The Seven Principle Problems of SROI

of SROI

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Acknowledgements

Introduction

Social Return on Investment (SROI) has become increasingly popular with the not-for-profit sector, and to some extent the private sector too. However, it has never been used by an OECD government department or an international organisation in a policy making context and it does not currently seem to be in favour among many policy officials and technocrats. There are many potential reasons for this with the most probable being that SROI is a very new method (relative to methods such as cost-benefit analysis (CBA)), which does not have the same pedigree of research history and about which very little is actually known in terms of limitations and advantages.

Research into CBA can be said to have started at least 300 years ago and it has encompassed a wide range of disciplines such as economics, normative ethics, statistics, econometrics, psychology, behavioural science, and neuroscience. Research on CBA is vast and impacts not only on CBA but also on methods such as cost-effectiveness analysis (CEA), cost-utility analysis (CUA), sustainability accounting and importantly on SROI too.

Drawing on this research it becomes clear that SROI has a number of problems both technical and normative in nature. The small (but growing) literature on SROI methodology has tended to be fairly opinionated in nature, comprising mainly of blogs and short articles. Although a few critical studies and papers exist (e.g. Krlev et al., 2013) the overwhelming trend seems to be a focus on the advantages and benefits of SROI, often discussed in comparison to CBA. And those papers that have provided a critique of SROI have tended to focus more on practical issues, which are important but miss other more critical issues.

This short paper provides a critique of SROI based on the academic literature in the field of economics and policy evaluation. As far as this author is aware it is the first paper that does so. The paper is aimed at SROI practitioners although many of the issues and problems discussed will also be directly applicable to other recently developed forms of social impact measurement such as social accounting. The review and critiques set out in this paper relate to the UK SROI guidance produced by Social Value UK (previously SROI Network) and to general trends in published SROI studies.

The content of this paper is introductory in nature and so describes issues concisely (although many of the issues are very technical in nature and have been proven mathematically). The paper is designed to present the main concepts and issues and to encourage the reader to further explore the literature. In the longer-term critical reviews such as these will hopefully guide the development of SROI making it a more robust method in the future. SROI has a number of positive attributes - covering issues such as stakeholder involvement, materiality and assurance – and it has the possibility of making a meaningful contribution to the general field of social impact measurement. The intention of this paper, therefore, is to make people aware of some of the key problems with the sole aim of improving the SROI methodology. At some point this may allow SROI to grow to become a realistic option in policy making.

The paper is set out as follows. In 'Social Return on Investment' I start with a brief interpretation of the SROI method. This sets the scene for 'The Seven Principle Problems of SROI', where I set out the problems of SROI along with some tentative recommendations on what SROI can do to address these. And finally I close with 'Discussion and concluding remarks'.

It is interesting to note that the path and some of the challenges currently facing SROI are very similar to the development process of CBA. CBA started life formally in the 1800s and the birth of modern-day CBA is attributed to the work of a group of civil engineers at the École Nationale des Ponts et Chaussées. They were concerned with the problem of how to decide whether public works projects should be undertaken. Due to the work of these early pioneers the decision criterion changed from one of whether the project's financial savings can completely cover its costs, to one that was concerned with the overall social terms, a principle that sits at the core of CBA and SROI today.

In the twentieth century CBA was formally aligned with the principles of microeconomic theory and now stands as the formal or accepted approach to social impact measurement in most OECD countries.

Although prior to these developments there had been much theoretical discussion about how to evaluate the impacts of a policy on society – for example the Classical Utilitarian theories – there had been very little done in terms of the practical considerations until this period. CBA has its roots in a long tradition of philosophical, economic and political thought and, as I shall show here, there is much that we can take away for SROI from this area of research.

Social Return on Investment (SROI)

I think that SROI can best be described as an accounting approach applied to social issues borrowing in places from economics, CBA and sustainability reporting. And for me herein lies the problem. To get over my point take, for example, a charity. This charity will likely want to know two things about itself as an organisation:

i)   The financial health of the organisation
ii) The impact that the charity has on its stakeholders and society.

The key issue here is that the first question is an issue in accounting. The second question concerns social impact measurement and cannot be fully addressed with the standard tools of accounting. Sure accounting principles can be used in many areas of social impact measurement, but one major problem is that accounting does not have the normative tools to fully answer questions about social impact. Normative issues are absolutely critical in social impact measurement because they address questions such as what ultimately should we measure as outcomes? How do we aggregate impacts across different individuals in society? And how do we measure value? These questions are not addressed in accounting or at least not addressed to the extent that they are addressed in other disciplines that deal with social impact measurement such as philosophy and economics. Philosophical questions related to accounting are issues in **applied ethics** and more specifically the ethics of how accountants and the accounting profession should act. This has now become a key component of an accountant's training.

Social impact measurement (SIM), on the other hand, is an issue for **normative ethics** as it seeks to provide judgement on what interventions or actions are in the best interests of society, which in turn leads us to the question of how we should act and the account of the moral good. Indeed in many ways SIM precisely exists to relieve us from the need to delve into applied ethics for every policy decision. So whilst accounting can tell us about the financial health or performance of an organisation, it is actually silent on the issue of whether the organisation creates social value.

