

SOCIAL RETURN ON INVESTMENT IN THE CONTEXT OF REHABILITATION

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SROI, sanoista *Social Return On Investment*, on arviointikehikko, jossa pyritään perinteistä taloudellista arviointia laajempaan näkökulmaan. SROI-arvioinnin tausta on kustannus-hyötyanalyysissä (KHA) ja sosiaalisessa kirjanpidossa. SROI kehitettiin alun perin Yhdysvalloissa 1990-luvun lopussa ja siitä on 2000-luvulla tullut suosittu etenkin Iso-Britanniassa, jossa sitä on jatkokehitetty ja käytetään etenkin järjestöjen arviointiin. Suomeksi SROI:sta käytetään esimerkiksi käännoiksi *investoinnin yhteiskunnallinen, sosiaalinen tai yhteisötuotto*.

Tässä tutkimuksessa SROI:ta tarkasteltiin kuntoutuksen kontekstissa. Tutkimuskysymykset ja niihin liittyvät tavoitteet olivat:

- Kuinka SROI:ta on hyödynnetty kuntoutuksen taloudellisessa arvioinnissa kansainvälisesti? Tähän kysymykseen vastattiin toteuttamalla scoping-kirjallisuuskatsaus.
- Kuinka SROI-arviointia voidaan hyödyntää suomalaisten sosiaali- ja terveysjärjestöjen arvioinnissa? Tähän kysymykseen vastasi toteutettu tapaustutkimus.

Scoping-katsaus toteutettiin kaksivaiheisena ja sen yksityiskohtaisempi kuvaus löytyy tutkielman liitteistä. Toisen vaiheen lopuksi kahdeksan (8) SROI-tutkimusta valikoitui laadulliseen tarkasteluun. Kuntoutuksen laajalta kentältä nämä tutkimukset koskivat alkoholi- tai päihdehäiriöitä (3), mielenterveyden häiriöitä (1), kehityshäiriöitä (1), oppimisvaikeuksia (1), dementiaa (1) sekä ortognaattista (suu- ja leukakirurgia) hoitoa (1). Tutkimusten SROI-suhdeluvut (luku, joka kuvaa tuottoa panostettuun euroon nähden) vaihtelivat välillä 1,17:stä 6,50:een, mutta lukuja ei voi suoraan verrata keskenään.

Tapaustutkimuksessa tehtiin SROI-arviointi järjestölle, joka tekee matalan kynnyksen mielenterveystyötä eräässä suomalaisessa kaupungissa. Järjestöä tuetaan veikkausvoittovaroilla sekä kaupungin toimesta. Järjestön tuottamat hyödyt arvioitiin SROI-menetelmälle ominaiseen tapaan rahamääräistämällä järjestön tuottamia toimintoja (vaihtoehtokustannukset). Järjestön SROI-luku oli perusskenaariossa 1,04. Herkkyysanalyysissä verrattiin suurimpia rahamääräistettyjä hyötyjä esimerkiksi psykiatristen hoitopäivien kustannuksiin.

Tutkielma tarjoaa jäsenneltyä tietoa SROI-menetelmästä ja sen käytöstä, ja voi antaa tullevalle tutkimukselle joitakin näkökohtia koskien tätä toistaiseksi varsinaisen terveystaloustieteen kentällä vähän käytettyä arviointimenetelmää.

Abstract

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ILOMÄKI, TIMO: Social Return on Investment in the Context of Rehabilitation

Master's thesis, 54 pages, 4 appendices (13 pages)

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Social Return on Investment (SROI) is an evaluation framework that aims for a broader view than the traditional economic evaluation methods. SROI has its background in cost-benefit analysis (CBA) and social accounting. It was originally invented in the US during the late 1990s and became popular during the 2000s especially in the UK, where it has been further developed and used widely in evaluating non-profit organizations.

In this thesis, the SROI framework was studied in the context of rehabilitation. Research questions and aims attached to them were:

- How has SROI been utilized in economic evaluation of rehabilitation internationally? To answer this question, a scoping-review was carried out.
- How can SROI be utilized in evaluating Finnish social welfare and health organizations? A SROI case study was conducted to answer this question.

The scoping review was carried out in two phases and the detailed version of the review process can be found in the appendices section. At the end of the second phase, there were eight SROI studies chosen for a qualitative synthesis. From the broad spectrum of rehabilitation, the studies were concerning substance use disorders (3), mental health (1), developmental disorders (1), learning disabilities (1), dementia (1) and orthognathic surgeries (1). The SROI ratios – a figure that tells the amount of return per unit of currency invested – between studies were ranging from 1.17 to 6.50, but they cannot be directly compared to each other.

In the case study, a SROI evaluation was conducted for an organization that provides low threshold mental health services in an anonymized Finnish city. The organization receives funding from public agencies; these funds were treated as the investment. The benefits created by the organization were evaluated with a common SROI procedure of monetizing the activities. The SROI ratio in the basic scenario was 1.04. Break-even analysis was utilized as a sensitivity analysis. The largest shares of the benefits were compared to the DRG costs of psychiatric inpatient days.

This thesis provides a structured presentation of the SROI method and its use and can provide future research with some aspects on this multidisciplinary framework of economic evaluation that to date has been rarely used in actual health economics.

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1 INTRODUCTION

Social Return On Investment, more commonly abbreviated as SROI, is a concept to account for social value (Dyakova et al. 2017); framework for accounting for a broader measure of value (Fischer & Richter 2017); or even described as a “form of evaluation”, that is “not an esoteric, academic exercise” (Yates & Marra 2017). It draws from cost-benefit analysis (CBA) and social accounting and can be used to assess the value that is argued to be out of the scope of traditional CBA or Cost-effectiveness analysis (CEA). Out of more than 40 approaches for measuring social impact, SROI-analysis is one of the most widespread (Stevenson et al. 2010; Maier et al. 2015).

Different definitions of SROI listed above describe but the meaning; an enthusiasm that arguably is attached to the concept. There is a body of critical literature considering SROI which will be examined in this thesis. Critiques include: SROI does not measure real value and sometimes measures only hypothetical value, valuations are often based on questionnaires (willingness to pay, WTP or Willingness to accept, WTA) or opportunity costs using doubtful substitute (proxy) products/services (Arvidson et al. 2013), to name only a few shortcomings. The leap from ROI to SROI might be farther than expected (Gargani 2017). On the other hand, SROI is “welcomed as progress towards more open-mindedness and discursive rationality” (Maier et al. 2015.)

The research questions of this thesis are the following:

- How has SROI been utilized in economic evaluation of rehabilitation internationally?
- How can SROI be utilized in evaluating Finnish social welfare and health organizations?

There are two research aims that follow from the research questions. Firstly, (1) by conducting a scoping review, to see how and if SROI has been utilized in economic evaluation of rehabilitation. The second (2) aim is to carry out a rehabilitation related SROI evaluation. The third, an adjunct aim, is to develop an economic perspective on the relation between the Finnish health NPOs and their (public) funding. There has been an active public discussion about the role of the main funder STEA, which operates under the Ministry of Health and Social Affairs. Or rather, the discussion has been about the role of the

public lottery company Veikkaus, from whose revenues the budget for STEA is drawn. But with regards to this thesis, this is purely a coincidence.

For the first aim, a scoping review is conducted on the concept of rehabilitation in connection to SROI. What *scoping review* and why? Scoping review is a type of review that is often used in a situation, where it is still unclear, what specific questions should be posed and could be valuably addressed. At this point, it is very unclear, how SROI is related to the mainstream economics tradition (as we will find out, it really isn't) and to other methods of economic evaluation. A key feature in scoping-reviews is the inclusion of the so-called grey literature, which is an important feature considering this study. (Peters et al. 2011.) The majority of SROI evaluations are done in-house or by consultants (Hutchinson et al. 2018). Krlev et al (2011) reported that just 1% of SROI studies included in their meta-analysis was from peer-reviewed literature; for SROIs focusing on public health, the figure was 10% as of 2015 (Banke-Thomas et al. 2015).

There has been a meta-analysis of all types of SROI studies published between 2002 and 2012 (Krlev et al. 2012), a systematic review on SROIs used in evaluating public health interventions (Banke-Thomas et al. 2015) and even a systematic overview of systematic reviews on economic evaluations (CEA, CUA and CBA, but not SROI) on health-related rehabilitation interventions (Howard-Wilsher et al. 2016), but none in specifically health-related rehabilitation and SROI. This study aims to fill that niche.

Why, then, rehabilitation? There are personal, economic reasons and public, noble reasons behind this choice. Following Kahneman (2011) it is better to start with the selfish reasons and end with the broader, "social" reasons, since it is the end of the story that readers will remember. This thesis is drawing also on the work we have done in our SROI unit at the Foundation for Rehabilitation (Finland). The author was familiar with the concept of SROI before, had read a number of articles that were sought out in the review process, and most importantly, had been involved in several SROI evaluations. The case study that is used in this thesis was carried out by the author in collaboration with the partner organization.

Rehabilitation is stated to be the “(k)ey for health in the 21st century” (The World Health Organization [WHO] 2019). This is due to global megatrends, such as population aging and the rise of non-communicable diseases. Not all believe that the field and stakeholders in rehabilitation are ready for this immense challenge (Cieza 2019). Instead, according to Cieza, the best way to ensure rehabilitation becomes an actual priority in the 21st century, is to “bring together the distinct portraits of rehabilitation under the concept of functioning” (ibid.). For now, in this thesis, the word rehabilitation is rehabilitated as an umbrella term. The implications of this choice are discussed in the last chapter (Chapter 6).

Rehabilitation itself is a broad concept that can include:

- physical therapy (after amputations, injuries, strokes etc.)
- occupational therapy (helping e.g. injured workers to return to work, but also coping for workers with common mental disorders, CMDs)
- drug rehabilitation (i.e. AA- and NA-groups)

And can hold many other definitions outside the field of health and health care, such as within the fields of political science and criminology/penology. As this is a thesis on health economics, the focus will only be on rehabilitation that has some link to individual or public health. However, it is important to note that rehabilitation in the context of health does not only refer to curing disease or injuries. It can also mean restoring the ability to function *in spite of* an illness or disability. A medical dictionary (Dorland 2012) definition of rehabilitation includes:

1. the restoration of normal form and function after illness or injury.
2. the restoration of the ill or injured patient to optimal functional level in all areas of activity.

In the case study that will be presented in Chapter 5, the latter definition, *all areas of activity*, is an important attribute. The case is dealing with so-called outpatient care in the field of mental health. The organization within the case study is providing a low-threshold center for people with CMDs to visit. These kinds of outpatient care facilities have become to have an important role to play in the rehabilitation of CMDs in the Finnish context (See THL 2019). SROI on the other hand, is widely used in evaluating non-profit organizations.

There are couple of reasons which can be found supportive for choosing SROI as an accounting method for specifically rehabilitation (interventions). First, rehabilitation is a manifold concept. Even if other-than-health-related meanings of rehabilitation were ignored, there is still a great variety in things rehabilitation is concerned with. How to compare incommensurable results of different kinds of interventions? An easy answer is – for those familiar with health economics – cost-effectiveness analysis (CEA) and quality adjusted life-years QALYs. These have their own challenges, such as the fact that different utility elicitation instruments come up with very different results¹, that the QALY doesn't reflect preference differences among patients and claimed bias against disabled people (Partnership to Improve Patient Care [PIPC] 2017). Without going too much into QALYs potential flaws, SROI's potential strong point is stated to be the so-called *triple bottom line*, which refers to social, economic and environmental return (taking these into account is not in fact unique to SROI, see Fujiwara 2015). SROI also brings other types of benefits into the equation in addition to pure effectiveness of single treatment. The comparability of one SROI-evaluation to another, especially with regards to monetization, is a question of its own. However, in theory, comparison between different SROI-ratios could provide a unifying concept for a broad spectrum of interventions. Was this to happen, the standardization of SROI would have to take a big leap forward.

Secondly, rehabilitation deals with relatively long periods of time. A simple case in point is a surgery, where rehabilitation mostly takes place in the post-operational phase (although there is also the possibility of pre-operational rehabilitation). As mentioned above, there are a lot of conditions, where the aim of rehabilitation is to facilitate living *in spite of* a certain condition, so it can even be a life-long process. This links rehabilitation to an important aspect of SROI and other economic evaluation frameworks: discounting. Discounting is a process where the net present value of an investment, which an evaluator might call “the counterfactual deposit”, is derived through deflating the future value with a specific discount rate. It is “interest the other way round”. (Gargani 2017, 118.) According to a textbook in rehabilitation (Ahonen 2008, 671) this seemingly technical matter has a big principal and practical significance in evaluation of rehabilitation, since the costs of rehabilitation usually are realized at once but the benefits only proportionally in time.

¹ On the other hand, cost-per-life-years and cost-per-QALY assessments only differ modestly (Chapman et al. 2004)

Thirdly, perhaps the strongest argument for using SROI as an assessment tool, is the protocol that directs the analyst in collaboration with the subject of evaluation, the stakeholder involvement (see SROI principles in Chapter 2.2). This is a vital part of a rehabilitation process as well. Without, for instance, commitment, it is often unlikely that a person is prone to rehabilitate. This third reason could be somewhat in contradiction with the end of the first argument (SROI as a unifying concept for evaluation): if SROI was used as an accepted measure for comparing different investments, would the stakeholders themselves really be the best to judge whether they create more social value than someone else? On the other hand, it would not change the status quo drastically, since the organizations competing for funding are now using just different measures to prove their effectiveness to the main funder, as in the Finnish case which will be discussed in Chapter 2.3.

Where does this work stand in the tradition of health economics? Revising Williams' approach/definition (1986), Culyer's and Masurova's (2005) paper *Top Articles in Health Economics* defines, based on the reading lists conducted by active teachers of health economics in different universities, the fields of health economics as: a) health and its value, b) determinants of individual and population health other than health care and health insurance, c) demand for health and health care, d) supply of health services and e) health insurance. These five are firstly the "analytical engine room" (ibid.) of health economics. But there are still few areas that are more of an applied health economics: f) market analysis, g) cost-effectiveness, cost-utility and cost-benefit analysis and lastly h) efficiency and distributional aspects of health policy. The seventh (g) is the category where this thesis belongs to: the applied area of different hyphen-separated evaluation frameworks, which are discussed in chapter 2.1.

