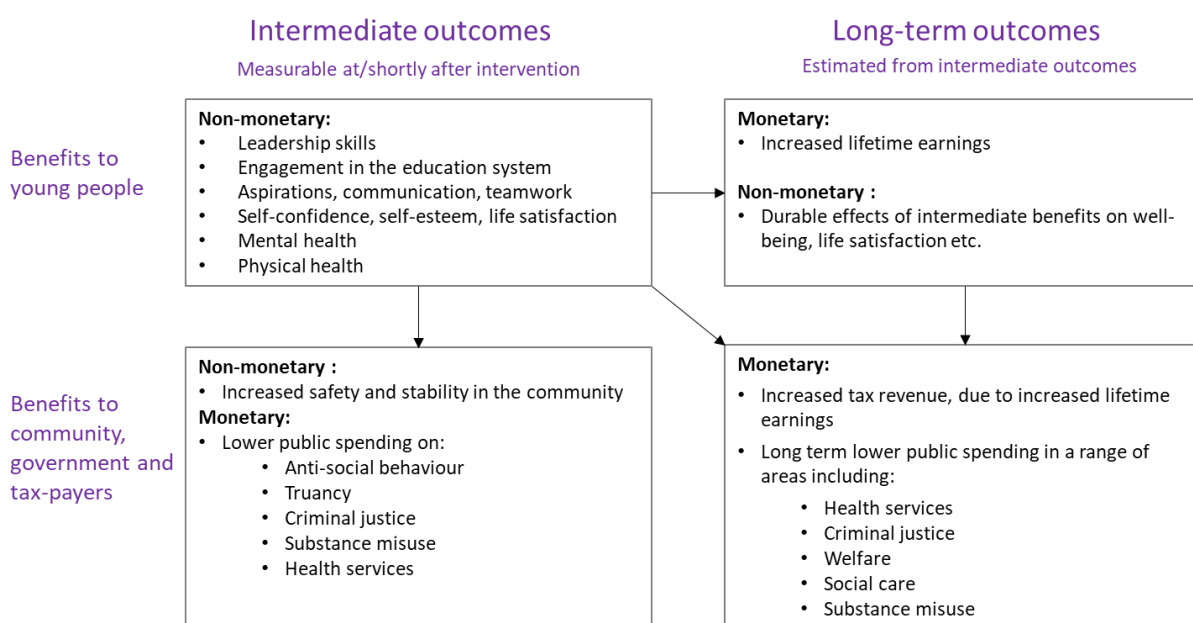


Figure 3 highlights the complex interrelationship between short- and long-term outcomes, and monetary and non-monetary value. Importantly, all outcomes of value flow from the short-term changes in soft outcome—skills, feelings, attitudes—that young people acquire through participation in youth programmes. While all types of value are generated, they are inherently interconnected. So, care is needed to avoid double counting where outcomes overlap.

Avoiding double counting

Measuring the value of skills that a young person learns by completing a course based on their *perceptions* of that value and adding that to the expected future earnings that these new skills are likely to bring about will likely count the same value twice. The young person's perceptions of the value of the new skills likely *already* includes their expectations of the future income the skills will support.

For example, the NCS evaluation estimates the monetary value of increased lifetime earnings to participants due to enhanced leadership skills and time spent volunteering. Separately, it estimates the monetary value associated with the impact of NCS on wellbeing. However, these two estimates are not combined, '*because enhanced leadership skills and time spent volunteering could both conceivably drive increases in self-reported wellbeing*'. The complex interplay of different types of value make estimating the aggregate value of youth programmes without double counting challenging.

Figure 3 does not include the value of outputs—namely, the monetary value of volunteering hours. Volunteering hours differ because they have an immediate value in and of themselves (the value of labour), which does not flow from outcomes achieved by young people.

Macroeconomic models

The 'value of youth work' discussed so far is based on welfare economics, the theoretical basis of cost benefit analysis. This forms the bulk of economic analyses of social programmes and assesses the value of outcomes.

A different approach to assessing the economic impact of youth work is to calculate the macroeconomic impact of youth sector spending on the economy using the multiplier effectⁱⁱⁱ. This value does not reflect the outcomes of youth work but estimates additional value for the economy from this money being spent (rather than saved) and of youth sector jobs being created.

This approach is rarely used in economic analyses of social programmes but is used in the [Assessment of the economic value of youth work](#)⁵. The authors include the multiplier effect of money spent by youth organisations and jobs created in running those organisations in the overall estimate of the value of youth work in Ireland.

ⁱⁱⁱ The increase in national income generated by additional spending.