A significant part of what I discuss in this paper is based on the claim that accounting tools and principles have limited direct applicability to some of the major issues and themes in SIM. The two main fields that I discuss and which I believe have been of greatest relevance to the development of SIM are economics and the branch of normative ethics in philosophy. SIM, whether in theory or in practice, cannot function without a clear normative foundation and philosophy and economics have provided numerous potential normative frameworks for SIM. CBA, the most famous and popular method of SIM, has been built around the normative theory of utilitarianism with some adjustments made by normative economics.

As I shall argue below SROI, on the other hand, does not have a principled normative foundation, which leads to a number of problems mainly around interpretation. It is noted that SROI does make some normative or moral claims – for example SROI states that "it seeks to reduce inequality and environmental degradation and improve wellbeing by incorporating social, environmental and economic costs and benefits" (Nicholls et al., 2012)- but it is important here not to mix 'mission statements' with clear normative principles. Normative principles are what allow us to properly interpret the results of a social impact study.

In addition to this SROI has a number of technical problems related to the methodology itself, concerning mainly the derivation of the ratio and methods used for valuation and causal inference analysis. The seven principle problems I discuss below will cover both the ethical and technical problems related to SROI.

The Seven Principle Problems of SROI

1. SROI lacks a clear principled normative approach

All SIM methods can be categorised by the following single definition (Fujiwara, 2014):

Definition 1: 'Social impact measurement is concerned with assessing whether an intervention or action is in <u>society's</u> <u>interests</u>'.

This is a very broad definition, but a comprehensive one since *all* SIM methods essentially pertain to this overarching objective. We can therefore actually be more assertive here and claim that

Definition 2: 'A method is a social impact measurement method if and only if it assesses whether an intervention or action is in <u>society's</u> <u>interests</u>'.

Given this there are two key definitional issues at stake and I have highlighted them in the definitions by underlining them. The first issue is around the meaning of 'society' and in turn the meaning of 'social impact'. SROI does not offer a concrete definition of 'social impact'. And this is also a problem in all newly developed methods of SIM. There are two definitions that have been used in the literature, one of which is wrong and can lead to problems in the measurement of social impact.

Social impact as the impact on society
The correct definition of 'social impact' for the purposes of SIM is the impact of an intervention or action on society, where 'society' is an aggregate unit of people. Accordingly, in CBA 'social impact' refers to the *overall impact on the individuals that make up society* (Boardman et al., 2010).

Social impact as the impact on social indicators
However, 'social impact' in the recent literature refers to a *type* of impact and is separate to 'economic impact' and 'environmental impact'. These are references to different *types* of outcomes and in this circumstance 'social impact' is used to refer to the *impact on social indicators.*

Social impact defined as the impact on social indicators should not be used in SIM for three reasons.

i)   It is impossible to clearly differentiate impacts in this way. Any action may ultimately have impacts on social indicators – for example, poor economic conditions will lead to increased rates of crime (crime is often seen as a 'social impact').

ii)   SIM should be interested in *all* types of impact and not just impacts on social indicators in order to provide a holistic assessment of impact (this includes financial and non-financial impacts).

iii)   Social impact defined as impact on society (rather than as impact on social indicators) is the definition which best aligns with our prior intuitions about what a social impact assessment should encompass.

CBA is categorically concerned with all types of impact on society and this can be seen through the use of the social welfare function approach in CBA. SROI, in practice, takes a similar approach and does not focus only on social indicators and so SROI does, for all intents and purposes, use the term 'social impact' in the correct sense, but this needs to be made clear to avoid any confusion.

What are the normative foundations of SROI?
All SIM methods face a significant ethical challenge, which is to provide a principled moral account of what society's *interests* are, or in other words what is *good* for society. I will refer to this as the **moral account of the good** in social impact. A principled moral account of the good provides the foundation and building blocks for any SIM method. A 'principled' moral account is one that is based on a normative theory of the good and not one that is based on intuition or commonsense. Once we have defined what is good for society we can then (and *only* then) start to think about measuring outcomes and social impact. As I will show, however, SROI lacks a principled moral account of the good which results in significant problems.

To understand what a principled account of the good might be we need to delve into the branch in philosophy of **normative ethics**. CBA has a well-defined normative foundation, which allows for a clear interpretation of the results and this is one of the reasons behind its popularity in government and international organisations. We are able to properly interpret the results from CBA and to critique and ameliorate the method in a meaningful way.

CBA is based on the theory of **preferentialist utilitarianism**. Utilitarianism claims that what matters about an action in a moral sense is the **outcomes** that it produces (consequentialism) and that the ultimate outcome of importance and value to us is **wellbeing** (welfarism). Preferentialism then just adds the stipulation that wellbeing be measured through people's desires and preferences. More recently CBA has engaged **subjective wellbeing** measures too – which could be seen as a move back to classical (Benthamite) utilitarianism. The other important component of utilitarianism in CBA is the **sum rank rule**, in which every individual's wellbeing has equal weighting in society.