2 THEORETICAL BACKGROUND

2.1 SROI and its antecedents

SROI is based on Cost-Benefit Analysis (CBA) and Social Accounting. Though the term Cost-Benefit Analysis dates all the way back to mid-19th century, when Jules Dupuit (1984, cit. Sandmo 2011) published his *The social profitability of a project like the construction of a road or bridge*, the potential of using CBA for evaluating non-profit organization performance was noted as late as 1995 by Young and Steinberg. According to Cordes (2017) this was still years prior to the evolvement of SROI, however, it must be pointed out that the pioneer methodological work leading to SROI was conducted by Roberts Enterprise Development Fund in 1996 – and was called *social impact measurement tool* at that time (Nicholls 2017).

According to Cordes (2017, 102) “the purpose of undertaking cost benefit analysis is similar, if not identical to those of undertaking analysis of social return on investment”. The CBA framework provides a framework for SROI analysis, which is a developmental step from ROI analysis. The building blocks of CBA, such as social benefits, costs and transfers, and willingness to pay and accept, seem, according to Cordes (ibid.) particularly well-suited for questions that arise when conducting SROI. Schober and Then (2015) have also noted close similarities between SROI and its predecessor, but they see that the focus in CBA is more narrowly economical. According to Cordes (2017, 102), the social accounting framework in CBA is distinctively different from the one used in SROI and SROI is further distinguished from CBA by its stated mission for non-profit organizations and social enterprises.

Banke-Thomas et al (2017) provide an excellent summary of similar and distinctive characteristics of SROI compared to other evaluation methods (CBA, cost-effectiveness and cost–utility analysis, which is referred to as a sub-type of CEA) routinely applied in health economics. Common features of these methods include basic things such as costs and discounting. Distinctive features of SROI include the creation of a theory of change which captures the associations between inputs, outputs and outcomes, the engagement of stakeholders and valuing outcomes which are not typically measured in other types of economic evaluation (Hutchinson 2018). The modified and shortened (e.g. similarities were excluded) version of the table by Banke-Thomas et al (2017) is depicted in Table 1 below.

TABLE 1: Characteristics of SROI compared to traditional forms of economic evaluation, modified and shortened from Banke-Thomas et al. 2017.

<i>Evaluation framework</i>	Cost-Effectiveness analysis (CEA)	Cost-Utility Analysis (CUA)	Cost-Benefit Analysis (CBA)	Social Return on Investment (SROI)
<i>Benefits linked to</i>	health improvements	Same as CEA	Health and non-health impacts	Same as CBA + “Triple bottom line”. (+ occasionally seeks to account for negative effects of interventions)
<i>Benefits reported</i>	as natural units, e.g. lives saved	QALYs gained/DALYs averted	Monetary value/welfare benefit, lists	Same as CBA + financial proxies for intangibles
<i>Stakeholder engagement?</i>	No	No	No	Yes
<i>Theory of change</i>	No	No	No	Yes
<i>Main output</i>	Incremental Cost-Effectiveness Ratio ICER	ICER	Benefit-Cost Ratio (BCR)	Social Return on Investment ratio SROI
<i>Interpretation of main output of analysis</i>	Intervention with higher ICER is better	same as in CEA	BCR > 1 is worthwhile investment	SROI ratio >1 is worthwhile investment
<i>Relevance</i>	in priority setting and resource allocation	same as CEA	same as CEA and CUA	Same as others + stakeholder relations. building, accountability framew. & mgmt. tool.

2.2 Key institutions, concepts and misconceptions

REDF, NEF and Social Value UK

There have been couple of key organizations that have been developing and promoting SROI besides the above-mentioned Roberts Enterprise Development Foundation where SROI method was founded (REDF 1996; Nicholls 2017). The New Economics Foundation (NEF), a UK-based think tank, has been active in developing SROI methodology, as well as other “goodie”-affairs, such as alternatives to GDP/GNP as a measure of welfare (see Marks et al. 2006) and also a “rival” measure of social impact, Local Multiplier or *LM3* (Hall & Millo 2018). The NEF is an active member in the Social Value UK network that published the most recent version of *A Guide to Social Return On Investment* (Nicholls et al. 2012), in collaboration with The UK Cabinet Office. Social Value UK’s database, as is to be covered in Chapter 4 (see Chapter 4.2, part II), was a key source of so-called grey literature in this thesis. Social Value UK also provides a *Global Value Exchange* online platform, where users can set up and monitor their own SROI projects, and a database that provides them with proxies for outcomes and indicators.

There are, in principle, two kinds of SROI evaluations, *evaluative* and *prospective* SROI. A prospective SROI is a forecast, that can help the organization to allocate its resources in the right way based on most likely scenarios. A prospective SROI is probably more used in organizations' planning purposes. An evaluative SROI is conducted retrospectively and is based on outcomes that have taken place. To carry out an evaluative SROI, an organization needs the right data on outcomes, which is the reason why it is usually recommended to start with a prospective SROI. Based on the forecast of potential social value, the next round of evaluation is easier, as it will be more clear which data is needed to perform a full analysis in the future. (Nicholls et al. 2012, 8–9.)

SROI often involves a mixed methods design. Qualitative methods are used to establish which outcomes are of most importance and have an impact on participant's lives and ultimately combine to create social value. Quantitative approach creates a monetary representation of these outcomes and their value. (see e.g. Willis et al. 2018.)

SROI, social investments and Social Impact Bonds

Although one might think, that three recent trends, Social Return on Investment, social investments and Social Impact Bonds (SIBs) would be tied together, they share in fact no common history. SROI and SIBs are two separate phenomena or movements. Even though both are widely used in third sector conditions and evaluation is in the core of both movements, SIBs and SROI have different goals. Another thing is the very word of 'social investment' which has appeared in EU discourse since the adoption of Lisbon Agenda in 2000 (Nolan 2013, 459).

Nolan (2013, 463) points out, that the central conceptual question is, what differs 'social investments' from other forms of social spending? There have been similar kind of ideas for example in the long Nordic tradition of 'productive social policy' or within the Dutch emphasis on social policy as a productive factor. In economics, an investment is traditionally understood as spending on goods that are not consumed but are to be used for future production. However, the term 'human capital' could be closest to what social investments are used for. Arthur Pigou wrote already in 1928 that "*(t)here is such a thing as investment in human capital as well as investment in material capital. So soon as this*

is recognized, the distinction between economy in consumption and economy in investment becomes blurred". Another writing by T.W. Schultz (1961) in American Economic Review, titled "Investment in Human Capital", distinguishes between pure expenditures, pure investments, and something in between them. But since Pigou and Schultz are rarely mentioned in connection to SROI, we let this matter unsettled in this thesis, apart from a small remark in the discussion.

If social investment is arguably not an actual investment, neither is SIB a real bond in a strict sense of the word. Rather, it is a contract of impact for future social outcome. SIBs are also called Pay for Success contracts (PFS). In a SIB, an agreement is made between public sector or a governing authority, the social service provider (often an NPO or TSO) and private investors. A bond-issuing organization collects funds from investors. If the outcomes agreed upfront are achieved, the government proceeds with payments to the bond issuer or investors. (Galitopolou 2016.)

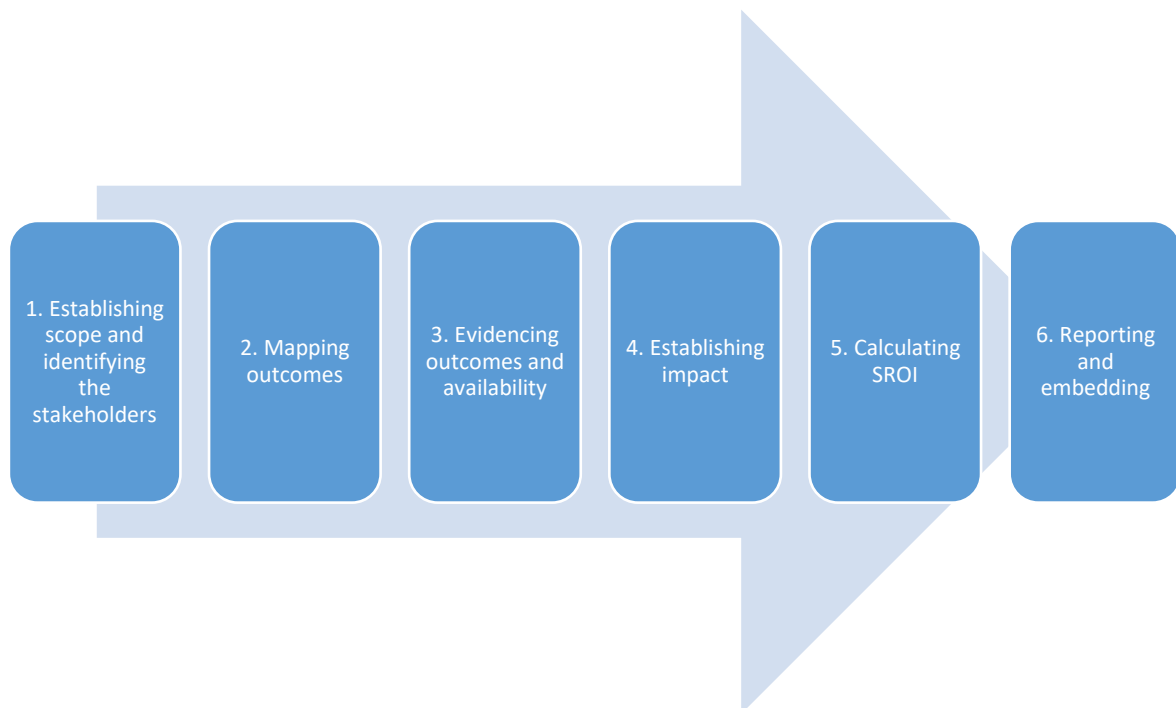
SIB only seeks to measure pre-identified outcomes to program participants whereas SROI is mapping all possible social value a program may create (the so-called triple bottom line). SIBs typically focus more on easier-to-measure impacts and outcomes that can be realized within the timeframe of the contract. All parties involved in the contract will need to agree on the timing of the measurement, the outcomes, and the methodology by which the program will be evaluated. This narrows the set of outcomes assessed and can lead to favoring of interventions with traceable outcomes within a single system even if the impacts may accrue over different systems. (Fischer & Richter, 2017)

Fischer and Richter (2017) examined the ten PFS contracts launched in the US up to 2016 and concluded that the outcomes were relatively short term (not including things like changes of being employed), pertained to one or two systems and that the payment metrics were tied to relatively short-term usage of government funded services that the projects sought to reduce (e.g. jail bed days, foster care days). SROIs are often focused on a broader set of potential outcomes and longer periods of time, but this is a challenging goal and tends to lead to less reliable outcomes since counterfactuals are harder to identify (ibid.).

In a typical SIB setting, an independent evaluator is included to assess the intervention effect estimates. Could or has SROI been used in evaluation of SIBs? So far this has rarely been the case (except for couple of examples in the UK), but SROI has, according to Fischer and Richter (2017, 108) other things to offer for SIBs. Firstly, SROI can inform and motivate interventions under SIB contracts. Secondly, requests for proposal (RFPs) for PFS projects can encourage consideration of SROI analyses, even when payments are dependent upon all potential outcomes.

2.3 SROI process and principles

We have already introduced SROI as a concept, but how are SROIs conducted in practice? In 2009 the UK Cabinet Office published *A Guide to Social Return on Investment* and updated it in 2012 (Nicholls et al. 2012). Within the guide, both the six stages of conducting a SROI and the seven SROI principles are stated.



GRAPH 1: The six stages of a SROI process, based on Nicholls et al. (2012)

The first three stages comprise the data collection. The fourth stage is where data collection and analysis overlap. The fifth is the actual analysis phase and the sixth is the data dissemination stage. Without going into more details of the process, the seven SROI-principles (from Nicholls et al. 2012) are stated here – and in the appendix A, with full description. The principles include:

1. Involve stakeholders
2. Understand what changes
3. Value things that matter
4. Only include what is material
5. Do not overclaim
6. Be transparent
7. Verify your results

The 1st principle *involve stakeholders* includes informing what measures are needed for a SROI-evaluation and how the valuation is done. According to the Guide to *SROI* by Social Value UK (Nicholls et al. 2012) “(s)takeholders are those people or organizations that experience change as a result of the activity and they will be best placed to describe the change”. The second principle *understand what changes* refers to articulating how the changes made by a program are realized and measuring the effects. The relationship between the three key concepts – inputs, outputs and outcomes – is called a “theory of change’ or a ‘logic model”. (Nicholls et al., 2012, p. 29; Shaw 2018.)

The Impact Map, a central element of SROI framework, is where the theory of change is applied in practice. An impact map visualises how the inputs deliver the outcomes. The third principle, *value things that matter*, is interlinked with the second and the fourth principle *only include what is material*. Outcomes are valued through financial proxies in an impact map, where only material outcomes should be included. What is material, however, is left to be decided by the stakeholders. This fourth principle is where external assurance becomes of special importance. (Nicholls et al. 2012; Shaw 2018.)

Once again, a reader who is familiar with CBA can maybe recognize the similarity between SROI principles and process with the CBA process. The CBA process includes, following Boardman et al. (2006): (1) defining the goals and objectives, (2) listing alternative actions and (3) stakeholders, (4) selecting and measuring cost and benefit elements, (5) adjusting over a relevant time period, (6) monetizing all costs and benefits (7) applying discount rate, (8) calculating the NPV, (9) performing a sensitivity analysis and (10) Adopting the recommended course of action. By changing the order, we would be very close to SROI. The main difference in SROI principles is perhaps the emphasis on *not*

overclaiming (the fifth principle) and *being transparent* (the sixth principle) which seem to be a tacit counterbalancing act of *involving stakeholders* along with the seventh, final principle of *verifying the results*.

2.4 Health Economics perspectives

2.4.1 Utility and social welfare

According to Tuomala (2009, 58) most theories used by economists start with a premise that the public government maximizes or is ought to maximize common welfare. This set of thought or philosophy is called *utilitarianism* (ibid.). Despite its seemingly ‘alternative’ nature and developers such as the *New economics foundation*, SROI is still practically based on the mainstream economics’ utilitarian tradition.