METHODOLOGIES

The basic model adopted in almost all the economic evaluations we reviewed is to sum the benefits of a programme and compare these to the costs, as set out in the government's [Green Book](#). Analyses report their findings as a *ratio* of value generated to costs incurred for an intervention. This creates three core challenges for economic evaluations of youth work:

1. accurately measuring changes in outcomes generated by youth programmes;
2. monetising those outcomes (ie, working out their relative monetary value); and
3. calculating the investment required to run a youth programme or service.

The differences in methodologies are found in how the benefits—rather than costs—are estimates and monetised. As set out in the previously, this happens in youth work either by:

- estimating the subjective value of experiences, feelings, and attitudes, either in short or over long-term;
- estimating costs avoided by third parties, typically government, but also including victims or potential victims; and
- estimating future additional earnings, and the tax increases that accrue from this.

This section discusses methods we found of estimating costs, of valuing benefits, and estimating economic activity not using the basic cost vs benefit model.

Break-even analysis

A methodology that wasn't widely used in the papers we reviewed assesses how much impact a programme would *need* to have, for the benefits to equate its costs. This is called a 'break-even analysis', because rather than looking at the amount of value generated, it asks what magnitude of impact is necessary for the programme to 'break-even'.

One paper that did take this approach is [Social and economic value of youth work in Scotland: initial assessment](#)⁶. The authors examine a range of long term impacts which youth work could influence—for example, the likelihood of experiencing depression, contracting an STI, being unemployed—all of which have associated public and private costs. Applying the population level incidence-rates of these events to the young people participating in youth programmes, the authors estimate how much youth work needs to influence these outcomes, to cover its costs.

Estimating programme costs

In order to estimate a cost-to-benefit ratio, or indeed the amount of benefit needed to make a programme economically/financially 'worthwhile', it is necessary to estimate the size of the investment required to run a programme or service. This includes:

- fixed costs, not just variable costs (eg, the cost of a building—not just staff wages);
- in-kind resources (eg, the value of volunteering hours or a donated building space); and

- indirect, not just direct costs (eg, administrative support, comms, referral processes).

The papers we reviewed took different approaches to cost estimates. For example, in *The economic value of social and emotional learning*,⁷ the authors take an ingredients approach to cost estimates—interviewing key personnel staff about the programme’s inputs and calculating the cost of an intervention based on this list of inputs, priced by independent cost sources. Compared to only looking at programme budgets, the ingredients approach can be more robust applied correctly it may be more likely to include all the cost categories above, and it is easier to disentangle the incremental costs of a specific intervention from overall operational costs. In addition, the authors note ‘budget statements reflect local prices and not what an intervention would cost if another agency decided to implement it in their local context’.

However, these considerations were less relevant in other papers we reviewed, which were considering the cost-benefit ratios of the whole youth club (not a single programme within it) and were not written to assess the potential cost-benefits of replicating the model elsewhere. In those cases, the programme/organisational budgets were used as cost estimates.

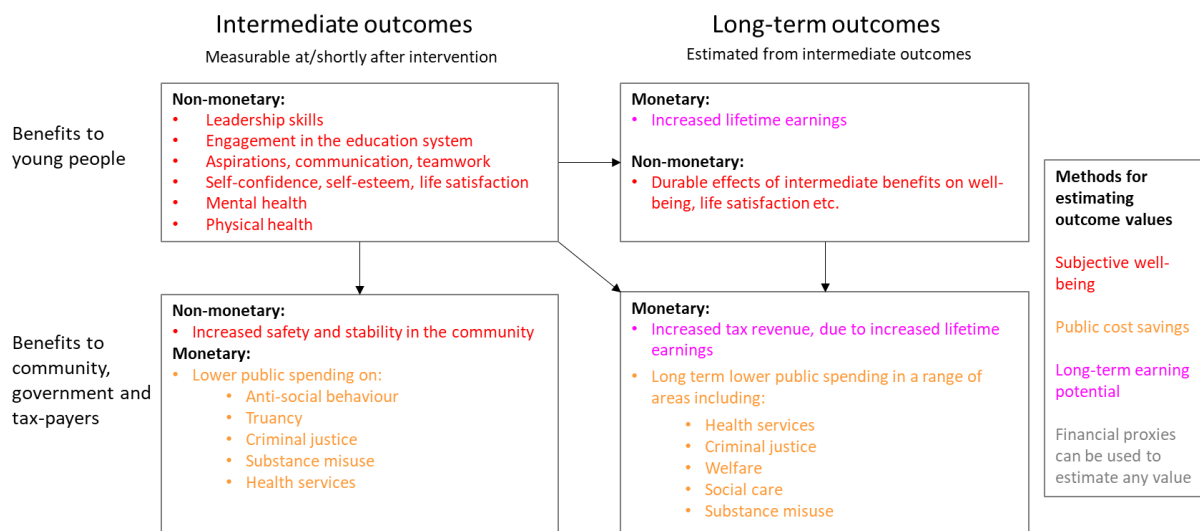
Estimating the value of programme benefits