In CBA, wellbeing impacts on individuals in society are measured and reflected in monetary terms through Hicksian measures of welfare change (**compensating and equivalent welfare change measures**). CBA is effectively a tool for aggregating all compensating welfare changes across society using the sum rank rule (equivalent welfare change measures are rarely used in CBA). Therefore, a positive net benefit result in CBA (when benefits > costs) shows that the intervention creates a net increase in social wellbeing.

This grounded normative approach in CBA has been the product of the strong tradition of ethics in economics (indeed, the subject of economics was for a long time seen simply as a branch of ethics (Sen, 1991)). In contrast to this, the SROI guidance and literature do not provide a principled normative account of the good. In SROI, practitioners build a theory of change highlighting the likely outcomes of an intervention, measure

those outcomes, value those outcomes and then aggregate the outcomes across all stakeholders. The problem is that without a moral account of the good the valuation methods can be ad-hoc, the weights applied in aggregation of the values are arbitrary and the final result is uninterpretable. The unfortunate upshot of this is that the term 'social value' in SROI as it currently stands is hollow.

To see why let's think about what an SROI ratio of, say, 3:1 means. It is actually not possible to provide a meaningful interpretation of this without a principled moral account of the good and certainly no SROI study of which I am aware has done so to date. A typical interpretation of this ratio in the SROI literature would be that '*every £1 spent creates £3 of social value*'. This is no more than a superficial interpretation because we cannot say what has been 'created' (in terms of 'social value'). So whilst in CBA a positive result allows us to conclude that wellbeing has increased, **in SROI we have to beg the question what exactly has increased by £3?**

Problems related to the interpretation and use of the ratio have been discussed in some of the literature to date. For example, Krlev et al (2013) state there is often a lack of reflection on the meaning of the ratio or acknowledgement of its limitations. Social Value UK also recognise the limitations of the ratio, but these limitations refer more to estimating ratios and comparing ratios rather than to the normative interpretation of the ratio itself [12].

The ethics of SROI are, I believe, founded on principles of **applied accounting ethics** and what, for want of a better phrase, might be labeled **commonsense morality** (See Kagan's use of the term (1998)). Many of the seven principles of SROI are clearly borrowed from the applied ethics of accounting. This concerns how accountants should act in the moral sense of the word and these guidelines have been translated over to how SROI practitioners should act. These principles cover: *"Do not over claim"; "Be transparent"; "Verify*

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[1] http://socialvalueuk.org/blog/322-what-ratios-are-telling-us

[2] http://socialvalueuk.org/component/content/article/173-international/300-the-sroi-network-releases-new-report-on-myths-and-challenges-in-sroi

the result". Two of the other four principles touch on areas that belong to normative ethics. These are: *"Value the things that matter"; "Only include what is material".* These issues require a principled moral account of the good and applied accounting ethics and commonsense morality will not suffice for these questions.

The commonsense approach to ethics in SROI seems to lead us to an **agency-centred** approach, which places moral weight on the concept of the *agency* of the stakeholders. This is a perfectly acceptable approach and one that has considerable merit in ethics (e.g. Sen, 1991), but there are some major problems for use of agency theories in SIM and if this is the approach taken in SROI then it should be recognised from the outset and solutions must be provided to accommodate the main problems associated with this approach.

Agency-centred moral theory recognises that a person may value things even though they may not improve her wellbeing. This leads to an "irreducible 'duality' in the conception of a person in ethical consideration" (Sen, 1991 p.41) as we can perceive of an individual in terms of her agency or in terms of her wellbeing. The agency based approach is a **relativist approach** to ethics and is in sharp contrast to other established SIM methods, which generally take an **absolutist approach** to defining the moral account of the good (usually defined as wellbeing). Relativist approaches face a number of serious challenges and these need to be addressed by SROI at the outset.

The key problem of a relativist moral approach to SIM is that **no two SROI studies can ever truly be compared** because the moral account of the good is fluid from study to study[3]. This is because the moral account of the good can change from study to study depending on whom you ask. An important point to note here is that goods which are instrumentally important (which is an empirical rather than ethical question) can and should change from study to study as stakeholders will have different views on them. But if goods which

are intrinsically important (which refers to the moral account of the good and is an ethical question) change from study to study it makes comparative SIM impossible since we cannot compare different interventions on a like-for-like basis. This, I believe, is the fundamental consequence and problem for any SIM method that chooses to employ an agency-centred view of ethics. Another major problem related to agency-centred approaches is that no accepted form of valuation methodology exists for agency-based outcomes. Current approaches to valuation require an absolutist approach to ethics grounded in human wellbeing.

SROI urgently needs a principled moral account of the good - defining what is good for society or what is in society's interests and this cannot be deduced from accounting ethics. In many aspects SROI borrows heavily from CBA and it could be converted to a utilitarian or (less specifically) a welfarist approach to normative ethics. But if so, there are some major issues it will need to address and we would also need to pose the question of what SROI offers that we don't already have in CBA?