A classical utilitarian welfare function is expressed (following a textbook definition by Varian 2010) by a sum of individual utility functions:

$$W(u_1, \dots, u_n) = \sum_{i=1}^n u_i \quad (1)$$

and its generalization is the weighted sum-of-utilities welfare function:

$$W(u_1, \dots, u_n) = \sum_{i=1}^n a_i u_i \quad (2)$$

where the weights $a_1 \dots a_n$ express how important each agent’s utility is to the general welfare. Furthermore, individualistic criteria for welfare may be expressed in a function:

$$W = W(u_1(x_1), \dots, u_n(x_n)) \quad (3)$$

where x_n denotes the n :th individuals consumption bundle and $u_n(x_n)$ the same individual’s level of utility. Here, the welfare function is a direct function of all individuals’ utility levels and an indirect function of individual agent’s consumption bundles. This is also called the Bergson-Samuelson welfare function (Varian 2010, 636–639.)

Samuelson has also formulated a rule considering the optimal provision of public goods (the Samuelson condition):

$$\sum MRS_{H^2} = MC = MRT$$

Which states that, for a pure public good, the same kind of condition of efficient supply as for a private good ($MRS = MC = MT = p$), can be set. MRS denotes the marginal rate of substitution ($-\frac{\Delta y}{\Delta x}$) of an individual (or a household) H, and MRT is the marginal rate of transformation ($\frac{MC_x}{MC_y}$) for the whole economy. In the model, there are two kinds of goods, private (y) and public (x), and the rate of substitution of private resources to produce public goods is ought to be balanced by their marginal costs (for each household or individual), and vice versa. In practice, MRS_H can be interpreted as tax or “an individual price”. There are different mechanisms for measuring individuals’ preferences for the demanded amount of public goods, but Tuomala (2009, 76) finds this matter to have little relevance in the Nordic institutional settings.

In the context of evaluation of public projects, if all citizens would be better off (a pareto improvement) in a situation where a certain project is funded, compared to a situation where it is not funded, the individualistic welfare criteria advises us to fund the project. If someone benefits from the projects and others do not, it is the weights of “winners” and “losers” in the social welfare function that make the difference. Tuomala (2009, 133) points out, that even though this method of decision making is accurate in all aspects, it has not much use in practice. The social welfare function is, according to Tuomala (ibid.), meant to be used as a tool for conceptualizations. It is of very little help in program evaluation practice. However, the theory of welfare creates the basis for CBA. And CBA can be understood as a set of practices acting as guidelines for public projects (ibid.).

2.4.2 Assessing value of non-market goods

Proxies

Obvious challenges arise in the third phase of a SROI process, valuing monetary outcomes and impacts, with regards to the third and fourth SROI principle, *valuing things*

² H refers to an individual, in the original version, it refers to a household. Sometimes the equation is written with superscript H, but in Samuelson (2005, 272) superscripts are dropped when possible.

that matter and only including what is material. To achieve these goals, the standard method in SROI is to express social benefit in monetary terms by using financial proxies. Proxies are an attempt to express positive externalities of various activities in monetary terms. Proxies can be related to benefits (impacts) to individuals, or public sector cost-savings due to the program in question. (Arvidson et al. 2013)

Arvidson et al. (2013, 8) highlight two challenges with valuing public sector outcomes: it does not capture value in terms of personal utility and the extent to which cost-savings should relate to the variable costs or total costs is controversial. The cost of a specific intervention that is usually free at the point of use may not reflect the intrinsic value or what economists call *the shadow price* of that service. By definition, a shadow price (a common concept in CBA, but rarely used in the SROI context) of a good measures the net impact on social welfare of a unit increase of that good by the public sector (Drèze & Stern 1987; cf. the Samuelson condition above), but it is sometimes used simply as a measure of price for any non-tradable good if it was for sale (Young & Steinberg 1995). Also, the average price of the (still free at the point of use) intervention does not reflect the real ‘willingness to pay’ of the beneficiaries, which may be higher or lower than the cost (Arvidson et al. 2013, 9).

Willingness to pay and accept, benefit and cost transfer

There are two definitions of value for non-market outcomes, *willingness to pay* and *accept* (Hicks & Allen 1932). Compensating surplus (CS) is defined as the sum of money “paid or received, that will leave the individual in her initial welfare position following a change in the outcome.” Whereas the equivalent surplus (ES) will similarly “leave the individual in her subsequent welfare position” but in an “absence of a change in the outcome”. (Currie et al. 1971.) From CS and ES, which are standard economic tools, willingness to pay (WTP) and Willingness to accept (WTA) can be equated, respectively (Bockstael & McConnell 1980). WTA and WTP are the two “arms” of contingent valuation. Other methods for valuing non-market outcomes include revealed preference or behaviour and a wellbeing valuation approach, the latter of which has recently become popular (Fujiwara 2015, 14). In the wellbeing valuation, the value of a change is estimated through,

for example, multiple correlations in a data set that also includes information on subjective wellbeing (see Sidney et al. 2016).

Can program benefits be estimated and transferred from another study? This is practically what is done for example when using Social Value UK's proxy bank for SROIs. The "formal" framework, that provides logical guidelines for making this kind of extrapolations in CBA is called "benefit and cost transfer" (Cordes 2017, 103). However, it should only be used as a last-resort option (ibid.); a notion that many of SROI studies seem to violate.

2.4.3 Objective function in non-profit funding

Economics is, following Lionel Robbins' (1932, 16) famous, all-encompassing definition "the science which studies human behavior as a relationship between given ends and scarce means which have alternative uses." One does not have to fully agree with the definition (though it is widely accepted in textbooks) but in a decent economics thesis, the investor's perspective needs to be taken into consideration. And the fact that the money invested in rehabilitative interventions, no matter if provided by NGOs or NPOs, has "alternative uses."

Kenneth Arrow (1967) suggested, that the Bergson-Samuelson welfare function, W (equation 3 in the previous chapter), could be interpreted as the preferences of an independent public official. What is meant by independent, is a person whose role includes making value judgements about societal welfare. (Tuomala 2009, 60.) Here, we put on the hat of this public official and think of a model that fits our case from the "investor's" perspective.

The first step of modelling the behavior of an economic actor is to decide upon its' objective function. Generally, there are two types of approaches: the single argument approach and multi-argument approach. In the former, only one endogenous factor is included in the model. These types of theories include the profit-maximization model, quantity-maximization model, the revenue-maximization model and so forth. The multi-argument approach includes mainly different utility-maximization models, where utility consists of multiple factors. (Liu & Mills 2007.)

But since our case study is about a nonprofit providing health ‘services’ what does that, or a nonprofit in general, maximize? Here, we might lean on to previous economics research on non-profit organizations. A famous treatise of non-profit hospitals was written by John P. Newhouse in 1971. Despite all the “signaling”, it seems like non-profit hospitals operating in an industry penetrated by for-profit actors, cannot avoid but acting like a profit-maximizing firm. Non-profit hospitals therefore have a maximand, which is interlinked to profit. By offering more services, they attract profit-seeking. (Newhouse 1971.) Even if one does not find Newhouse’s analysis completely exhaustive, one can see how there is at least some economic interest at play. Meanwhile, not making profit has an opportunity cost, or an optional use for the money. Despite how removed the thought of profit-seeking might be from field work in non-profit organizations, this task needs to be taken seriously.

Other theories of non-profit hospitals’ objectives include a market output maximization model by Weisbrod (1988) and a so-called “for profits in disguise” model by Pauly and Redisch (1973). In the latter, actors in non-profit hospitals use the excess in something else than profits, for example wages. But in the present case, the theory considering the non-profit organization’s behavior is not as valid as a theory considering its funder. Instead of relying on theories of non-profits and their behavior, we in fact need a model for explaining the budgeter.

Tuomala (2009, 80) points out, that even though private goods provided by public sector account a large share (30–40%) of public expenditure, most of the textbooks in public finance only focus on provision of public goods and redistribution of resources as the roles of the public sector. Arrow (1971) also analyses these kinds of situations, when the public sector should provide private goods, from a perspective, where the public sector is assumed to have a utilitarian perspective on welfare. These conditions include, for example, that there is no private market, but the public sector perfectly controls the supply of the good or service in question. Our aim is to model a semi-public actors objective function for funding TSOs that offer private goods in “absence” of a market.

It appears, that the multi-argument approach would be better, since it takes a broader view on means and ends of non-profit action, but the downturn is the loss of simplicity. If the argument for low-threshold organizations providing health care is that the patient or customer gets lost in the bureaucracy of public sector care, why would it necessarily have to be a super-sophisticated multi-argument model that could explain what these organizations are doing? The argument here is, that we only need a slightly modified single argument model: a minimization of costs with certain boundary conditions.

Before going into detail into our case SROI, let us get back to the largest NPO “investor” in this case. The funding to various NPOs operating in the health sector are paid by The Funding Centre for Social Welfare and Health Organizations, STEA. STEA operates under the Ministry of Social Affairs in Finland. The money itself is collected from the Finnish public lottery monopoly of Veikkaus. The system bears somewhat resemblance to the Big Lottery in the UK (see i.e. Arvidson et al. 2014). According to STEA’s own website:

“Operating in connection with the [Ministry of Social Affairs and Health](#), the Funding Centre for Social Welfare and Health Organisations (STEA) is the most significant funding operator for organisational operations within the social and health services in Finland.

Every year, STEA processes some 2,500 funding applications, and prepares a funding proposal to the Ministry of Social Affairs and Health. Approximately 1,600-1,700 targets, organised by some 800 organisations, are awarded funding every year. STEA-funded operations can be found everywhere in Finland.” (STEA 2019)

Therefore, STEA’s decisions are more in line with the public sector than private investor’s decisions. What does STEA optimize then? It has a budget constraint, to which it cannot affect in the short run. According to Niskanen-model (1968), a public “bureaucrat” is always a budget-maximizer, but as STEA’s budget is tightly linked to the income from public gaming monopoly, there is, in theory, little it can do to maximize its budget in the short run.

STEA is not funding statutory health services or business activities. Neither is it allowed to fund services, where “extensive activities involving an exchange of money that approaches a commercial activity” take place (STEA 2019). If statutory health services are ruled out, there are still plenty of room for different kinds of health activities, which private sector actors try to monetize. However, if anything even resembling business activity is also ruled out, we approach the definition of where true non-profit action is definitely in place: services that are not vital in a sense, being that they would be included in public insurance, but which are neither profitable in the sense that private firms would seek profits in treating these health issues. In theory, if the price of treating these problems was known, there would be private firms producing at minimum costs. But since these issues seem to be out-of-the-scope of the profit-seeking industry, that leads us to what was already discussed above with regards to Arrow: private goods offered by public sector in *second best*.

What kinds of problems are those where almost zero profits are expected? Now, let us get back to the context of rehabilitation. Vilkkumaa (2011; see also Kehusmaa et al. 2010) states that often the “embarrassing feature of rehabilitation”³ with regards to cost-effectiveness is, that it is no better than the treatment as usual (TAU). He continues (ibid.) that in search for cost-effectiveness in rehabilitation, it has become commonplace to combine reliable change with minimum costs. This is the perception we may take as a premise in our modelling.

We are dealing with rehabilitative (health) interventions in a non-profit organization funding context. A model that could be used in this context could state that STEA seeks for a verifiable *effect* (e) and minimizes costs within that frame. The verification needs not to be quantifiable, it can be, but it only needs to be reported. The actual process contains a point scale of each application, but the effective result still is, that within a given year, a grant is either approved or not. In terms of the model, we may regard it as a dichotomous variable:

$$e = \{0, 1\},$$

³ This is a non-peer reviewed writing by Vilkkumaa, who has a long background in both theory and practice of rehabilitation. The citation was chosen for its forthright tone, but Vilkkumaa apparently refers to i.e. Kehusmaa et al.

where $e = 0$ is “not-effective” and $e = 1$ is any detectable effect. The criteria for approving and granting funds is most likely not based on measured effectiveness, but this can be stated as the closest equivalent of what STEA seeks for.

STEA’s problem is, that it provides funding for very heterogenous organizations and projects. Their effectiveness cannot be commensurated within, for example, a budget year. STEA aims to award (share) funding from an amount \bar{b} (budget) to as large amount, n , of effective organizations or projects as possible. Each organization or project has its own cost-structure $c = (c_i)$, where $i \leq n$ (there cannot be more cost structures than there are projects/organizations). Therefore, we may formulate an optimization problem, where STEA’s objective function is to divide (award) funds to organizations, now

$$\begin{aligned} \min & \quad \bar{b}/nc_i \\ \text{when} & \quad e = \{0,1\} \\ & \quad \min \bar{b}/nc_i = r \leq \bar{b} \end{aligned}$$

where r is the minimum grant per organization. This minimum grant cannot exceed the total sum of funds (STEA’s budget) \bar{b} . Thereby, the minimum amount of an organization can be expressed in a function:

$$\bar{b}/n = f(\bar{b}, n, e, c, r),$$

where the granted sum of funds is dependent upon the effectiveness of the organization’s interventions/projects/action and its cost-structure. If the cost-structures are ruled out (so that how much one spends does not affect how much it should have), the more *effective* organizations there are ($e = 1$), the smaller the grant each organization gets, if the amount of organizations (n) and the total budget sum for grants (\bar{b}) are held constant. This is sort of a paradox: the more effective organizations there are, the smaller is their share of public funding. Practically, the size of the budget is what affects the grants most.

3 METHODS

3.1 SROI-ratio and discounting

An essential part of the final statement of a SROI-report is the SROI-ratio. The ratio is expressed in slightly different ways in different sources. For example, in *Guide to Social Return On Investment* by Social Value UK (Nicholls et al. 2012) it is expressed as:

$$\text{SROI-ratio} = \frac{\text{Present Value}}{\text{Value of inputs}}, \text{ and as The Net SROI-ratio} = \frac{\text{Net Present Value}}{\text{Value of inputs}}$$

Whereas Investopedia (Folger 2019) uses an expression

$$\text{SROI} = \frac{\text{SIV} - \text{IIA}}{\text{IIA} \times 100\%}$$

Where:

SIV = social impact value, and

IIA = initial investment amount

Of course, as this is a simple identity, it makes no difference which version of the “formula” is used (note, that SROI-ratio is of different magnitude in these versions). In fact, most of the economic evaluation frameworks produce a ratio similar to this, such as benefit-cost-ratio in CBA and ICER in cost-effectiveness analysis: how much of change in the desired factor one gets relative to (change in) the costs. If the rate of change per costs is greater than one, as if SROI-ratio > 1, then the intervention in question is worthwhile, creates social return and so forth.