As described above, economic analysis of youth work involves estimating the value of different types of benefits, which we can think of as goods or services. The estimated price of a good or service for which no market price exists is known as the shadow price. Shadow pricing can mean slightly different things when used in different analyses: sometimes it refers to any attempt to derive a value or price of a non-market good, others use it to refer to society’s willingness to pay for a good. As such there are different methods used to assess the different sources of value.

Note the term ‘shadow price’ refers specifically to what a price for an outcome would be were, it saleable. This is a slightly different concept to estimates of value that already have a price, like future earnings. However, in practice, we use a range of approaches and need not worry about this distinction.

Shadow prices / values can be estimated various ways. In Figure 4 below we discuss four such approaches: financial proxies, subjective wellbeing, public cost savings (all ways of estimating the ‘shadow price’ of outcomes) and changes to long term earning potential. Importantly, each of these approaches relates to one of the different sorts of outcome discussed on page 8, except for financial proxies which could be applied to any sort of outcome.

Figure 4: Different approaches for estimating the value of outcomes



Estimating economic activity

While most studies focus on the ‘value’ of youth work, some evaluations also estimate the impact of youth programmes on economic activity (see ‘Macroeconomic models’ on page 9). This is a different way to assess benefits, really focussing on the value of outputs rather than outcomes.

One element of economic activity included in some of the papers we reviewed is the hours young people spend volunteering as part of a programme. For example, the NCS evaluation estimates the value of hours spent volunteering by multiplying total hours spent by the median wage rate earned by 16 to 17-year olds.

Assessment of the economic value of youth work also estimated the overall economic impacts of youth sector spending in Ireland. This was calculated based on a survey of youth work organisations, which yielded estimates of expenditure in the youth sector. It included estimates of expenditure on wages and salaries, as well as expenditures on other business inputs. The authors apply a multiplier to estimate the added value to the economy of expenditure and jobs created by the sector.

However, while such analyses estimate the value of a sector to a country’s economy, they do not estimate the opportunity cost of that sector—ie, what would be the value if the resources were used in a different sector. So, such studies do not estimate impact as defined against a counterfactual.

Methods for estimating value

Financial proxies

Financial proxies are perhaps the most straightforward approach to estimating shadow prices, by using the closest equivalent market price. This is the approach used in the *Berkshire association of clubs for young people SROI*.⁸ They focus on measures of three core outcome areas and apply a financial proxy to each:

For outcome safety and stability, they use: ‘Cost of family counselling per session based on 6 sessions annually.’

For outcome health and wellbeing, they use: ‘Cost of month’s week’s attendance at a holiday play scheme in Berkshire.’

For outcome prospects and aspirations, they use: ‘Difference in salary for someone achieving 5 GCSE A*-C compared to non-achievement of GCSEs’.

There are not a standard set of financial proxies, although Social Value International has collected a number of proxies used in their online platform, Global Value Exchange. It is a matter of judgement as to what an appropriate proxy is. In addition, although not used in any of the papers reviewed here, the government’s *Green Book* sets out a methodology for certain types of ‘non-market valuation’, with approved, generic transferable prices. One example is quality-adjusted life years (QALYs)—based on estimated longevity and expected quality of life, which is measured using a short outcomes questionnaire. QALYs have a standard willingness-to-pay value of £60,000.

Subjective wellbeing (SWB) valuation

Estimations of the intrinsic (‘non-monetary’) value of changes in wellbeing are technically challenging and were only used in a small number of the analyses we reviewed.

The JUMP analysis underpinning the NCS evaluation values changes in levels of self-reported life satisfaction, as reported in the NCS programme survey. Using British Household Panel Survey (BHPS) data, the evaluation adopts lottery wins as an instrumental variable, to estimate the amount of money that has the equivalent impact on life satisfaction as the NCS programme.

Beyond this review, a popular source of SWB monetary value estimates is the Housing Association Charitable Trust (HACT) social value bank^{iv}. These are estimated using a similar approach to that outlined above—national datasets are used first to assess the impact on life satisfaction of different outcomes or activities, then statistical methods are used to estimate the amount of money needed to generate the same increase in life satisfaction. One drawback of the HACT values is that they relate to the general population whose values may be different for specific groups—like young people living in a deprived area. So, the SWB values are best thought of as generic values that apply to all youth services but cannot be customised to particular youth services.