There are, of course, other ethical options open to SROI too. Forms of Aristotelian virtue ethics and Humean non-cognitivism are sometimes implicitly used in certain government policy areas. And of course SROI could follow a Kantian deontological approach, as exemplified by Nussbaum's Hegelian version of CBA (Nussbaum, 2000). But it must be recognised that only welfarist approaches to SIM allow for monetary valuation of non-market outcomes using internationally-accepted methodologies.

Why develop a principled moral account of the good?
The benefits of determining a principled moral account of the good in SROI are numerous. It will allow us to provide a full interpretation of 'social value' in SROI; it will allow practitioners to build a much stronger rationale and defence for SROI; and importantly it will help SROI to develop in the future. The approach can be made much more rigorous and holistic and SROI can become a unique approach to SIM in its own right and one

[3] http://socialvalueuk.org/component/content/article/173-international/300-the-sroi-network-releases-new-report-on-myths-and-challenges-in-sroi

that can demonstrate meaningful and substantive differences from other more established SIM methods. And understanding the ethical foundations of SROI will allow us to better understand the problems of SROI and improve the method going forward.

In many ways SROI must learn from the mistakes, toils and achievements of CBA in its long history of development over the past few centuries. CBA, like SROI, sat in an ethical 'vacuum' for a number of decades before it was aligned with the normative principles in economics and since then it has grown and developed rapidly.

2. SROI is silent on the issue of interpersonal comparisons and perversely places greater weight on the outcomes of the rich

Every SIM method must deal with the issue of interpersonal comparisons. This is the issue of how impacts on different individuals in society are aggregated. The topic of interpersonal comparisons is crucial in SIM because positive and negative impacts of an action fall on different people in society and the question we must pose is whether impacts on different people in society can be compared in a meaningful and robust quantitative way and if so what the relative weighting across individuals should be. The problem of interpersonal comparisons is as serious as the issue of normative ethics in SIM. In the mid-1900s due to the work of Robbins, who contested the possibility of interpersonal comparisons, policy makers and economists all but abandoned CBA and any form of SIM (Backhouse, 2002).

Since then a number of methods have been developed to deal with interpersonal comparisons which has 'saved' CBA (and other forms of SIM too). CBA now can take one of two approaches on the issue of interpersonal comparisons. The first is to eschew interpersonal comparisons entirely and endorse the concept of actual or potential **Pareto improvements**. This is where the gainers compensate the losers such that the losers are no worse off and the gainers are better off with the intervention. But this concept has run into serious practical problems and its normative rationale is weak (Boardman et al., 2010 pg. 30).

A number of paradoxes such as the **Scitovsky Paradox** and **Arrow's Impossibility Theorem** have also proved (mathematically) that under some circumstances plausible Pareto improvements do not exist.

The alternative method is the **social welfare function approach** to CBA, in which a mathematical formula is derived for weighting and aggregating impacts on different individuals in society. In CBA the weighting rule uses the utilitarian sum rank rule and to do this **welfare weights** are required. This approach has become the norm in the UK, with the adoption of welfare weighting in the HM Treasury Green Book manual (it should be noted that other distributional systems such as a **Prioritarian redistributive system** or a **Rawlsian min-max rule** can be incorporated into the welfare weighting system instead of the sum rank rule making the social welfare function approach a very flexible one in terms of different preferences regarding equality, distribution and fairness). Sophisticated distributional preferences such as this cannot be administered in the Pareto improvement approach.

SROI is, unfortunately, silent on the issue of interpersonal comparisons and this is a major weakness of the approach. One misconceived view in SROI is that interpersonal comparisons are not problematic because the valuation of outcomes in SROI makes impacts comparable across individuals. This is only true if a robust set of welfare weights based on the elasticity of marginal utility of income have been derived and applied to the values as prescribed in the social welfare function approach. But this is not the case in SROI and an unfortunate result of SROI not properly dealing with the issue of interpersonal comparisons is that **SROI actually weights the interests and outcomes of richer people *higher***, which will direct resources to them at the expense of poorer groups.

The reason for this is that ceteris paribus a rich person will value a given outcome more than a poor person does simply because the marginal £1 to the rich person has much less value than it does to the poor person (welfare weights solve for this problem by weighting upward the impact on poorer people).

Now, this is not to say that SROI is a regressive approach. In many ways it is progressive in that it allows people who are not normally heard to have a voice and often this will be those who are disadvantaged and from poorer groups. But, SROI does not go far enough because even though these people are allowed a voice the valuation methods used in SROI eventually end up weighting the interests of richer people higher. Now I am sure that this is not the intention of SROI given its stated aims of creating a more equal and fair society, rather it is the direct consequence of SROI's reluctance to engage with established research on key technical areas in SIM. The question of interpersonal comparisons needs to be addressed urgently in SROI.