Cargani (2017, 123) points out, that seeing SROI as a single ratio is over simplistic, and prefers families of ratios, such as $\frac{B_I^{\$} + B_S^{\$} + B_S^V}{C_I^{\$}}$ where the numerators (benefits, B) represent different interpretations of value, pecuniary (\$) and non-pecuniary (v), for investors (I) and stakeholders (S). Also, presenting multiple SROI-ratios can be related to presenting different time scales for the benefits, which brings us to the question of intertemporal decision making.

Discounting is an important part of CBA and other economic evaluation frameworks and SROI makes no exception. We are already familiar with the concept of Present and Net Present Value (NPV), which is linked to discounting in the following equation:

$$NPV = \sum_{t=0}^{\infty} \frac{B_t - C_t}{(1+r)^t},$$

where B_t is the amount of benefits at period t

C_t is the amount of costs at period t

r is the chosen discount rate

The sum of the remainders of this equation are summed from the period $t = 0$ to infinity.

The Choice of the discount rate is an important task, both “politically” and practically. What is meant by the first qualifier is that the choice of so-called social discount rate, r_s , tells a lot about how society values consumption in different periods. Why would society use a discount rate that is different from the market interest rate r_m ? Tuomala (2009, 142-143) refers to Amartya Sen and Stephen Marglin, who advocate for $r_s < r_m$, because private saving generates positive externalities (in addition to personal gains).

The latter case, the practical importance, can be illustrated by an example: Suppose the SROI ratio of a project is 2.0, meaning one unit of currency invested breaks even and creates a surplus of another unit. How long are we ready to wait for that return? Rearranging the previous identity, we get, that (present) costs equal (future) benefits when:

$$C = \frac{B}{(1+r)^t} \Leftrightarrow t = \frac{\ln \frac{B}{C}}{\ln(1+r)}$$

If $B \div C$ is set to 2, meaning that benefits equal twice the costs (SROI = 2.0), we may vary the discount rate r , to get the “reverse-doubling-time” t . For example, a commonly used discount rate of 3.5% (UK recommendation, see Banke-Thomas et al. 2015) means that the realization of the “social return” can take around 20 years and still be worthwhile. A five-percent discount rate makes it to fourteen years, still, a relatively long period. If we were patient enough to wait for 10 years for the final sum of benefits from an intervention, the discount rate could be 7%.

Different investors may favor different interest and therefore different discount rates. In a review of SROI-evaluations referred to above (Banke-Thomas et al. 2015) it seemed that discount rates varied according to country recommendations. Often, there is no single discount rate that would emerge for an investment, but perhaps a range of rates based on a different set of assumptions. This might lead to a conclusion that discount rates are

arbitrary. The investor is the only party carrying a financial risk, and for them, they certainly are not. However, only the investor needs to be satisfied of the rate representing a reasonable alternative. (Gargani 2017, 119.)

No discounting will be done in our case study example. This is due to reasons, that will be discussed, along with other issues of discounting, in the final section (Chapter 6.2).

3.2 Sensitivity and break-even analysis

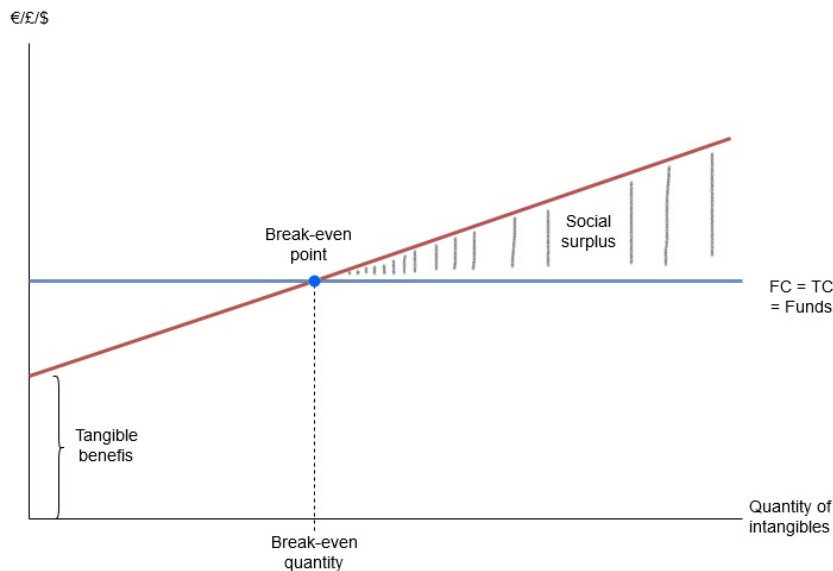
A sensitivity analysis is an important part of economic evaluation procedure. There are numerous methods of sensitivity analysis varying by degree of complexity. The simplest version of sensitivity analysis is to find the maximum and minimum values by changing different assumptions of benefits or costs. Little more advanced methods for sensitivity analysis include for example different bootstrapping methods and Monte Carlo -simulations (in SROI context see e.g. Tanaree et al. 2019).

Sensitivity analysis can be extended to the whole evaluation or just certain parts of costs or benefits: for example the largest outlays or non-material goods (Cordes 2017). Regardless of whether costs or benefits are the target, in simulation-based sensitivity analysis, either the distributions behind variables need to be well known, or strong assumptions of their nature need to be made. In our case study, there is no information on any of the distributions behind the costs or benefits. Therefore, we will rely on simply changing different assumptions.

Cordes (2017) describes how in the case of intangible benefits or costs, if enough information is available for monetization, several conclusions can be drawn from SROI analysis based on monetized benefits (and costs) alone. It may be that a program produces SROI greater than 1 solely based on monetized benefits. Or it may be, that the program garners a SROI below 1 based on monetized benefits (and costs). In this case, a break-even analysis can be used to see how large intangible benefits will need to be in order to achieve a sufficient SROI ratio.

One extra-method can now be introduced, since we will need it in the case study. In finance, a break-even point can be viewed as the amount of sales that is required for returns to exceed costs (fixed + variable costs). Break-even price is the unit price, by which a

certain amount of sold products *breaks even* the same way as above, producing as much revenue as the total costs. Beyond the break-even point, the firm is producing at surplus.



GRAPH 2. An illustration of a break-even quantity of intangibles in case of sub-par SROI ratio

The category of break-even analysis is certainly not high-end econometrics, quite the contrary, it is very basic accounting. However, the author found no clear formula for break-even analysis in SROI context. That is why we now lean on the author's formulation. In the SROI context, break-even analysis may be used when a) the amount of monetized tangible benefits already exceeds the costs, or b) when these benefits produce a sub-par SROI-ratio. In the former case, an even greater SROI ratio may be produced by taking the intangible benefits into account. The latter case is where it is usually needed. Let us say we have total costs, C , which exceeds tangible benefits B_t . The amount of intangible benefits b_i for the organization to break even are simply:

$$b_i \geq C - B_t.$$

The break-even analysis can consider either the quantity or the price of that intangible benefit. Say, we know that the intangible benefits consist of an amount of n_i known units of given intangible benefit, and we would like to set the unit price which the per unit benefit should be valued to break even, we could simply write that the price of those intangibles is:

$$p_i = \frac{C - B_t}{n_i}, \text{ where } B_t < C.$$

For the (“shadow”) price p_i , this certain amount of that intangible benefit covers the loss resulted from costs exceeding tangible benefits. In our case study, this method is used to set value for a single visit at the organization’s facilities (see Chapter 5.5).

3.3. What is a scoping review?

The final method presented is the method used in the review of literature. Scoping review is one subspecies of descriptive reviews. It is commonly mixed with mapping review, which is its closest relative. The methodology of these two types of reviews is quite similar. Scoping-review is not a systematic review. (Peters et al. 2011.) That is to say, this thesis provides no such things as ratings of quality of evidence or recommendations for practice (both of which on the other hand would be relatively interesting to integrate into SROI-evaluations).

The aim of a scoping review is to define the *scope* of literature on a subject in question. It can be used for mapping relevant concepts as well as clarifying or even defining those concepts. Furthermore, scoping reviews can be used to fill in the gaps in basic knowledge of an issue under concern. Scoping reviews are useful for example when a researcher is dealing with a field of study, where there is a limited amount of evidence base, and it is still unclarified what kinds of specific research questions should be postulated. (Peters et al. 2011.)

A scoping review would fit well for instance in a setting, where the research methods used for studying certain phenomena were to be indicated or listed. The scoping review method itself is constantly being further developed, one example is a *scoping meta review* (SMR). Scoping meta review is carried out in the same manner as a regular scoping review, but only systematic reviews are accepted in an SMR. (Sarrami-Foroushani et al. 2014.)

Scoping reviews give answers to broader questions than systematic reviews, which usually focus on more specific questions such as effectiveness of treatments. When it comes to data sources, scoping reviews are at least as comprehensive as systematic reviews – and most often more comprehensive, since the so-called grey literature can be included in a scoping review. Also, the structure of searches can differ, and searches can differ from one another. In this thesis multiple different search strategies were used.

4 SCOPING REVIEW: SROI AND REHABILITATION

4.1 Review question and study design

Usually, a systematic review starts with the formulation of PICO. PICO is an abbreviation from *Population, Intervention, Comparator* and *Outcome*. With the help of PICO, the research question and the literature search can be formulated. In qualitative settings, PICO is instead written with a lower-case o, PICo. The P and I still refer to population and intervention, but the Co stands for *Context*. Yet in scoping reviews, the combination of letters is neither PICO nor PICo, but PCC, which stands for, again, Population, then Concept and Context.

The PCC in this case would stand for:

Population: various kinds of populations under a variety of interventions

Concept: SROI or Social Return on Investment

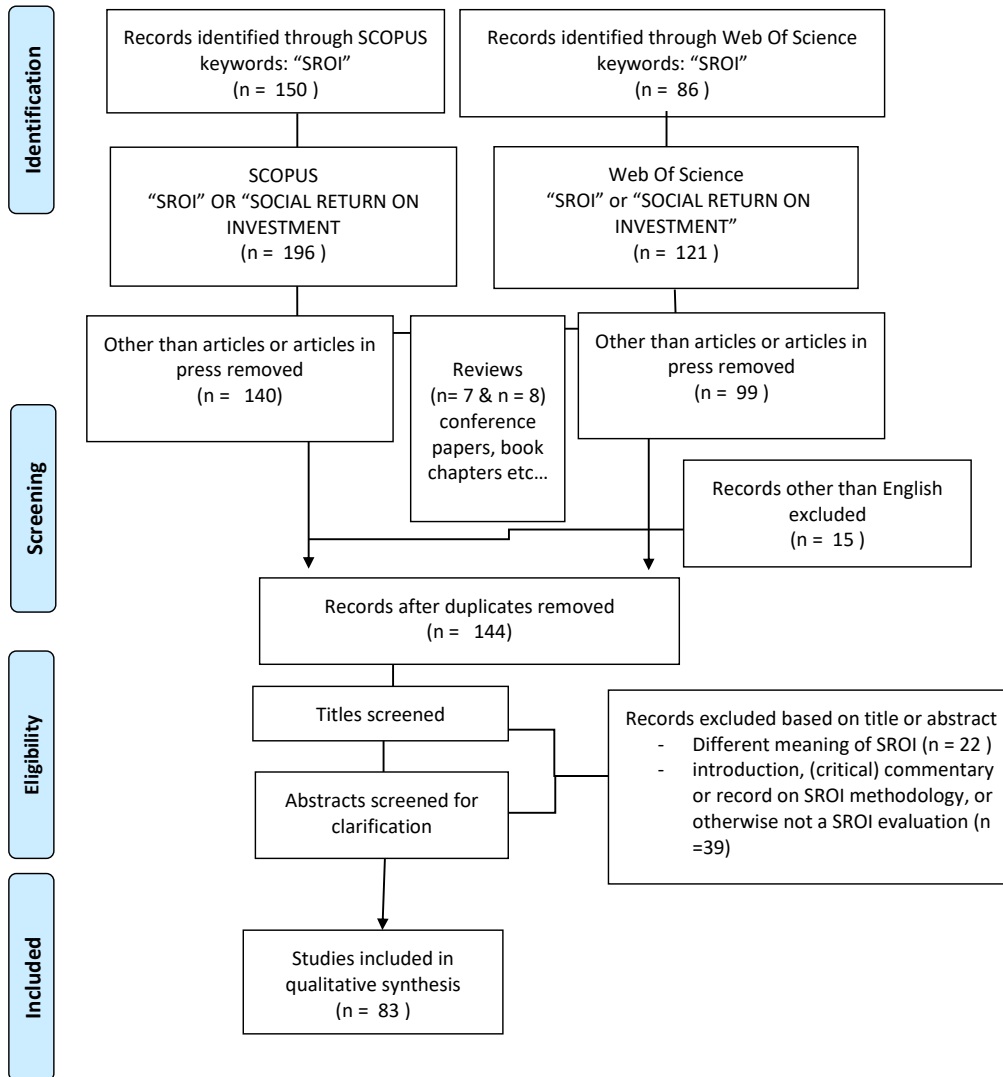
Context: Rehabilitation (health-related)

In other words, we were looking for the scope of SROI-evaluation studies in context of rehabilitation.

4.2. The review process

The review process consisted of two separate but iterative phases. First, there was the process that was conducted during the study module *Evidence Based Social and Health Care* during the spring of 2019 (let us call it Round I). The second part, or the actual review process (Round II) started after that. During Round I, the focus was solely on the scope of SROI-related articles, rehabilitation was not used in search terms. The first part consisted of identification and screening for SROI-related articles. The second part, or Round II, was where the final eligibility and inclusion criteria were coherently formulated, though the former process helped to narrow the scope.