Another methodology for assessing the value of SWB includes willingness-to-pay questionnaires, where people are asked how much they would be willing to pay for certain outcomes. However, we have not seen this methodology used in any of the papers we have reviewed.

Public spending savings

Estimating public cost savings requires two pieces of data—what is the likelihood of something with a public cost occurring with/without the intervention (eg, anti-social behaviour, A&E admittance, criminal activity, substance abuse, truancy etc), and what is the cost of that event?

In *Defining the Impact of a Youth Zone*⁹ the authors use the New Economy's Unit Cost Database^v, which draws together data from government reports and academic studies on the costs of a range of specific events (eg, A&E attendance, dealing with a case of anti-social behaviour). The evaluators use anecdotal evidence, combined with this data, to illustrate the sort of savings (and potential magnitudes) that could be generated if a programme is effective.

Assessment of the economic value of youth work also assesses potential public spending savings. They choose specific costs—for example, of someone being held in a detention centre, of local drug task force funding, or of claiming Jobseekers Allowance—which could be impacted by youth services. The authors do not have long term data and use assumptions about impact that might be generated to estimate *potential* public cost savings.

In the paper: *The economic value of social and emotional learning*, which uses existing evaluation data on behaviour change resulting from programmes, the authors note that, 'For drug use, we base our shadow prices on what society currently spends on these behaviours through the health care, criminal and judicial systems.'

Changes in future earnings

Only three of the papers we reviewed attempted to estimate the impact of youth programmes on long term outcomes. Two of these papers focused on programmatic interventions which targeted specific outcomes, rather than open access youth clubs.

NCS draw on research from the research *Leadership, skills and wages* which finds participation in leadership activities (such as being a sports team captain) and self-assessed leadership skills can improve lifetime earnings by 2.1% - 3.8%. They apply a 20% discount rate to this, as leadership skills may also impact wages and education. Using these estimates, the authors, applied the 2.1%-3.8% uplift to a

^{iv} The Housing Association's Charitable Trust (HACT) social value bank: <https://www.hact.org.uk/social-value-bank>

^v New Economy Manchester, Unit Cost Database: <http://www.neweconomymanchester.com/our-work/research-evaluation-cost-benefit-analysis/cost-benefit-analysis/unit-cost-database>

central estimate of the present value of lifetime earnings (£600,000) to estimate the gross value of increased leadership skills.

The economic value of social and emotional learning looks at the relationship between social and emotional skills and earnings—in doing so, they translate current outcomes into long term (financial) impact. For example, it estimates ‘one standard deviation increase in [self-reported] self-esteem leads to a 30.46% increase in real wages’.

This increase is mostly mediated through attainment, which is estimated to be 1.5 years greater for those with higher self-esteem... They caveat these findings and recommend further research: ‘Although promising, a precise association between social and emotional skills and earnings remains to be determined...It is necessary to assume that these constructs (self-esteem, misbehaviour, self-control, etc.) accurately and fully reflect SE skills. As well, it is necessary to assume that SE skill differences are stable over childhood (such that SE skills in one grade reflect SE skills throughout the school years)’. Nonetheless, in their evaluation they use these findings to approximate the present value of lifetime earnings gain from a one standard deviation increase in SE skills. ‘Given the above evidence, if social and emotional learning (SEL) goes up by one standard deviation, earnings go up by 4-15%’.

Another approach the authors take is to look at how social and emotional skills translate into achievement, which can be monetised. For example, they draw on Belfield and Levin (2009)¹⁰ who estimate a present value gain in earnings from a one standard deviation increase in 3rd grade math test scores, and then apply this monetary value to the achievement gains associated with SE skills.

Social and economic value of youth work in Scotland estimates the value of changes in earnings by asking a sample of adults in Scotland for their own assessment of how important youth work has been in their lives. They find 13.3% of adults claim it was ‘very important’. The authors estimate that the increased earnings range attributable to soft outcomes between £4,906 and £6,091—applying this to 13.3% of working age people across Scotland generates an estimate of the overall value of youth work to Scotland.

Finally, *Defining the impact of a youth zone* reviewed how many young people got a job after attending a targeted employability programme at a youth club. The evaluators applied the HACT Social Value Bank value (£10,036) for every young person who started work following the programme. They did not attempt to assess what would have happened without the programme but used an estimate to adjust for deadweight.

Data requirements

The main data requirements for economic evaluations of youth programmes are:

- outcomes generated by the programme, net of what would have happened without the programme (also known as the counterfactual);
- estimates of the value of those outcomes; and
- investment required to run the programme.