3. SROI's views on stakeholders can be too narrow

SROI is fairly strict on the principle of involving stakeholders throughout the process and analysis. This is *usually* a good thing and it is something to be applauded. Intuitively, involving stakeholders seems a morally right thing to do and one that aligns with our intuitions about democracy and fairness. But we have to note that at times this can be problematic for SROI and to be fair this has been acknowledged to some extent in SROI supplementary guidance on stakeholder involvement (Social Value UK, 2013). Four problems related to stakeholder involvement are that,

i)   Sometimes a social impact assessment *has* to be made *without* recourse to stakeholder involvement. For example, assessments of interventions for people with mental health illnesses, very young children or animals often cannot engage stakeholders in a meaningful way.

ii)   Stakeholders may be poorly informed.

iii) There are likely to be times when budget constraints and tight deadlines restrict full stakeholder engagement.

iv)   Values for certain outcomes can be held by non-stakeholders as well as stakeholders. This relates to the concept of **non-use value**, which is a value that I might place on an outcome even though I get no direct use or impact out of it. This is because I may value the benefits it derives for others

(altruistic value) or in the future (bequest value), or I may value something purely for its existence (existence value). These types of value arise because individuals generally place the utility of others in their own utility functions. Non-use value can represent a substantial proportion of the overall value of an outcome and hence must be recognised in SIM as it is in CBA. A narrow focus on stakeholders will miss out this important value.

The fourth issue related to non-use value is a key one and one which has not been discussed in the SROI literature to date. Although contrary to common perceptions CBA can have a high level of stakeholder engagement: it has developed a number of methods such as revealed preference valuation methods and benefit transfer valuation methods which can deliver a robust social impact assessment without recourse to stakeholders if necessary. SROI does acknowledge that stakeholder involvement is not always possible, but it should provide guidelines on methods like benefits transfer techniques and on the important issue of non-use value.

4. The ratio calculation is susceptible to biases

A well-known finding concerning any method that compares benefits to costs is that ratio measures can be inaccurate (or even mis-used) when there are negative outcomes. SROI (correctly) states that negative outcomes need to be included in any assessment. These are negative impacts (also called negative benefits) related to the intervention in addition to the costs of implementation. Many projects will incur some negative impacts in the process of generating social impact. Take the following simple generic example of an intervention:

•   The resource costs of the intervention = -£100

•   The aggregated value of the benefits across all stakeholders = +£500

•   The aggregated value of the negative benefits across all stakeholders = -£200

SROI and CBA differ significantly in terms of how

this information is used and presented. CBA uses a **net benefit** rule, which is simply the sum of all costs and benefits. In this case the intervention has a net benefit of £200 (£500-£100-£200) regardless of how negative benefits are treated.

SROI uses a **ratio calculation** and this can be problematic because how we define negative benefits in the ratio makes a significant difference to the overall result. In this particular intervention (and for any intervention with negative benefits – which is nearly all types of interventions) there are two different results that we can derive:

i. [(Positive benefits-Negative benefits)/Costs] = [(£500-£200)/£100] = SROI ratio of 3:1.

ii. [Positive benefits/(Negative benefits + Costs)] = [(£500/(£200+£100)] = SROI ratio of 1.7:1.

Treating negative benefits as costs (ie, as part of the investment figure) in SROI will lead to a lower SROI ratio. In this particular case we can almost 'force' a doubling of the SROI ratio just by changing the way that negative benefits are treated. Clearly under a net benefit calculation as in CBA this perverse outcome does not arise.

This issue is not explicitly discussed in the SROI guidance although the guidance seems to support calculation (i) (including negative benefits in the numerator). SROI practitioners should be made aware of the potential issues here to ensure that all SROI studies are conducted using the same ratio calculation. Also, since the two types of ratio calculation have very distinct interpretations the guidance should make it clear what it means when negative benefits are incorporated into the numerator rather than the denominator.

These problems related to the treatment of negative benefits are a good example of where it becomes problematic to simply apply financial accounting principles directly to SIM. In SIM the return on investment principle becomes complex and difficult to interpret.

5. Statistical methods for inferring causality are problematic in SROI

Causal inference is the task of estimating cause and effect relationships and it is of utmost importance to consequentialist SIM[4]. To address the issue of causality SROI seeks to identify the proportion of observed change for which the intervention is *not* responsible, accounting for factors such as deadweight; displacement; attribution; and drop-off. Of the four factors deadweight is the critical one and I shall focus the discussion on deadweight here.

There is no clear definitive guidance on how to measure these four factors in the SROI guidance but some tips are provided. In regards to deadweight the main approaches set out in the SROI guide are (technical definitions/titles added by myself here):

(i) Qualitative study approach: Ask people what would have happened anyway (the counterfactual) which derives an estimate of deadweight.
(ii) Control group approach: Compare outcomes against other groups or benchmarks such as national average levels of the outcome.
(iii) Difference-in-difference (DiD) approach: Compare trends in the outcome before and after the intervention for the stakeholders against the trends for a comparison group.

It is not immediately clear how the approach in SROI aligns with the two main theoretical frameworks used in statistics and the social sciences: the **Rubin Model of Causality** and the **Campbell Approach**. This makes it difficult for SROI to borrow and learn best-practice methodology from these two main accepted approaches, where significant technical developments have taken place in the last few decades. This has left the SROI approach to causal inference outdated and in some places technically incorrect.