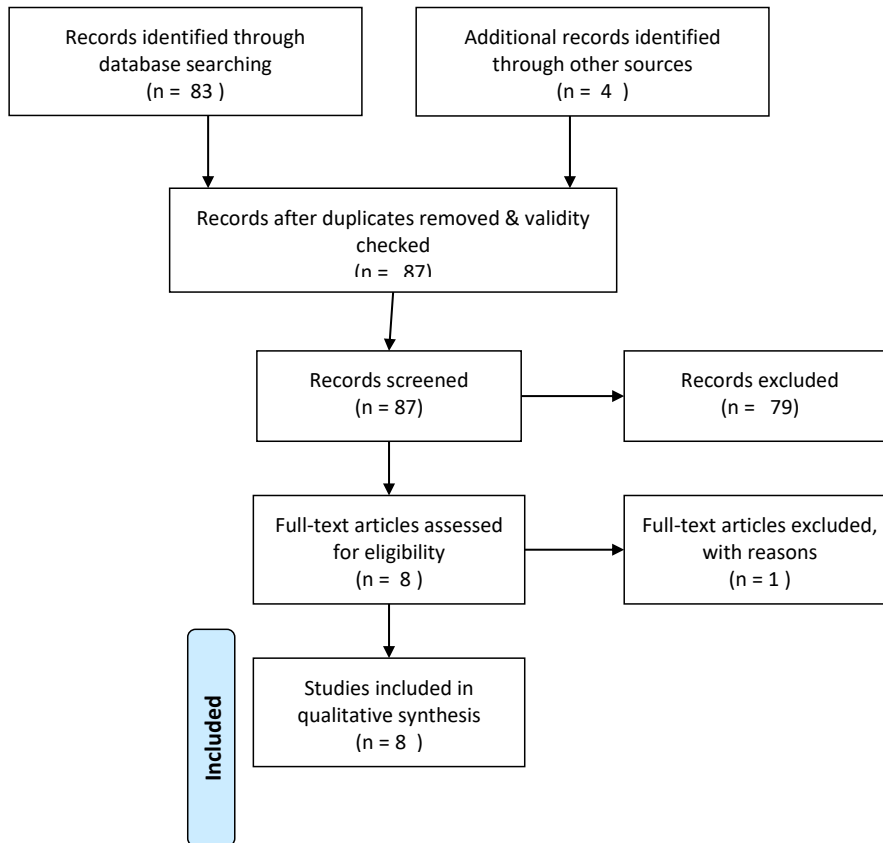
The detailed description of the scoping review process (processes I and II) were moved to the appendices (see appendix C) at the end of this document. Here, only the (PRISMA) diagrams of the processes are presented.



GRAPH 3: Process I (see appendix B), PRISMA-diagram.

In process I, only scientific databases, Scopus and Web of Science were used. From 150 + 86 records, after exclusion, there were 83 articles left. Those were included in Process

II, where also other sources of articles were utilized. (See appendix B)



GRAPH 4: Process II (see appendix B), PRISMA-diagram

In Process II, records were excluded based on whether they were in fact concerning health-related rehabilitation (with inclusion of drug rehabilitation, cf. Howard-Wilsher et al. 2016, where this was excluded). Eventually, 8 studies were included in the final synthesis. See Appendix B for detailed description.

4.2 Qualitative synthesis

This chapter is the results part for the scoping review. But before presenting the results, an excursion has to be made on a review article that was not included in the Round I process, but was screened in Round II and eventually used as a source of a) new SROIs included in this synthesis b) information on the differences between SROI and other evaluation frameworks (CBA, CEA, CUA, see Chapter 2.1) and c) an idea that had not even fully taken shape, of comparing different domains of, in the case of the article in question, public health SROIs by their SROI-ratios (Banke-Thomas et al. 2015). This again proved

our Round I hypothesis (see appendix) about published SROI-ratios being above break-even point (SROI<1) right: in Banke-Thomas et al’s review, there were zero below break-even SROIs mentioned and the ratios ranged from 1.1 (to one unit of currency invested) in health promotion to as high as 65:1 in child health (ibid. 11). The authors conducted a review of both published articles and grey literature on SROI in the context of public health. 40 articles were included in the synthesis. A quality assessment framework for SROI-evaluations, which had not been established before Krlev et al. (2013) was also included (see Appendix C).

Coincidentally, the word *rehabilitation* is not a single time mentioned Banke-Thomas et al’s review on public health SROIs, which led to a hypothesis, that perhaps rehabilitation as a concept is used differently in Finnish (*kuntoutus*) than in English, even though the dictionary definition does not differ significantly. A whole work of its own could be written about this notion. But the practical implication for us was not to narrow the scope – since even a systematic review on health-related SROIs did not contain a single explicit study on rehabilitation – but neither to widen the scope, since if almost anything health-related counted as *rehabilitation*, why would the search word be used in the first place.

Gleaning from Joanna Briggs Institute’s review manual’s framework for economic evaluation and Krlev et al’s (2013) framework for SROI evaluation (see Appendix C) the resulting articles were classified under the following main conceptual categories: author, year and shortened title; type of intervention/rehabilitation or non-profit or non-governmental organization; which costs were recognized?; what was the valuation/monetization of benefits based on?; SROI-ratio and possible range due to sensitivity analysis etc; and “other” which is a category for extra notions, such as flaws or merits.

TABLE 2: An overview of the SROI studies included in the synthesis

Authors, year & short title	Type of interv./rehab/NPO/NGO	Which costs recognized?	Valuation of outcomes based on	SROI ratio (range)	Other
Arvidson et al 2014: Community befriending	small charity providing community based services to families affected	Funding from NHS BEN (44 %) and Transition Fund (Big Lottery) & other charities. “In-	Reduced: prof. time searching treatment, No. mothers&childr. accessing restorative	£6.50:1 {£3 short term 3 y £4 in medium 6 y	“The most significant challenge was placing a monetary value on

	by post-natal depression (PND)	kind" support & volunteer work.	services, behav problems of boys at 1 st school y's. Improved relationships->family therapy as proxy.	£6.5 in long term 30 y}	improved mental well-being."
Baker et al. 2019: Evaluating societal outcomes of orthognathic surgery	Orthognathic surgery	No specific costs yet. Only first 2 of 6 SROI evaluation steps taken (stakeholder & outcome identification)	examples: cost-saving of avoiding unnecessary consultation, improvements in well-being and self-confidence	not calculated/reported	A pilot study
Iafrati 2015: regenerative value of residential addiction treatment.	Residential centre in addiction treatment (in a "major British city" 2013-2014)	Funding of the residential centre, £ 1.4 millon a year.	questionnaire & focus groups. Savings came from health (GP appointments etc.), housing and criminal justice (arrests etc.)	4:1 £	Follow-up included (challenges with sampling)
Jirarattanasopha et al. 2018: community-based alcohol consumption control program	The "Buddhist Lent Dry Campaign" in four villages in different provinces of Thailand.	direct costs: operational costs incl. materials, labor, facility & transportation costs. Indirect costs: opportunity costs of the volunteers and the program	Focus group discussions & meetings. Benefits of short-term absenteeism from daily incomes, long term from COI study on Thai population. 3 percent discount rate for outcomes lasting over a year.	2.7-5.9:1 TBH [5.9, 3.5, 2.7 and 3.1 baht for each village A to D, per 1 baht invested]	Village C disagreed with stated preference survey. In Village D, the SROI-ratio was 0.8 without valuing the effects of long-term abstinence.
Owen et al. 2015: Common Ground Co-operative	Employment option for persons with developmental disabilities	Government (65%) & other funds & grants. CO-OP membership fees, donor contributions incl. volunteers' time.	Proxies for outcomes such as independence, soc. participation & wellbeing. Largest shares of total benefits: 1. enterprise partners 2. families. Total value: \$889,272	\$1.77:1.	-
Shaw 2018: Behavior Changes of Individuals Living With	People Matters' Teens-n-Twenties program, support individuals between the ages of	Original investment from the UK's Big Lottery Fund. program costs derived from interviews.	Direct outputs: valued as a weighted proportion of total costs of the inputs.	£2.36:1 to £3.88:1	(no discounting or other intertemporal effects evaluated)

Learning Difficulties	14 and 25 become more independent. (purchase basic items, use public transport etc.)		Indirect outputs: Social Value UK's Global Value Exchange database.		
Tanaree et al 2019: iMAP in Songkhla province of Thailand	Integrated Alcohol Intervention Program (i-MAP) in community Health care System, among stakeholders and 113 (29 low-risk, 43 high-risk, and 41 dependent) drinkers	Pre-implementation costs from i-MAP reports, implementation costs from sample average units, hospitalization, labor & opportunity costs and overhead costs.	interviews w/ stakeholder REPs. Outcomes monetized by revealed preference techniques, i.e. closest comparable value of products/services with market prices. Financial proxies for reduced service-use, crime, productivity loss & (only) acute health consequences.	2.0 [1.3 - 2.4] per TBH invested	One-way and probabilistic sensitivity analyses of key parameters were performed among treatment subgroups.
Willis 2016: Quantifying the benefits of peer support for people with dementia	Three dementia peer support groups in South London.	Not clearly stated in text, apparently funding from local authorities + charitable grants (based on table 1)	financial proxies e.g. unit costs of treating depression, day care service, job satisfaction, dementia awareness course.	£1.17 to £5.18	Study was validated externally by NEF Consulting (New Economics Foundation)

There is no single key finding from this synthesis, but a few features might be pointed out. There were two SROI studies from Thailand which according WHO statistics, cited by Jirarattanasopha et al. (2018), ranks amongst the top in ASEAN countries in alcohol consumption rates. The study conducted by Tanaree et al. (2019) describes a good case in point of valuation in SROI (the almost identical sentence structure in the end could be a slip by the article's authors and reviewers):

“For instance, value of drinker’s ability to better regulate negative emotion would be equal to cost of therapy sessions specifically aiming to improve coping mechanism; value of increased participating in community activity (i.e. increased sense of belonging) would be equal to cost of hiring someone to volunteer in social events. Governmental documents (e.g. service rates in public hospital, minimum labor wage) were set as the first priorities of data sources for all financial proxies in order not to overpricing the outcomes. Governmental documents (e.g. public service rates) were determined as the first basis for data sources in order not to overprice the outcomes.” (sic.)

In addition to the abovementioned studies, there was a third study in the category of substance-use disorders (Iafrati 2015). Other studies were concerning mental health (Arvidson et al. 2014), developmental disabilities (Owen et al. 2015), dementia (Willis 2016) and learning difficulties (Shaw 2018) and rehabilitation after orthognathic surgery by Baker et al. (2019). However, only the two first steps of the SROI process were conducted in the last-mentioned study.

The study by Owen et al. (2015) is an example of not an NPO but a co-op that has a mixed funding of government grants, charities and co-op membership fees (shares). This kind of solution could also be used when applying funds from STEA, but the limiting factor is, that the target of funding shall not compete with private actors (some industries are ruled out). The Big Lottery was the main funder in two of the studies (Arvidson et al. 2014 & Shaw 2018). The origin of the funds was not clearly stated in all studies, but external funding was the main source of costs. Other costs included things such as volunteer's time and other opportunity costs.

Valuations were based on multiple data sources and outcomes. There were questionnaires and focus group discussions, the latter of which is an important method of data collection for examples in situations where patient's views and experiences are the research interest (see i.e. Trenkner & Actenberg 1991; Mäntyranta & Kaila 2008). The use of concepts varied, but cost-savings were the largest share of outcomes valued and financial proxies were mainly based on prices of reduced services. Valuing mental wellbeing outcomes was specially challenging (Arvidson et al. 2014). Social Value UK's database was utilized once for indirect outputs (Shaw 2018).

SROI-ratios varied between 1,17 to 6,50 per unit of currency invested (these figures were both in pounds). It needs to be noted, that different ratios might have different time scales, which is another argument against comparing different ratios even within same area of health. The largest SROI ratio was based on a time scale of 30 years (Arvidson et al. 2014). The lowest SROI ratio was among dementia peer support groups, but the same study also reported a ratio of £5.18, which was not due to different time periods but to different design and structure of the groups (Willis et al. 2018).

5 CASE STUDY

5.1 The SROI case at hand

The case study is considering an organization that is providing low-threshold activities and a meeting place for people with common mental disorders in the center of a Finnish above mid-size town. In the field of mental health rehabilitation, outpatient care has become a dominant form of care. For example, there are nowadays around 3500 beds in Finnish psychiatric hospitals compared to 20 000 at their peak. (THL 2019.) Outpatient care still needs different societal facilities to function. NPOs or TSOs (third sector organizations) are common providers of these kinds of facilities.

The organization and their “base” are anonymized in this study, but as the organization might publish the original SROI-report, there are no ethical concerns. The other aspect is, that the evaluation is made on accounts that are publicly available: their funding, annual report and member survey (main) results. The only part that was not public is the financial report. The permission for using these pieces information, including the financial report, was asked from the board of the organization. For evaluative purposes, no separate research permission was needed. No personal information was used in the evaluation, neither is the author aware of such accounts existing.

The SROI process started with meeting at the organizations facilities and continued via phone calls and e-mails. The (annual) member survey results, were given to us in a PowerPoint presentation, which was worked into a spread sheet. Since we had no role in the formulation of the questionnaire itself, the only thing to do was to see what is valuable with regards to SROI evaluation. The information from the annual report was worked to an impact map with the organization. The financial report was used to clarify certain matters. The final report has been sent and discussed with the organization, the foreword for the report was written by the organization’s speech person.

Organization B

The organization, that we may call *B*, organizes various kinds of activities at their facilities, let us call it *House B*: peer groups, sports and pastime groups, events, lectures, trips and excursions, et cetera. All activities were listed with the help of Organization B’s annual report. Their value was assessed in a spreadsheet in a similar fashion than is done in

the Finnish SROI guide by Klemelä (2016). It is worth noting that Klemelä's (ibid.) version of the SROI impact map is somewhat different from Social Value UK's SROI Impact Map Template (Social Value UK 2019b). Tangible services were monetized with the help of the organization's annual report and statement of earnings, also, organization's member survey results report was utilized in the analysis.