Two analyses had additional requirements. The NCS evaluation used the number of hours of volunteering delivered by participants, which was recorded by the programme administrators to value the output of NCS. The *Assessment of the economic value of youth work* used money spent by youth organisations and jobs created in running those organisations to estimate the economic multiplier effect of youth work in Ireland.

Measuring changes in outcomes

Robust outcome data is key to good economic evaluation. Without good information on the changes in attitudes, skills and behaviours that a programme has generated, it is impossible to meaningfully assess the value of those changes. But collecting outcome data is typically difficult because of the complexities of measuring outcomes in general and the difficulty in estimating the counterfactual.

While it is not the subject of this paper, it is worth noting that outcome measurement itself is often complex and challenging. Issues include identifying appropriate indicators and tools that effectively capture outcome changes, the timing of collection, and avoiding bias in data collection or data collection processes that influence results. Economic analyses that estimate the value of outcomes are only ever as good as the underlying outcome data.

Approaches in the papers we reviewed varied. Some of the papers had access to data on changes in behaviour—eg, exam results, anti-social behaviour, use of public services. The papers with the strongest economic analysis are those with the most robust outcome data collection processes. In *The economic value of social and emotional learning*, the authors based their economic benefit estimates on available impact reports of the various programmes assessed. The nature of such impact reports varied between programmes but included estimates of how programmes impacted a range of self-reported and objective outcomes. For example, reports included teacher reports of ADHD symptoms, social competence and aggressive behaviour, academic achievement, self-reported and parent reported bullying, reductions in crime and smoking initiation, risky behaviours, frequency of fighting and delinquency, and reported substance abuse.

Other papers focused on self-reported outcomes. For example, the *Berkshire association of clubs for young people* looked at a range of indicators across outcome measures. To measure outcomes on *stability and security*, they used data on how many young people report there are good role models at the youth club, get on with their parents, have someone to talk to (and others). As well as self-reported change, they also used some objective measurement tools, eg, to measure *Health and wellbeing*, they use a Happiness Scale score, alongside other indicators. The NCS evaluation measures wellbeing using a mix of outcome measures, including self-reported changes to measure leadership skills and entrance into higher education. In a separate methodology ('unconstructed value for money') they use changes in self-reported levels of life satisfaction as a basis for estimating economic benefit.

Counterfactual

An important element of outcome estimation is the counterfactual—ie, how much can changes in outcomes be attributed to the youth programme being evaluated?

The NCS evaluation used a difference-in-difference approach. Changes in self-reported indicators of leadership skills and life satisfaction for programme participants, were compared to changes in outcomes for a control group of similar young people who didn't participate, over a 3-month timeframe. The evaluators created the counterfactual using a statistical approach called propensity score matching (PSM) which allowed them to control for other factors that might create differences between programmes participants and the control group, such as demographics or attendance at other youth groups.

In *The economic value of social and emotional learning*, the authors use existing programme evaluation data, which factor in attribution to varying degrees of robustness. The most robust examples are Randomised Controlled Trials (RCTs), where an intervention is randomly assigned to a subset of young people and changes in behaviour are compared across those who do and do not receive the intervention.

The Housing Association Charitable Trust (HACT) data is an interesting case—rather than asking projects to measure outcomes themselves, the HACT social value databank already contains the outcome measures (eg, that attending a youth club creates certain outcomes regarding life satisfaction) and the value of that change in life satisfaction. It therefore internalises the level of outcome expected from a certain activity within its values. This means that in the papers we reviewed that used the HACT social values, output data (eg number of young people

attending a youth club) is all that is needed from projects to estimate their value. This makes data collection much easier, but the limitation of this approach is that it is not possible to compare the impact of one club against another, as the methodology treats all clubs the same.

Valuing the outcomes

The monetary value of outcomes that benefit the taxpayers are generally drawn from public information sets, such as the New Economy's Unit Cost Database. Few of evaluations we reviewed were able to report actual data on changes in behaviours with public spending implications. In some examples, evaluators looked at local data on street crime or anti-social behaviour, though in these cases authors often note the challenge of attributing changes (or a proportion of those changes) to youth programmes.

An alternative approach is to estimate overall *potential* public spending savings, inferred from specific examples or experiences. For example, *Defining the Impact of a Youth Zone* reported that because 75 NEET (not in education, employment or training.) individuals were supported through an employability course towards positive outcomes—this *could* create public savings up to an equivalent of 75 people claiming benefits. This approach relies on strong assumptions about what would have happened with and without an intervention.