The SROI guide starts with the claim that "measuring deadweight will always be an estimate since a perfect comparison [to a control group] is not possible". This is incorrect as we have known since the foundational work in

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[4]Note that not all SIM methods assess outcomes. Those based conceptually on a deontological account of the good will be interested in other things aside from outcomes such as the processes involved in the intervention. Here causal inference may not be an important issue.

statistics by Fisher (1935) that it is possible to estimate deadweight from a perfect comparison group (one that is identical to the treatment group in all aspects except for treatment status) through a well-designed **experiment** where the intervention is randomly assigned. The experimental method is now the foundational approach to causal inference in statistics and is in the forefront of guidance and recommendations in CBA (e.g. Boardman et al., 2010). Although an experiment is rarely possible in most policy settings it provides the barometer in terms of causal inference and must be an essential part of the toolkit and knowledge of any social impact practitioner since it helps us to understand the validity of other approaches; the concept and theory underlying an experiment provides the basis for evaluating the strength of all other methods and it can help in the design of other methods that do not use random assignment. Therefore, it is imperative that SROI recognise the foundational role of experiments in casual inference, even if only at the theoretical level.

Where randomisation is not possible CBA follows the general best-practice in statistics and the academic literature by employing a range of **quasi-experimental methods**. These are methods that apply statistical fixes to the data to try and replicate what would have happened in an experiment. This is usually through the process of statistically controlling for baseline differences between the treatment and control groups. The control group approach and the DiD approach in SROI are examples of quasi-experimental methods (if they are administered properly). However, unfortunately, important assumptions and technical criteria concerning these methods are ignored in SROI.

The suggested approach to control group analysis in SROI will result in poor estimates of causality because no attempt is made to control for initial differences in the control or benchmark group. This leaves control group methods open to severe degrees of **selection bias** that render the results useless.

The reference to the DiD method in SROI is interesting and could be a very fruitful avenue for

SROI studies. However, again the technical criteria are not met. There is no discussion, for example, of the parallel trends assumption in DiD, or of the use of fixed effects methods in DiD. The parallel trends assumption is critical in DiD and if it holds it demonstrates that the results of DiD will be very robust and in many cases on a par with the results of an experiment.

There have been major technical advances in many areas for control group methods and DiD (one example would be Abadie's synthetic control method), but they have been ignored in SROI. These methodological developments have the potential to make a profound impact on the rigour of the SROI methodology if considered properly and incorporated into guidelines. They have already been incorporated with great success into CBA and other forms of policy evaluation.

Another key problem with how these approaches are set out in SROI is that there is no discussion or recommendations on **statistical inference testing**. Inference testing is the procedure of checking whether the results are statistically significant and not just due to chance (because of, say, the way that the data happened to have been collected). Statistical inference testing is a critical requirement of all types of impact analysis.

The other remaining approach to impact measurement in SROI is the **qualitative study approach**. This method is highly problematic for the purpose of estimating impact. It can be useful as a tool for providing contextual information but as a tool for measuring impact it will nearly always provide biased estimates (usually overstatements) of impact. Asking people about the impact that some intervention had is problematic because (i) numerous studies have shown that people are unable to accurately predict the counterfactual for themselves (Hastie and Dawes, 2010); (ii) people are very adept at finding patterns in data and outcomes that they want to find (Goldacre, 2008); (iii) people provide socially desirable answers (even if the impact was insignificant people may be driven to say that there was an impact to please the survey enumerator);

(iv) cognitive dissonance means that people will re-align their beliefs to fit their actions (if I spent the time to go through the intervention then it must have had an impact); (v) these types of studies are usually administered on small sample sizes meaning it is not possible to carry out statistical inference testing. Qualitative approaches do not in any way attempt to replicate experiments and for this reason they are known as a **non-experimental** method.

Numerous studies have shown that non-experimental methods provide hugely biased estimates of impact (Goldacre, 2008) and subsequently in the UK and US non-experimental methods are not used in policy analysis for the purpose of causal inference (even the strongest proponents of qualitative techniques advise against their use as tools for measuring impact (e.g. Maxwell, 2012; Glynn and Ichino, 2012)). The accepted threshold for policy evaluation methodology in public sector organisations in the US and UK now generally sits at the level of quasi-experiments, although some organisations are even stricter only using evidence from experimental methods (eg, the National Institute for Health and Care Excellence). That is, impact analyses within policy evaluation should as a minimum use methods such as statistical controlling to replicate as closely as possible the theory of an experiment.

Given the heavy reliance on non-experimental methods in applied SROI it is likely that the vast majority of SROI studies use estimates of impact that are upward-biased, and hence ceteris paribus SROI ratios will be too high (sometimes drastically too high). SROI clearly needs to increase the level of rigour applied in estimating impact both in terms of its guidance and its training. This will also give it more credibility in public policy analysis. One misconception in some of the SROI literature is that impact analysis is an area that can be left to the judgment of practitioners. In actuality, it is an area of SIM that is technical and mathematical in nature with clear boundaries between what is correct and incorrect irrespective of our subjective opinions. The literature on best-practice methodology for estimating impact is vast and can be applied to SROI to improve the methodology with immediate effect.