House B gets 87 % of its funding from STEA (Ministry of Health and Social Affairs), around 13 % from the City (let us refer to the town with that name), and a little less than 0,5% from the City's *Council on Disability*. The total amount is around 150 thousand euros. The Organization B also receives further funding from STEA and the City. However, the STEAs other fund is used for activities in surrounding towns, not in the City. The latter (further income from the City) funding is for incentive pay, that is used for employment activities, and an important notion at this point is, that no employment effects will be evaluated in this case study. So, the "investment" particularly in the House B is considered the project under evaluation and the three before mentioned stakeholders as the "investors" in this case.

Theory of change?

As mentioned in the chapter 2.2. on SROI process and principles, a SROI analysis starts with the formulation of Theory of change (TOC) also referred as 'a logic model'. Calling this part of the process a formulation of a *theory* is maybe a bit of over-estimation, but TOC is an actual concept, along with a "logic model," used in the field of evaluation (see i.e. Prest 2010; about their differences see brief introduction by Clark & Anderson, 2004). TOC is simply a story of the difference (of the outcome) due to the intervention. (Nicholls et al. 2012.)

In at least one of the previous questionnaires conducted by the organization there had been a question on the effect of visitors' use of mental health services. Or, to be precise, and even better in terms of evaluation, whether the use of the abovementioned services had *increased or decreased due to visits* at the House B. This was an open-ended question, with 24 respondents, of which, based on a very brief analysis, 43% said that the usage had decreased due to visits at the House B. Though, there were also mixed answers, such as people who reported no need of any of these kinds of services, and 17% of the answers

could be interpreted as indicating an *increase* in service use. Despite many problems attached to self-reported data, and the lack of preciseness (we have no base values for service use, no measure for the decrease, no information on whether it was primary or special health care service use etc.), this could be a valid starting point to our analysis. However, in meetings with the people at the House B, we decided to take a different primary evaluative approach. There are few key reasons for this:

- The explicit goal of the organization is *not* to decrease peoples' use of mental health services, but mental health promotion and preventive work, which are not the same thing
- Sometimes the goal might even be the opposite: to bring in people seeking for professional help
- The results referred to were considering a different time period as the question was not included in the questionnaire during the year in question of evaluation

Therefore, despite the seemingly interesting study design and relatively commonly used proxy of reduced service use, we chose mainly to value *qualitative* changes in visitors' lives based on the (end of 2018) questionnaire. These included the following:

- 56% reported that they had *made new friends* and the same amount reported that they were *more hopeful* about their future
- 54% of respondents reported *increased regularity* of daily life
- over 40% of respondents reported both *less loneliness* and more courage in meeting other people (which might be considered a *decrease in social anxiety*)
- 25% of respondents reported *increased participation* in activities outside their home

No statistical tests were reported for these proportions (in the presentation we received). We might perform those tests now, but that is not the most relevant task, since the SROI evaluation is based yet on another set of so-called variables. The idea is the following one: the above-mentioned positive, but highly intangible changes can be thought of as an *outcome* or a result of all the activities that are being organized at the House B.

These results act as sort of a mental-wellbeing vector, consisting of five elements $\bar{W} = [w_1, \dots, w_5]$, where all elements are positive, and \bar{W} is a product $A\bar{x}$, where

$$\bar{x} = \begin{bmatrix} x_1 \\ x_2 \\ \vdots \\ x_n \end{bmatrix} \text{ is a vector of known activities (groups, events etc.), and } \mathbf{A} = \begin{bmatrix} a_{11} & \cdots & a_{1n} \\ \vdots & \ddots & \vdots \\ a_{51} & \cdots & a_{5n} \end{bmatrix}$$

a matrix, whose components a_{ij} are unknown. There can be various components ($= 0$) that do not affect \bar{W} . Also, there might be various other factors (events in personal life, medication etc.) affecting this positive change in mental wellbeing, but by limiting our analysis to the social opportunity costs of the services or activities, we are on the safe side. Further, we may take into consideration the most important activities based on visitors' preferences stated in the questionnaire. How much in social opportunity costs would it take to organize similar set of activities which presumably results in the same positive outcomes? This is the idea of our SROI-evaluation.

5.2 Monetizing outcomes

The House B is **open six days a week**. Visitors can come and go as they like, attend peer groups, sports or leisure groups. There are computers and laundry facilities. For a small subscription (15€/year) members can get a lunch at a discount price and attend special events and trips. The admissions have increased by 21% compared to previous year. The admissions to different group activities were subtracted from the total admissions resulting to a total of 7248 visits with no specific purpose. These “general” visits were valued using a proxy price of a cup of coffee, 2€/each, 14 496 € in total, but also used in the break even -analysis as the quantity of intangible commodity that a price is defined (see Chapter 5.5).

The general problem of assessing value onto informal group activities is that there are rarely direct “market” substitutes for those groups. For most of **pastime groups**, the local adult education center catalogue was helpful source of information. These activities were matched and priced by unit prices of the adult education center courses. There were surprisingly good substitutes for different activities. For example, a gender specific “women’s group” held at the House B could be compared to almost equivalent “Men’s discussion group” organized by the adult education center. Another example: what is a substitute of “a chit-chat group” organized at the House B? Eventually, quite close substitute could be “The philosophical salon” organized by the adult education center. That is not to say philosophical ideas would not be able to change individual’s life and have

an immense, existential, almost immeasurable subjective value, but moneywise, the unit price for the “course” in the catalogue was no more than 3.3 €/hour. The total amount of value for these outcome proxies amounted to 4 516 €.

The sports groups were valued by the City sports facilities price list. This was a rather straight forward procedure. There are different one-time fees for different activities, such as group classes, swimming and so forth. The members of the Organization B also get a discount at the City’s sports facilities, so there is also some amount of displacement taking place. The amount of displacement could not be assessed, for there is no record of the organization B’s members’ visits at the City’s sports facilities. However, this was settled by regarding the amount of social impact (an increase in customers’ activity and the resulting wellbeing) acquired by the discount as big as the sum of deadweight, displacement and attribution of that activity. The total sum of sport group proxies was 3 430 €.

There were almost 20 separate **events** (separate from group activities etc.) organized at the House B during the “financial year” 2018. There are multiple, but few reliable ways of assessing value to single events such as lectures or info sessions. What is the value of awareness concerning a certain issue? And how much people attending already know and how far will the newly acquired information reach? For example, Willis et al. (2018, 272) have an interesting take on the deadweight of dementia awareness: the proportion of “dementia friends” of certain population likely have a higher amount of knowledge on the issue. In this case, lectures held by experts-by-experience⁴ were valued at a rate of rewards defined by KoKoA, an organization of experts-by-experience (see KoKoA 2019). The social value created is thought to be at least as high as the reward for the expert-by-experience speaker. We might as well think of it as “job creation” for that person, but experts-by-experience are not regarded as a key stakeholder here and job creation is not always thought of as a surplus but a simple transformation in CBA (Kahn 1998; Boardman et al. 2006). There were three events with no monetized value (anonymized or otherwise non-monetizable). The total value of events and lectures was 6 246 €.

⁴ See for example https://www.hus.fi/en/about-hus/Hospital_areas/Comprehensive-Cancer-Center/Pages/Experts-by-experience.aspx or <https://improvement.nhs.uk/resources/experts-experience/>

Peer groups focusing on specific mental health issues (such as depression and schizophrenia) valued higher than sports or other recreation. This is due to three considerations: first, a Cochrane Review of care for adult clients in statutory mental services reported no difference in various outcomes of groups led by consumer-providers versus professionals (Pitt et al. 2013)⁵. Secondly, the *Interpersonal Therapy* (IPT) used as a proxy, contains the same elements, such as peer support and reflection in a group. The third reason comes from the member survey. Amongst the most valued by survey respondents (members) were the food served at the House and peer support activities (and trips). For these reasons, because it is appreciated by the members and assumed to be no-less effective in producing certain outcomes, peer group activities were given a proxy value of a private sector IPT group therapy session. Therefore, the total value created by 225 peer group therapy sessions (attendings) was as high as 46 875 €.

There were altogether fourteen **trips** organized. They were valued using a variety of proxies, such as train and bus tickets. Extra fees paid by the members attending were subtracted from the value created as *displacement* (of private consumption). The total value of trips amounted to 10 769,72 € which after deduction of displacement was 8 126,72 €.

Kitchen activities included lunch during weekdays, waste food brunch on Sundays, serving excess food from schools and delivering this excess food to some households. This creates benefits to both visitors/members and society:

- Total of over 3630 lunches were sold. Proxy value was 8,90 € of which the actual price of the meal 3,75 € was subtracted for each unit sold. Total value created was 18 705 €.
- certain amount of people came to pick up excess food on weekdays. The total amount of value was 8 910 € when the price of school lunch was used as a proxy and no value of displacement was discounted
- In collaboration with another organization, let us call it A, the excess school food was delivered to people who could not pick the food up themselves. In lack of better information, the whole value created by this action is regarded as attribution (100%) and no value added to Organization B's impact map.

⁵ though, the evidence in the review was stated to be from moderate to low. Also, see Lloyd-Evans et al. (2014) on the effectiveness of peer-support.

- proxy for waste food brunch was an actual brunch in a restaurant. This produced 3 500 € in total value. No displacement was accounted for it.
- excess school food and waste-brunch can be viewed as an avoidance of food waste, which saves resources in two ways, CO₂-emissions from food production and biowaste. This was of a minor account, but a total of five tons of carbon offset in EU emissions trading was used as a proxy along with reduced fees for 10 560 kg of biowaste. This amounted to an “environmental value” of 562 €.

Local care homes are the second most benefited stakeholder in our model. This is due to an effect the existence of House B has on their operations. Due to competitive tendering of mental health services in the City, local care homes face sanctions in the case that their customers do not attend outside activities. This has, according to Organization B, increased the number of visitors in their facilities. An approximation of the volume of the increase is modest, one third of the total increase in turnout (note: not increased by a third, but 33 % of the increase of over seventeen hundred visits = 565 visits). This results to a total of 68 avoided monthly fees to the care homes, worth more than forty-one thousand euros.

When all proxies for different outcomes are listed and valued (as is done above), the next step is to deduct different factors that affect the impact.

5.3 Factors affecting the impact

5.3.1 Deadweight and displacement

Deadweight is the share of the outcome that would have happened regardless of the activity taking place (Nicholls et al. 2012, 56). Deadweight was set to zero in all but two activities, in which reasonable estimate of deadweight could be thought, but the effective value was still zero. Some amount of activities could have been regarded as deadweight, but they were classified as displacement instead.

Displacement is an assessment of how much of the outcome displaced other outcomes (Nicholls et al 2012, 57). Lunch served at the House B displaces private consumption of lunches by the full price of that lunch, 3,75€/lunch on average. The displacement was

deducted from the gross benefit, where a standard (low-price) meal ticket of 8,90€ was used as a proxy.

The organized trips displace private consumption by an amount indicated by the member price of the same trip (most of the trips were “free” or included in the member fee). The total amount of displacement of trips was 2 643 €.

5.3.2 Attribution

Attribution is a percentage of the outcome that was caused by other entities (Nicholls et al 2012, 59). There is one “entry” in our accounting framework, whose benefits are fully (100%) attributed to other organization. That is the delivery of excess school food to people who could not pick it up from the House B themselves. Here, a smaller percentage could be used, but to avoid overclaiming, the social value generated by the activity (transportation) is attributed to an organization that we imaginatively call A.

It is a matter of opinion, or convention, whether the estimate of the increased attendance that was not due to competitive tendering of mental health services (see previous Chapter 5.2) should be reported at all. The around 67% of the increase is here regarded as attribution (to unknown factors), but we might as well classify it as deadweight. The results are the same. The stakeholder gaining benefits is not the Organization B but the local care homes. So, the 2/3 deduction is made from the hypothetical situation, where all extra visitors at the House B would be a result of the above-mentioned competitive tendering.

5.3.3 Drop-off and discounting

No discounting of costs or benefits was done in this case study example. This is due to various reasons. The analysis is evaluative, so the benefits are not projected in a longer time span (which might be reasonable). On the other hand, the funding for the organization changes almost annually due to external circumstances, so the total (future) amount invested is not known either. The analysis is focusing on costs and benefits, mostly in-kind, realized during the year 2018. According to Maier et al (2015) when it is about “social returns that are monetized by the analyst, discounting for inflation makes no sense because these are benefits ‘in kind’”.

Dropp-off does not need to be taken into account as long as we are dealing with outcomes that are ought to last for the whole period of evaluation. Whether, for example, the positive effect of visiting House B lasts for long, is an interesting question but out of the scope of this study.

5.4 Primary results

The shortened version of the impact map for Organization/House B is shown in table 5 below. The almost full version is depicted in Appendix B. The columns in the shortened impact map represent the stakeholders, outcomes, proxies and value. Inputs, outputs, quantities and the value deducting columns, deadweight, attribution, displacement and drop off are left out of the impact map resented here. The lower-right-most cell presents the total value after deductions.

TABLE 3. House B's impact map, shortened version.

Stakeholder	Outcomes	Proxies	Value
Members & visitors at the House B	<i>Coping/daily rhythm</i>	Visits at the House B	105 898 €
	<i>Peer support for CMDs</i>	Interpersonal Psychotherapy Group (IPT)	
	<i>Anxiety reduction</i>		
	<i>Improved social relations</i>		
	<i>Reduced loneliness</i>		
	<i>Physical activation</i>	Prices at City's sports facilities	
	<i>Food & company</i>	Trips and events	
Organization A + customers	<i>Excess school meals pickup and/or delivery</i>	Meal tickets etc.	8 910 €
		school meal price, no proxy for delivery	
Society	<i>Food waste CO2-emission cut off</i>	Allowances at the EU emission trading scheme	1 603 €
	<i>Decreased amount of biowaste</i>	Price of biowaste pickup (service provider)	
	<i>Charity</i>	½ of charities to other organizations	
Local care homes	<i>Residents' ability to function stays on a sufficient level</i>	Avoided sanctions (of neglecting activation)	41 124 €
Total			157 535,00 €

In the end of the gross value column, we see the gross value created, based on the chosen value transfer method and the proxies chosen, which amounts to a total of 257 294€ in the full table (Appendix B). After deducting the displacement and attribution (deadweight and drop off are set to zero) the total net value amounts to 157 536 €. A SROI-ratio is calculated by dividing the latter with the total amount of funding that House B has received.

$$\text{SROI}_i = \frac{157\,535,95\ \text{€}}{150\,850,00\ \text{€}} = 1,044$$

As mentioned in previous chapters, no discounting of the costs or benefits was done for this SROI evaluation. However, what is interesting is that the SROI-ratio for one year of investment indicates a surplus of around 4,4 per cent. A method that has hitherto not been introduced (because it is not our primary interest) is the measure of Internal Rate of Return (IRR). IRR is the lowest rate of return, for which the net present value of a project equals zero. The IRR can be calculated from the formula (Tuomala 2009, 135)

$B_0^i - C_0^i + \frac{B_1^i - C_1^i}{1+i} + \dots + \frac{B_T^i - C_T^i}{(1+i)^T} = 0, i$. But in our case, the only thing worth noting is that as we have one year's period of time, the IRR for B could be 4,4% (all things considered).