Another approach we observed was to make assumptions about how behaviour might change as a result of programmes and apply these to actual data on the cost of public services. For example, the authors of *Assessment of the value of youth work* estimate that '2% of participants in these projects would be admitted to a detention centre [in the absence of a programme]', and 'assume that 4% of youth beneficiaries of these programmes would have to received treatment in an adolescent treatment centre'. These assumptions are multiplied by the cost of public services, such as attendance at an adolescent treatment centre.

Some of the papers we reviewed used the economic values already estimated by the Housing Association Charitable Trust (HACT) and applied these to activities or outputs. HACT values are estimated using Wellbeing Valuation methodology^{vi}. That methodology '*estimates the impact of the good or service [or an outcome] and income on people's subjective wellbeing and uses these estimates to calculate the exact amount of money that would produce the equivalent impact on subjective wellbeing*'.

One more approach worth highlighting is the way future earnings are estimated in some models. In some cases, like in *The economic value of social and emotional learning*, the authors had access to data on changes in participants' academic achievements, which they were able to extrapolate into changes in future earnings. In the NCS evaluation, leadership skills were translated into changes in future earnings by drawing on existing literature. The authors note, '*The existing literature suggests that leadership skills have a direct positive impact on lifetime earnings.*' This research reports that self-assessed leaderships skills can '*improve the present value of lifetime earnings by 2.1% and 3.8%*'. Because the NCS evaluation uses questions that are broadly comparable with those used in the data underlying the *Leadership skills and wages* research, they apply these estimates about long term impact to the NCS survey results on immediate changes to young people's leadership skills after participation.

Dosage

In some cases, the interventions are programmatic and fixed length, meaning dosage is naturally accounted for. For general youth clubs with no fixed programme term, the *Berkshire association of clubs for young people* is the only analysis that explicitly takes account of dosage, by comparing outcome results to frequency of attendance data. In this way they estimate the relationship between dosage (length and frequency of attendance) and outcomes.

^{vi} The Housing Association's Charitable Trust (HACT) mental health social value calculator: <https://www.hact.org.uk/mental-health-social-value-calculator>

FINDINGS

All the studies we reviewed reported results as a cost benefit ratio—ie, how much value was generated, for every £1 (or \$1) spent.

Most studies in the UK find results in the region of 2:1, despite the fact they take quite different routes to get there and include quite different factors in their assessment. The outlier is the assessment of youth work in Scotland, which estimates a ratio of 7:1.

UK and Ireland programme evaluations:

- The NCS evaluation finds around £2 of value generated for every £1 spent. However, when they only value wellbeing (rather than modelling increased earnings) the estimate ranges from £0.97 to £2.79.
- *Defining the Impact of a Youth Zone*, prepared for Onside Youth Zones, finds around £2 value generated for every £1 spent.
- The *Berkshire association of clubs for young people* finds £2.50 value generated for every £1 spent.
- *Assessment of the Economic Value of Youth Work* report a benefit-cost ratio of €2.22 for every €1 spent. This includes multiplier impacts of youth orgs, economic value of volunteering and public spending savings.
- In *Social and economic value of youth work in Scotland: initial assessment*, the authors estimate that youth work in Scotland delivers at least £7 in value for every £1 it costs—though their review of SROI studies of youth work in the UK finds results ranging from 1:2 to 1:7.

The USA programmes evaluated by the Washington State Institute for Public Policy (WISPP), which were generally more targeted programmes than many of the UK and Ireland youth service evaluation listed above, reported a wider range of results:

- Meta-analysis of 7 articles on mentoring in the juvenile justice sector report a cost benefit ratio of \$3.91 for every \$1 spent.
- One skills programme targeted at at-risk males, *Becoming a Man*¹¹, generated \$2.35 for every \$1 spent^{vii}.
- *Communities that Care*¹², a coalition-based community prevention program that aims to prevent youth problem behaviours including underage drinking, tobacco use, violence, delinquency, school dropout, and substance abuse, returned \$5.31 for every \$1 spent.
- *Mentoring: Schools based*¹³, which aims to promote greater confidence, educational success, and avoidance of risky behaviours through one-on-one mentoring was the only programme to report a loss - \$0.15 value generated for every \$1 spent.
- The largest ratio, an average return of \$11 for every \$1 invested, is reported in the evaluation of the social and emotional learning programmes in the USA. These programmes are targeted—focused on emotional and social learning, delivered within schools, and focused on achieving specific outcomes.

^{vii} Though interestingly, this analysis was based on a different study, which estimated a ratio between 6:1 and 36:1. So there are different ratios that are based on the same data, highlighting the inherent complexity of outcome modelling.

ANALYSIS

As we have set out, the papers we have reviewed illustrate the range of approaches that are possible for assessing the economic value of a social programme. While there isn't a single right or wrong approach, our review has highlighted several principles that feature in the strongest evaluations.