6. The valuation theory and methodology in SROI are outdated and incomplete

Here I will focus on **primary benefit** valuation, which is the value of outcomes to individuals, rather than **secondary benefit** valuation, which is the impact on financial indicators such as tax revenues and benefit payments[5].

SROI, for the most part, relies heavily on valuation methods from CBA, but often the methods used are ad-hoc and do not acknowledge best-practice guidelines. To be clear there are two definitions of value for non-market outcomes (Hicks and Allen, 1934). These were defined by Bockstael and McConnell (1980):

Compensating surplus (CS) is the amount of money, paid or received, that will leave the individual in her initial welfare position following a change in the outcome.

Equivalent surplus (ES) is the amount of money, to be paid or received, that will leave the individual in her subsequent welfare position in absence of a change in the outcome.

CS and ES are inextricably linked to welfare; they are exact monetised measures of welfare change and are hence suitable for CBA. These measures of value apply to the valuation of both the benefits *and* costs of an intervention. From a non-technical perspective CS and ES can be translated in terms of willingness to pay (WTP) and willingness to accept (WTA) as follows.

[5] SROI recognises this distinction through the terms cashable outcomes (secondary benefits) and non-cashable outcomes (primary benefits).

The relationship between CS, ES, WTP and WTA

	Compensating surplus	Equivalent surplus
Welfare gain	*WTP for the positive change*	*WTA to forego the positive change*
Welfare loss	*WTA the negative change*	*WTP to avoid the negative change*

This shows that any given outcome can be valued in two different ways: as CS or as ES. WTA values tend to be higher (on average 4x higher) than WTP for the same good due to loss aversion (Kahneman et al., 1991; List, 2003) and the binding constraint of income on WTP (OECD 2006) and so the choice between a WTP or WTA value is absolutely crucial. The prevailing property rights concerned with the non-market good/service should determine whether WTP or WTA is suitable. Best-practice in CBA dictates that WTP measures be used except for in cases where stakeholders have an initial right or claim to the outcome in which case WTA measures can be used.

CS and ES are clearly different to the concepts of market **prices** and **costs** which, except for under a very strict set of assumptions about the efficiency of markets, do not generally provide measures of welfare change (Varian, 1992). They therefore do not usually provide accurate estimates of the value that people place on outcomes and hence the justification for using prices and costs in SIM is weak both in terms of ethical considerations and in terms of theory.

(It should be noted here that outside of the theory of CS and ES in economics there is actually no accepted applied theory of valuation for non-market goods and outcomes in any other social science. There are a number of conceptual theories in philosophy, but none can be applied in a practical sense. The economic theory of valuation has dominated policy discourse on valuation for many decades and therefore the theory of CS and ES represents the best theoretical approach for valuation in SROI.)

The initial problem in SROI is that SROI does not set out a comprehensive theory of valuation. And secondly, because of this, best-practice guidance and methodology in valuation have not translated across to SROI. In the guide SROI practitioners are provided with a very brief introduction to some of the non-market valuation methods in economics (e.g., stated preference methods) without any discussion of what they should be measuring (ideally in theory), or of what the best-practice techniques are. This unfortunately could render valuation in SROI ad-hoc and outdated. And this is evidenced by the frequent (mis)use of inaccurate or inappropriate values in SROI studies.

There are four types of valuation methodology that can be used to estimate values for non-market outcomes in line with CS and ES. Values can be estimated from market data using **revealed preference** or **revealed behaviour** valuation methods or through **stated preference** surveys where people are asked directly their willingness to pay. A fourth alternative that has become popular recently is the **wellbeing valuation** approach, which uses data on people's subjective wellbeing to estimate values. All of these methods can derive estimates of CS and ES. These methods are acknowledged in the SROI guidance, but the relevant theory and methodology is not covered in any detail. This has resulted in a number of significant problems concerning valuation in SROI:

(i) SROI ignores the concept of non-use value, which as we have discussed above is a key component of social value.

(ii) SROI has ignored some of the key developments in these valuation methods. For example,

SROI has not acknowledged problems related to endogeneity bias in revealed preference studies and subsequent trends to use instrumental variables methods to address this. SROI has also not acknowledged the vast literature on biases in stated preference studies, such as hypothetical bias, anchoring effects, embedding effects, and strategic bias. Nor has it acknowledged the range of best-practice tools and methods for addressing many of these problems and biases, which includes the use of entreaties in the survey, payment card mechanisms, and ex-poste statistical methods designed to statistically control for these biases (Two editions of the Journal of Environmental and Resources Economics (in 2005 and 2010) are dedicated to methods that have been developed to deal with preference anomalies in stated preference studies). Finally there have been a number of technical developments in the wellbeing valuation approach that have yet to be translated over to SROI. The resulting problem is that SROI provides no guidance on what a good or bad valuation study looks like and so runs the risk that invalid values from poorly executed valuation studies are used in SROI studies and in valuation resources such as the Global Value Exchange.

(iii) The brief nature of the guidance on valuation in SROI restricts SROI practitioners from learning how to undertake their own valuation studies. Most values in SROI studies are based on secondary sources.