5.4 Alternate analysis strategy

A City without B(atman)?

The alternative strategy for counting the SROI-ratio is based on a notion from CBA. If the House B was to disappear from the City, what would happen? Since the treatment of outpatients is partially based on the fact, that there are low threshold mental health organizations in the region, this is not a realistic option. In CBA framework, instead of options that are not realistic, the closest equivalent can be used as an alternative (see i.e. Kahn 1998, 115). So, what would be the next-best, next-cheapest solution for providing the same service as Organization/House B does?

STEA database⁶ for grants of different organizations was used to identify as close equivalent organization as possible. The data includes only the following nine classes of information (“variables”): name of the organization, year, purpose of use (of the grant in question), type (code), geographical area, target (e.g. *health and ability to function*), class

⁶ The data for years 2017-2019 can be downloaded (in Finnish) from: <http://avustukset.stea.fi/download>
The data for STEAs predecessor RAY funds from the 2000 to 2018

(such as *organizations in neurological conditions*), the amount of funding that the organization has stated in the application, and the amount of funding actually awarded.

We filtered for the same class (mental health organizations), which resulted in 134 results; and same geographical area (City), which limits the results to only three (3).

All three grants are used in slightly different purposes, The first option, let us call it F, is an organization that also has the same defined *target* as B, but the description of the purpose differs so that this organization offers activities for younger people than B (most of the members and visitors at House B are either middle-aged or retired). If we still regard it as the closest option, we may simply compare its costs (funding awarded) to B, which results in a ratio of 1.77 to 1, with B being 1.77 -times 'cheaper' in costs. But we cannot simply call this a SROI ratio!

The other grant awarded to the same area and class of organizations does not have the same target as B and F. This organization, let us call it D, has a target on *participation in working life*. It spends 6% less than B, so, assuming similar kind of effectiveness, the ratio for B would be 0,94:1.

As stated above, we cannot simply compare project costs. The obvious objection is, that we have no idea of other projects' benefits. The only two pieces of information that were gained during the SROI process at the organization B were: 1) In the organization F, there had been a forecast-type of in-house evaluation process⁷ (not SROI but similar kind). In the forecast, the organization was aiming for the sort of 'soft changes' (along with more tangible social benefits) that were reported in the organization B member survey. These were quite usual indicators of mental wellbeing (loneliness, anxiety, etc.). 2) It was stated in the organization D's website, that the ROI (not SROI) of their activities was as high as 4.6 to 1, and that this was based on another in-house evaluation (equaling B with D, would the ROI for B then be $0.98 \times 4.6 = 4.5\dots?$)

⁷ This was told to us in a meeting by the organization that had conducted the evaluation. The report itself was not handed to us. The information on these accounts has only been given to reviewers of this thesis.

B seems to attract ageing outpatients (and people in general). The target groups between these organizations are not the same. There are also younger people visiting House B, and probably vice versa. That is why this is, by definition, very much an alternative strategy of analysis. With the best will in the world, it cannot be called SROI. This fact also underlines that organizations operate with different cost structures. It is not in their interest either to be compared to organizations with different aims and target groups.

5.5 Break even analysis

As noted in Chapter 3, if SROI based on tangible benefits garners only a sub-par ratio (<1), a break-even analysis can be used to study which amount or what is the “shadow price” (not exactly the right use of the word) of certain intangible benefit that would equalize the costs and benefits.

Although we already have a SROI ratio above 1, we can change some of the assumptions in the original impact map. First let us drop the unit price for an individual visit at the House B. It was set to be 2€/visit (a cup of coffee, but it is not actually a fully proper proxy, since coffee is sold at a cheaper price at the House B). If we do not presuppose any price for an individual visit, the total amount of monetized benefits drops to 143 thousand euros, 78 hundred euros short of “making ends meet”.

What value of a visit at the House B now equalizes costs and benefits? The answer can be calculated by dividing the remainder of benefits and costs by the number of visits (that are not due to groups etc.): $7810\text{€} \div 7248 \text{ visit} = 1.08 \text{ €/visit}$.

In our case, a highly tangible, but in the absence of data, very intangible asset, is the effect that the organization has on its members hospitalization due to psychiatric conditions. After deducting for other benefits, how many psychiatric patient days should the visitors of the organization B avoid, so that the social value created would break even with the grants invested? This is second break-even scenario.

The DRG price per diem, p_d , for psychiatric care, acute psychiatry, psychosis and affective syndrome is 483 euros for each (HUS⁸ 2019). To count the number of avoided inpatient days, x_d , needed for the SROI to break even, may compare that to different parts of the impact map (if set to zero):

- 1) to the remainder used in the previous break-even scenario (7810€)
- 2) to the largest individual share of benefits (30%), peer groups, that is the most potential source of bias (almost 47k€)
- 3) to the second largest share (26%) accounted for care homes in savings (41k€)

Which results in $x_d = \begin{cases} 16 \\ 97 \\ 85 \end{cases}$ avoided inpatient days, respectively.

The amount varies greatly, but even the greatest number of days does not exceed hundred. The House B is closed for two weeks during the year. So even if we place no other value (which we ought not to do, since it is double counting) on peer groups, other things equal, a hospitalization twice a week makes the operations “profitable”. The lowest figure, 16 avoided inpatient days, is actually not too far from the amount who reported that their use of mental health services had decreased due to visits at the House B (during the previous year).

⁸ HUS is the Helsinki University Hospital, but that says nothing of the city or area that the research is concerning.

6 DISCUSSION

6.1 Summary of the results

There were two aims in this study and a third, adjunct aim. Firstly, to find out how much research had been done with or on SROI with regards to rehabilitation. Secondly, to carry out a rehabilitation related SROI evaluation. The third aim of developing a perspective on non-profit funding in the Finnish context was started in the background section (Chapter 2.4.3) and will be continued here.

A scoping review was carried out to meet the first aim. In the scoping review, two (plus one) scientific databases, one report data base and web searches were utilized. The review consisted of two rounds. In the first round, the aim was to find the scope of scientific literature on SROI. In the second round, rehabilitation was used as a delimiting concept. It turned out that the word rehabilitation was very rarely used explicitly and the articles needed to be qualitatively assessed. Eventually, there were eight SROI studies that met the inclusion criteria: an individual SROI study conducted on any kind of rehabilitative intervention, excluding occupational and criminological rehabilitation, but including drug and alcohol rehabilitation.

The SROI case studies found were considering alcohol- and drug rehabilitation, mental health rehabilitation, rehabilitation for dementia, developmental and learning disabilities and finally rehabilitation after orthognathic surgery. Most of the costs of programs were funds from various instances, but other types of cost structures also existed. In the UK, The Big Lottery Fund was a significant funder. SROI ratios among studies varied between 1.17 to 6.5, but they cannot be compared between studies, because they also represent different time periods.

The case study was carried out in collaboration with an organization that offers low threshold mental health activities in an above mid-size city in Finland. The organization was anonymized (and creatively called the Organization B) for now, but it might be that the SROI report will be published later. There were no personal data used in the evaluation and all but the financial statement of the organization were already public (published) documents (annual report etc.).

The model for the operations of the Organization B at their facilities (which was called House B) can be characterized so that it produces positive mental wellbeing (a vector consisting of different elements) by organizing a set of activities. It is unknown, which activities affect the factors of mental wellbeing and in what way, but the model is a hypothesis that does not take a clear stand on partial causalities. The activities are chosen by the participants who are also members of the organization, so they somewhat reflect members' preferences. With regard to economic theory (public economics), this is a situation in *second best*, where the public sector provides private goods (outpatient care).

The benefits generated by the Organization B were monetized using different kinds of proxies. The largest share of outcomes of benefits were peer groups, whose proxy value was more than 46 thousand euros, derived from the opportunity cost of interpersonal group therapy in the private sector. The second largest beneficiaries were the local care homes, who avoid sanctions (set to units that do not fill requirements for activation of their residents) because of B organizing activities.

After deductions for attribution, deadweight, drop-off and displacement, the total amount of monetized social value was 157 536 €. This produces a SROI ratio of 1,044 in a year's period, which could be interpreted as around 4% social surplus or internal rate of return. No discounting was conducted because the evaluation was concerning only the year 2018.

Break-even analysis was used as sensitivity analysis. The results showed, that the Organization/House B breaks even, or produces social surplus, if besides other benefits, a single visit at the House B facilities is valued over 1.08€. Other things equal, B also produces social surplus if 16 to 97 psychiatric inpatient days, depending on different assumptions, are being prevented by their performance.

6.2 Flaws and explanations

This study has some room for further research and expansion. There were significantly less search entries explicitly dealing with rehabilitation in the scoping review than was expected. This can be regarded as a flaw, but there are few points to be considered before disregarding this thesis. Firstly, the definition of rehabilitation does not alter significantly in English and other languages, and the root of the word is most definitely not in the

Finnish language. Instead of decreasing the entries, a broader concept should on the contrary widen the scope and increase search results. Secondly, there are multiple systematic reviews and even an overview of systematic reviews on the economic evaluation of health-related rehabilitation (Howard-Wilsher et al. 2016). In theory, there should be no lack of health-related rehabilitation interventions and their economic evaluation. It might just be the case, that as the results show, rehabilitation is not something that often is explicitly linked with SROI-evaluation, and SROI is perhaps not the primary framework for evaluating health-related rehabilitation.

Even though SROI initially seemed to fit in the family of economic evaluation methods (see Culyer & Masurova 2005), it is hardly recognized in mainstream, or even heterodox economics papers. There were only three English speaking journals with the word 'economics' in their title that had published articles on SROI found in the scoping review. These journals were *International Journal of Green Economics*, *Economics and Sociology* and *Ecological economics*. None of these journals were in fact sources of articles presented in the review synthesis, but that can be counted as a matter of topic. However, there were no SROI-related articles published in health economics journals.

The data has some drawbacks, but instead of regarding it as a conducted study, one should take it as a case-example of what kinds of data is available in TSO level. Mostly, they are individual surveys with varying questions on varying issues. Annual reports and financial statements are part of the usual, statutory procedures in NPOs, but the possibility to utilize them (like it is done here) is not to be taken for granted. No panel settings and definitely no RCT:s even exist for the purposes of inferring causality. Construction of (quasi-) experimental settings are an interesting question, but they need to be left to further researchers. Despite the flaws, this study might inspire someone to a) build a better study design and b) collect better data. The procedures required for utilizing individual (out)patient data would be far beyond the resources available for this particular case study (e.g. to see if there is a change in actual service use). Once more, it needs to be noted, that no extra data collection was done for this study, which was mostly due to response burden and research ethics.

The valuation procedure in the case study does not differ much from other studies in the field of SROI. No willingness to pay was assessed, which can be considered a flaw, but on the other hand, member's preferences from the member survey were taken into consideration (they are in fact taken into consideration already at the organization, which sets forth activities that the members/visitors are hoping for). The whole question of how outputs (i.e. activities produced) can be reasonably equated with outcomes (i.e. changes in individual's wellbeing) and then traced back to represent "social value created" is a complex one, and that Fujiwara (2015) has written an exhaustive record on. Referring to the seven SROI principles, the paper is called *The Seven Principle Problems of SROI*.

According to Fujiwara (2015, 7), cost-benefit analysis has a well-defined normative foundation in the theory of *preferentialist* utilitarianism. What matters about actions are the outcomes produced (consequentialism) and the ultimate outcome and value is wellbeing (welfarism). CBA has engaged in subjective wellbeing measures too, which according to Fujiwara (ibid.) could be seen as a move back to classical (Benthamite, see Chapter 2.4.1) utilitarianism. Compensating surplus and equivalent surplus, presented in chapter 2.4.2, are the tools that are used in CBA to measure individual value (according to Fujiwara they are rarely used in CBA). And CBA is effectively an aggregation of all compensating welfare changes across society with the use of the sum rank rule (every individual has equal weight in societal wellbeing calculation).

But in SROI: "practitioners build a theory of change highlighting the likely outcomes of an intervention" and eventually 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." (Fujiwara 2015, 7). The author has no good counter argument to Fujiwara's claims, except the fact that even WPA and WTP measures that are used in CBA can differ from each other significantly due to loss aversion (Kahnemann et al. 1991), which Fujiwara himself also points out (2015, 14).

Fujiwara's critique applies also to the case study presented in this thesis. There is no solid normative foundation for using the so-called social opportunity costs or input prices as measures of outputs or outcomes. Here, the blind alley was avoided by treating all the costs of activities as parts of a matrix that affected the "wellbeing vector" by unknown

magnitudes. The main argument for focusing on the “wellbeing vector” instead of, for example, cost savings was that the primary aim of the Organization B is not to create savings but to reach people and improve mental health. The primary aim of the whole healthcare system is to have an influence on the state of people’s health. Inpatient days, outpatient care, surgeries, vaccinations etc. are just the outputs of the process’ inputs (resources) to achieve that aim. (Sintonen & Pekurinen 2006, 52-55.)

Finally, on discounting. According to Maier et al (2015), in the case of social returns that are monetized by the analyst, in this case by the author, discounting for inflation makes no sense. This is because the benefits are benefits “in kind”. With regards to attribution, the later the (positive) outcomes occur, the more could, according to Maier et al. (ibid.) go wrong when realizing them. There is no transparent way to arrive at a discount rate (without evidence) and without care, discounting can result in double-deduction of deadweights: once by deducting the actual deadweight in the period of evaluation and once when discounting. That is why the authors propose using the concept of social time preference (ibid.).