The best evaluations are clear not to double count intermediate and final impact. For example, while the NCS evaluation examines both, it does not aggregate the results but sets them out as alternative estimation. The same principle means that good evaluations do not combine both the monetary and non-monetary values of the same outcome. This is because non-monetary value (eg, life satisfaction) is likely to be influenced by the expected monetary values (eg, increased future earnings).

Economic value estimations are only as good as the outcome data that underpins them. The economic value of an outcome may itself be hard to estimate, while in some cases the value is clearly established—eg, the economic cost of public services. But however robust the economic value figure, the economic value of a programme can only be estimated with robust data on the outcomes generated by a programme. For example, in *Defining the Impact of a Youth Zone*, lacking the accurate outcome data the authors instead reported the 'potential value' of programmes, if outcomes reached certain levels. This is similar to the break-even analysis (see Table 2), approach taken in *Social and economic value of youth work in Scotland: initial assessment*. The advantage of this approach is it removes the need to measure outcomes at all. The disadvantage is that it only shows what impact is needed to achieve a break-even result, not an estimate of what is achieved.

Good evaluations take all benefits and costs in account. To be very robust, the cost element of the evaluation should also include opportunity costs, eg, the value of volunteer time or physical space used, even if there is no charge. In addition, it's worth remembering that youth work badly delivered may even deliver negative impact results. For example, the *Berkshire youth club assessment* noted that '*youth clubs which didn't offer structured activities were actually associated with worse outcomes for young people*'.

The best evaluations are very clear about what is being valued and often report a range rather than a single benefit-cost ratio. Even when the methodology is set out clearly, it is not always intuitively obvious what is *being valued*, particularly where subjective wellbeing is assessed. For example, the NCS technical report by JUMP is transparent about how life satisfaction is measured and how its value is estimated. Nonetheless, how an individual value 'life satisfaction' is inherently opaque. So where intermediary outcomes (for example, feelings and attitudes) are valued, the most persuasive evaluations are those that report a range of estimates.

Economic evaluations are estimates, not proof, of value created. All of the economic evaluations we looked at involved some estimates and assumptions. At a minimum the estimates and assumptions cover what is likely to happen without the programme as this cannot be measured directly, but typically also include assumptions that outcomes, and the value of those outcomes, are stable across time and place. Such estimates are inevitable and are not a weakness in the methods used. But acknowledging that the results of the evaluation are, consequently, uncertain, is important.

CONCLUSION

This review has highlighted the range of ways youth work can create economic value—for individual young people, their local communities and taxpayers. The technical principles for good economic evaluation—of avoiding double counting, of methodological transparency—can be seen in many of the papers we reviewed. And the economic value of outcomes is often very persuasive, particularly for ‘monetary’ values like public cost savings or future earning potential.

The challenge for *all evaluations* however is collecting good quality outcome data—understanding the impact of an individual programme for an individual young person. Without knowing what the impact of a programme is, it is impossible to estimate its value. Few of the papers included in this review took the more straightforward approach of a breakeven analysis, which would avoid this challenge by reporting how much of an outcome is needed to cover programme costs.

In helping us review how to approach the YIF economic evaluation, we have taken the following lessons:

- There are a range of ways youth programmes can create value. In building the YIF economic simulation model we were not able to include all these channels. We will need to prioritise where we expect to see the biggest impact, without underestimating the value of youth programmes.
- Existing evidence about the relationship between short term outcomes (particularly ‘soft’ outcomes, like self-confidence) and medium/long term economic benefits (like changes to future earnings or health) is not as widely cited in the existing literature as we hoped and may not be readily available. While there are some relationships usefully established (eg between leadership skills and future earnings), the amount and quality of research available is limited, and we expect to have to rely on many estimates and judgements.

And while none of the papers we reviewed presented a perfect template for estimating the value of the YIF, they all highlighted different factors we will consider or build into our economic simulation model. This includes decisions on which outcomes to include and how to monetise them, links to relevant research on current outcomes and future economic benefits, and insights into how to categorise different types of economic benefits generated by youth programmes.

The YIF learning team are now developing an economic simulation model using the insights from this paper. The model will be available early 2020.