(iv) SROI has not acknowledged methods such as **benefit transfer techniques**, which allow the analyst to transfer results from a published stated preference study to their own particular case study through the use of statistical techniques to reweight values.

Currently a vast number of valuation methods are applied in SROI, some of which we know (from fairly rigorous proofs in economic theory) are biased estimates of value. For example, it is possible to find SROIs that have (implicitly) used a Marxist labour theory of value, which has no support in economic theory anymore and has been shown to understate the values of non-market outcomes. There seems to be some misconception that proxy values can be selected at will

based on subjective opinions about their validity. But, in fact - as with the case of causal inference - valuation is a technical field and judgments about the credibility and suitability of a value in SROI should be based on what we know about the relative rigour and pros and cons of the different approaches.

SROI must recognise the advancements and developments made in CBA and in economics in the field of non-market valuation and ensure that its methods are up-to-date and in line with best-practice in this area. I believe that this need to redevelop guidance on valuation has also been recognised by the SROI sector.

7. The meaning of the SROI ratio is vague

Here I am referring to the interpretation of 'investment' in the term Social Return on Investment. The confusion arises due to complications related to the measurement of costs (ie, the investments). There are two possible options here and neither is right or wrong, but they need careful interpretation.

As discussed above the approach taken in CBA is to measure costs in the same way as benefits in terms of impacts on wellbeing. Costs are therefore measured as losses in wellbeing. If we think in terms of CS this is equivalent to a WTA value. The terminology given to costs measured in this way is the **opportunity cost** of the intervention. This recognises that the cost to society of an intervention is the value of the opportunities forgone rather than the cost of the resources. This means that the net benefit calculation in CBA actually represents the total social benefits of the intervention minus the total social costs of the intervention.

SROI, on the other hand, estimates costs at market prices of the resources rather than as opportunity costs. One problem of this approach is that the true costs of the programme to society are understated especially where resources with no market price are used. As it currently stands in SROI since inputs (both monetised and non-monetised) are usually costed at market price or at resource costs, the SROI ratio accounts for the

costs mainly to the organisation and should be interpreted as follows[6]:

"The SROI ratio shows the social return on costs to the organisation of the intervention".

If SROI used opportunity cost measures instead of market prices for resources, then the costs represent costs to society more widely in terms of the forgone opportunities of the investment and the SROI ratio would be interpreted as follows:

"The SROI ratio would show the social return on costs to society of the intervention".

Another way to put it is that CBA looks at the full cost to society of generating social value, whilst SROI mainly looks at the cost to the organisation of generating social value.

This is a nuanced difference, but one that is very important in SIM and so we need to be very clear about what costs mean when interpreting SROI. Compared to CBA SROI does not account for the full cost to society of an investment and only captures a much narrower subset of costs related to the organisation. Opportunity costs are the right measure to use for the purpose of assessing public sector policies as it accounts for the full impact on society. Public sector policies are funded by society (through tax revenues) and so the costs of these policies must be calculated from the perspective of society in general. If SROI is interested solely in the costs to the organisation then resources costed at market prices (as is currently the case in SROI) is the correct way to go. The point here is that SROI must make this clear at the outset in order to allow for a clear interpretation of the result.

A second, and very crucial, recommendation would be that if SROI is indeed interested in measuring costs mainly from the perspective of the organisation, then SROI *should not* be used in social impact evaluations of public policy interventions as it will understate the true cost of the intervention to taxpayers and society.

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[6] In practice it is probably a little bit more complex than this. The SROI guide does stipulate that non-monetised inputs such as volunteer hours be costed. This would partly pick up some of the costs to society. But the full true cost to society of the intervention overall could only be picked up if *all* monetised and non-monetised inputs were valued at opportunity cost rather than at market or resource prices. For the purposes of this discussion, therefore, this definition will by and large suffice.

Discussion and concluding remarks

SROI is a quickly growing approach, but there are a number of key problems and challenges that must be addressed in order to improve the academic validity of the approach. Fortunately, there is a vast body of research that SROI can draw on and many of the issues discussed here can be overcome simply by a clarification of standpoint. For example, problems related to the interpretation of the SROI ratio can be overcome by the adoption in SROI of a consistent set of guidelines for practical application and interpretation. Issues on interpersonal comparisons could also be fairly easily dealt with through use of accepted welfare weighting factors that are commonly used in CBA and other methods.

Issues around normative ethics and foundations, valuation, causal inference and rules on stakeholder engagement in certain scenarios are more complex to address, but they can in large part be addressed with the tools and knowledge that we have today. Some of the solutions can be borrowed directly from CBA, whilst others may need creative and more organic solutions from within SROI itself. Either way, these issues need to be addressed.

SROI must learn from the challenges that have been discovered in other areas of SIM and address them directly but at the same time make sure that it keeps its own unique advantages so that it can make a meaningful contribution to the field of SIM going forward. This, I believe, will also increase its reputation among policymakers as a serious alternative to other currently accepted methods such as CBA. It is hoped that this paper provides a step towards this goal.

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