SUMMARY OF PAPERS REVIEWED

Summary of papers		
<p><u>National Citizen Service (NCS) evaluation</u> (Kantar Public, on behalf of the Department of Culture, Media and Sport, 2016) Accompanying technical paper, <u>if you could bottle it...A wellbeing and human capital value for money</u> (Jump, 2016)</p>	UK	The National Citizen Service is a youth volunteering programme. Evaluators use a difference-in-difference analysis to assess core NCS outcomes, including life satisfaction and leadership skills. Two approaches are used to estimate value— (i) estimated increased lifetime earnings among NCS completers due to enhanced leadership skills and value of volunteering hours; (ii) estimated monetary value associated with wellbeing changes.
<p><u>Economic value of sports</u> (Sport England, 2013)</p>	UK	Report on the range of ways that sport generates economic value.
<p><u>Berkshire Association of Clubs for Young People (BACYP) Ltd Social Return on Investment Evaluation</u> (nef consulting, 2010)</p>	UK	Social Return on Investment (SROI) evaluation of the impact of Berkshire's youth clubs, providing a range of open access youth services.
<p><u>Defining the impact of a youth zone</u>, Onside Youth Zones (Amion Consulting, 2015)</p>	UK	Assesses the social impact of the Youth Zones and their employability support project using, HACT social value bank figures to translate outcomes into economic values.
<p><u>Social and economic value of youth work in Scotland: initial assessment</u> (Hall Aitken, 2016)</p>	UK	Examines the potential value of youth work in Scotland a range of ways: a review of existing Social Return On Investment (SROI) analyses of youth work (which have a core range of findings from 3:1 to 6:1), a survey of how important adults in Scotland believe youth work was to them achieving their life goals, and a break-even analysis based on outcomes with public and private costs, which youth work could influence.
<p><u>Assessment of the economic value of youth work</u>, National Youth Council of Ireland (Indecon, 2012)</p>	Ireland	Cost benefit analysis (CBA) of the youth work sector in Ireland. Direct benefits are estimated through the economic value of volunteering and paid employment, and the multiplier impacts of youth organisation expenditures. Indirect benefits are estimated related to public sector savings in justice, health, welfare and education spending.
<p><u>The economic value of social and emotional learning</u>, (Center for Benefit-Cost Studies in Education Teachers College, Columbia University, 2015)</p>	USA	Review of several targeted, school based, social and emotional learning interventions. The authors use these programmes' existing outcome data and apply shadow prices and programme cost estimates to estimate the cost-benefit ratio of each programme.

<i>Washington State Institute for Public Policy: Mentoring</i> (Benefit-cost methods last updated December 2017. Literature review updated June 2014.)	USA	Meta-analysis of 7 articles on mentoring in the juvenile justice sector. The CBA model gives an effect size for reduced recidivism and then estimates down stream savings on health, education, and employment.
<i>Washington State Institute for Public Policy: Becoming a Man</i> (Benefit-cost methods last updated December 2017. Literature review updated May 2015.)	USA	Becoming a Man (BAM) is a high school behavioural program that offers non-academic intervention to disadvantaged and at-risk males through exposure to prosocial adults and skill training based on cognitive behavioural therapy. The CBA model gives an effect size for reduced recidivism and then estimates down stream savings on health, education, and employment.
<i>Washington State Institute for Public Policy: Communities that Care</i> (Benefit-cost methods last updated December 2017. Literature review updated April 2012.)	USA	Communities that care is a coalition-based community prevention program that aims to prevent youth problem behaviours including underage drinking, tobacco use, violence, delinquency, school dropout, and substance abuse. Monetized benefits relate to lower crime, increased future earnings associated with high school graduation, lower health care associated with smoking and others.
<i>Why should we invest in adolescents?</i> (Urban Institute, 1998)	USA	Research report which discusses the potential economic benefits of investing in adolescents, by reference to the high costs of delinquency, school drop outs (etc)—rather than estimating a CBA of a set of programmes.
<i>The Social Genome Model: Estimating how policies affect outcomes, mobility and inequality across the life course</i> , Brookings (ongoing)	USA	The Social Genome Model (SGM) is an analytic tool that can be used to estimate how the benefits of an intervention on a single outcome at a particular life stage reverberate across other outcomes throughout the life course. It is not an economic model and does not value intermediate outcomes, but it does include many intermediate outcomes as predictors of life outcomes.
Additional databases		
What Works-Child Trends website: www.childtrends.org/what-works		Child Trends' What Works is a searchable register of over 700 programs that have had at least one randomised evaluation to assess child or youth outcomes related to education, life skills, and social/emotional, mental, physical, behavioural, or reproductive health.
Global Value Exchange website: www.globalvaluexchange.org/		The Global Value Exchange is an online platform that allows users to set up their own projects and helps them to manage and maximise their social value.
Investing in Children website: www.investinginchildren.net/		Investing in Children (IiC) is a children's human rights organisation working in partnership with children and young people to exercise their rights and participate in decisions that affect them.

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