The reason in this thesis not to use a discount rate or social time preference was simply the fact that the evaluation was considering only a period of one year. There is no need for adjusting inflation (even if it did make some sense, see above). A curiosity worth mentioning is that if we followed the rule stated earlier (in Chapter 3.1), that the social discount rate should be smaller than the market interest rate, and take the notion of a risk-free rate from Gargani (2007, 119), as the interest rate on government bonds being the lowest bound of discount rates, we did not have to discount future values. Rather, with the current state of the market, there would be a negative discount rate, meaning it would be better to wait longer for the benefits to occur. Good things come to those who wait, as the saying goes, but this might sound counter intuitive for some.

6.3 What should the financier think about SROI?

With regards to the investor’s point of view yet one more notion to be continued from the previous section. Discounting for opportunity costs is according to Maier et al (2015, 27) probably the trickiest case, because there is no other option or required return of interest as in for-profit investments. In the case of “purely social” investment, the amount invested is no longer investor’s property. The crucial question is, what is the I in the abbreviation

SROI? That remains unclarified to the author of this thesis, because it is not used in the same manner as the concept of social investment, which on the other hand is not considered as investment in the economic sense by everyone. We have already discussed SROI's relation to Social Impact Bonds – whose return could in theory provide an alternative for investments in SROI – and social investments. But as the SIBs, and arguably social investments also, only measure tangible, monetary returns, this would refute the whole point of *social* return on investment.

From around the mid-2000s onwards and increasingly in the 2010s, a fair amount of third and public sector projects, for example in the Netherlands and especially in the UK, have been using SROI for evaluation. In the UK, the Government committed itself in 2008 to a three-year project aimed at developing SROI as a standardized accounting method of public policy for non-profit sector organizations in public service delivery (Hall & Millo 2018). The Department of Health promoted SROI and established the Social Enterprise Investment Fund (SEIF) to support social enterprise entry into the NHS market. Furthermore, the Department of Health made SROI a feature of its funding to encourage its use (Millar & Hall 2012).

SROI has been suggested as a useful framework for evaluating public health programs (Edwards et al. 2013). According to Hall & Millo (2018) the standardization of SROI as a method to build the evidence base for explaining and rationalizing the involvement of non-profit organizations in public service delivery was due to SROIs capturable and communicability. The SROI ratio, regarded both as the biggest allure as well as danger of SROI (Maier et al. 2015), is a big part of these features.

According to Krlev et al. (2013) there is often a lack of reflection on the meaning and acknowledgement of the limitations of the SROI ratio. As Olsen and Lingane (2003) state, the SROI value should never be used as the sole indicator of social performance. Funders need to be subjective in their decision-making process (Maier et al. 2015) and should not benchmark SROI results because higher values do not mean more effective projects (Shaw 2018), which was also verified in the review that was carried out in this thesis. Maier et al (2015) warn that if the standardization of SROI proceeds, activities not leading to high SROI values are in practical danger of losing out in the race for funding, even if

the scientific bases for such funding decisions may be incorrect, and NPOs should be aware of that. Paton (2003) refers to this phenomenon as “management-by-proxy”.

How does this all relate to the so far unused objective function in non-profit funding that we formulated in the section 2.4.3? To freshen the reader’s memory, we stated that the public funder STEA tries to minimize costs with any verifiable effect and tries to account for different cost-structures of different projects. Perhaps SROI could be used in a way that any project with a SROI ratio above 1 could be regarded as effective ($e = 1$) and therefore worth funding (whether the ratio is 1 or 2 or 4 did not matter)? This would likely not work because there would still be an incentive to arrange or sort out projects by their ratios. At the end the process of writing this thesis, the author came to realize that STEA, with years of experience in evaluating applicants, has its own quality criteria and framework for rating applicants. Their criteria is based mainly on two methods of evaluation: CAF and EFQM. (STEA, no date)

The scale in STEA’s quality criteria goes up to hundred points and comprises of various areas of evaluation. It is to some extent an ordinal measure where the score tells not only about the quality of the application, but also its quality compared to the others. This does not change the results of our reasoning about the objective function in Chapter 2.4.3. But a better description of STEA’s objectives could be one where the amount (\bar{b} , budget) was simply shared out in a rank of order to those on top of the quality criteria according to their cost-structures (c_i), up to a point where the budget was used. Effectiveness ($e = 0,1$) did not have to play any role in the process, because it is internalized in the quality criteria. The quality criteria is a complex structure (a multi-argument model) of its own. From the point of view of the applicants, it would probably be more useful to familiarize oneself with CAF or EFQM than SROI.

The questions of social investing or impact investing were mostly left out of this thesis since SROI proved out not to be utilized so much in actual investing or even pay for success contracts. Maier et al (2015, 35) see no reason to assume that SROI would be most suitable for assessing impacts in service delivery either, but that it could be useful in gaining advocacy or in community building. They suggest that this could be done via

comparing results of SROI analyses to other operationalizations and frameworks used in evaluation of NPO programs.

6.4 Conclusion

In this thesis, a scoping review on SROI in context of rehabilitation was carried out. Since rehabilitation is said to be the key health strategy for the 21st century and SROI has gained prominence as an evaluation method, the amount of SROI evaluation studies in the field of rehabilitation was surprisingly low. From the point of view of this thesis rehabilitation was of course simply a subject of research. But it might be that both goals – establishing rehabilitation as the key health strategy and SROI as a standard method for economic or even NPO evaluation – need to be developed a lot further. The need for (academic) methodological development of SROI can now be stated as one of the main findings outside the actual research questions of this thesis (see Krlev et al. 2013; Arvidson et al. 2013; Banke-Thomas et al. 2015; Fujiwara 2015 & Hutchinson et al. 2018.)

The case study conducted was focusing on measures to support mental health rehabilitation in outpatient care. The inpatient care that has in mental health decreased during the last decades, can be taken as an opportunity cost for functioning outpatient care. Bigger questions that are to be dealt elsewhere, are such as whether the provision of services for outpatients should be at the shoulders of NPOs (the Finnish Health Care act does not state anything about organizations). Either way, the early access to at least some kind of care (“first aid”), that is crucial in mental health, is something that the NPOs have effectively had a key role in providing in the Finnish context for quite a long period of time now.

Yet another question is whether SROI is the optimal method for making decisions on which spheres of public health should most pounds or euros be put. The findings indicate that this should not necessarily be the case, since there is an established tradition already in place for making these decisions. But the author’s final remark is, that no single framework, or figure, should dominate anything.

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APPENDICES

APPENDIX A: THE SROI PRINCIPLES

1. **Involve stakeholders:** Inform what gets measured and how this is measured and valued by involving stakeholders. Stakeholders are those people or organizations that experience change as a result of the activity and they will be best placed to describe the change. This principle means that stakeholders need to be identified and then involved in consultation throughout the analysis, in order that the value, and the way that it is measured, is informed by those affected by or who affect the activity.
2. **Understand what changes:** Articulate how change is created and evaluate this through evidence gathered, recognizing positive and negative changes as well as those that are Intended and unintended. Value is created for or by different stakeholders as a result of different types of change; changes that the stakeholders intend and do not intend, as well as changes that are positive and negative. This principle requires the theory of how these changes are created to be stated and supported by evidence. These changes are the outcomes of the activity, made possible by the contributions of stakeholders, and often thought of as social, economic or environmental outcomes. It is these outcomes that should be measured in order to provide evidence that the change has taken place.
3. **Value the things that matter** Use financial proxies in order that the value of the outcomes can be recognised. Many outcomes are not traded in markets and as a result their value is not recognised. Financial proxies should be used in order to recognise the value of these outcomes and to give a voice to those excluded from markets but who are affected by activities. This will influence the existing balance of power between different stakeholders.
4. **Only include what is material:** Determine what information and evidence must be included in the accounts to give a two and fair picture, such that stakeholders can draw reasonable conclusions about Impact. This principle requires an assessment of whether a person would make a different decision about the activity if a particular piece of information were excluded. This covers decisions about which stakeholders experience significant change, as well as the information about the outcomes. Deciding what is material requires reference to the organisation's own policies, its peers, societal norms, and short-term financial impacts. External assurance becomes important in order to give those using the account comfort that material Issues have been included.
5. **5. Do not over-claim:** Only claim the value that organisations are responsible for creating. This principle requires reference to trends and benchmarks to help assess the change caused by the activity, as opposed to other factors, and to take account of what would have happened anyway. It also requires consideration of the contribution of other people or organisations to the reported outcomes in order to match the contributions to the outcomes.
6. **6. Be transparent:** Demonstrate the basis on which the analysis may be considered accurate and honest, and show that it will be reported to and discussed with stakeholders. This principle requires that each decision relating to stakeholders, outcomes, indicators and benchmarks; the sources and methods of Information collection; the different scenarios considered and the communication of the results to stakeholders, should be explained and documented. This will include an account of how those responsible for the activity will change the activity as a result of the analysis. The analysis will be more credible when the reasons for the decisions are transparent.
7. **7. Verify the result:** Ensure appropriate independent assurance. Although an SROI analysis provides the opportunity for a more complete understanding of the value being created by an activity, it inevitably involves subjectivity. Appropriate independent assurance is required to help stakeholders assess whether or not the decisions made by those responsible for the analysis were reasonable.

APPENDIX B: THE SCOPING REVIEW PROCESS

Round I

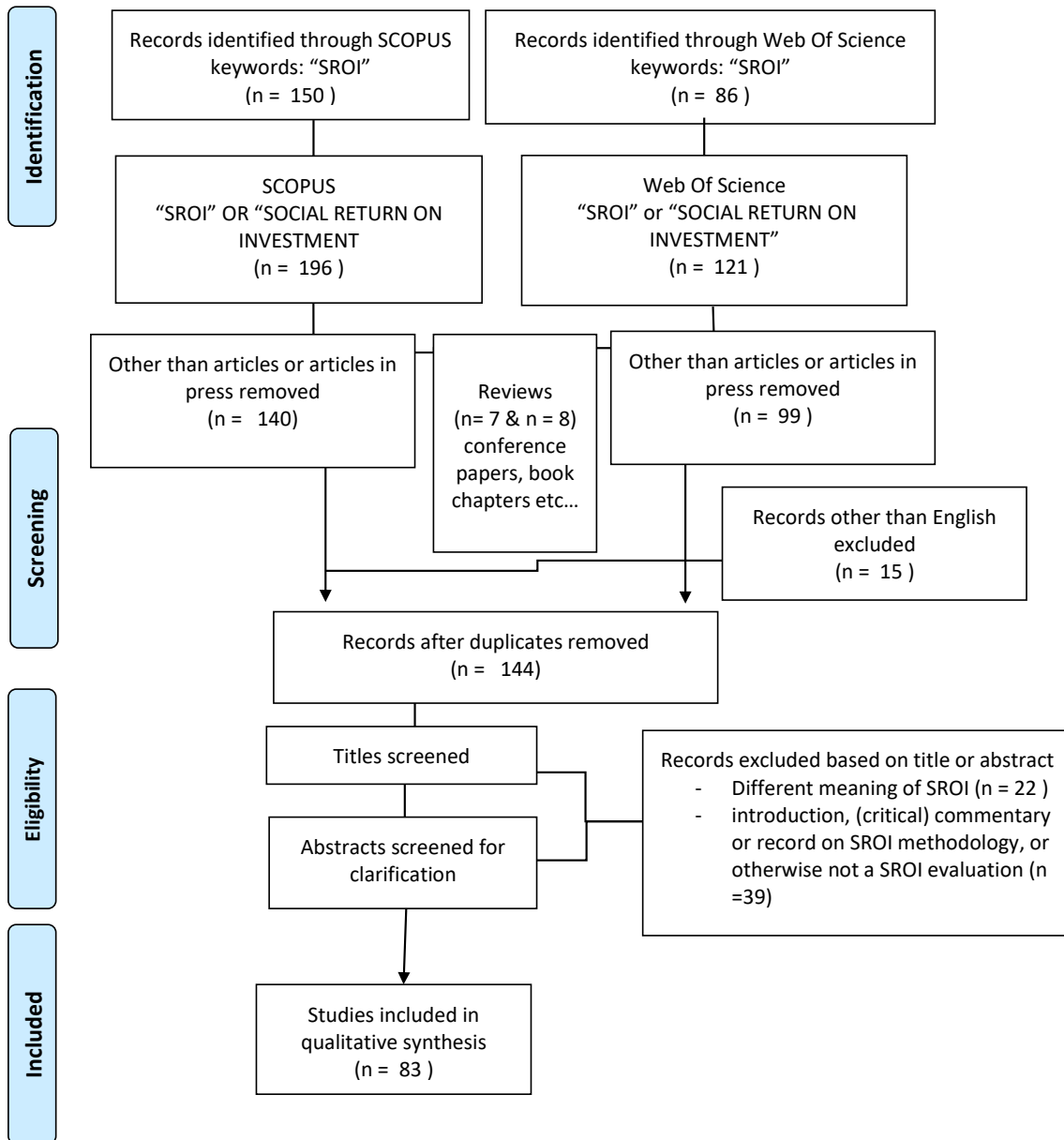
During the first process, phase, or as we call it, Round I, two research article databases, Scopus and Web of Science (WoS from now on) were screened. The simple one-word search with the search term “SROI” produced 150 entries in Scopus and 86 results in WoS.

Even though SROI is an established abbreviation for *Social Return on Investment*, it surely has many other meanings, as we came to find out. Perhaps not all social return related studies use the abbreviation SROI. That is why the operator *OR* and *Social Return On Investment* were added to the search term. The amount of entries naturally increased in both data bases due to this. But since we were interested in actual Social Return On Investment SROIs, the next step was to double-check and add “NOT ‘SROI’ to the research term, so that it came to be: “*Social Return on Investment NOT SROI*”. This produced 25 entries in Scopus and 35 entries in Web of Science. Therefore, it was well founded to use the whole concept name and the OR operator to maximize coverage.

For the Round I was for study module purposes, and not an actual scoping review, the exclusion features of the online data bases were used during the next step. The aim in Round I was to identify scientific articles only, with focus on published results of single SROI studies, excluding also former (systematic) reviews (which I later was to familiarize myself with during Round II). Other than articles or articles in press were removed from the results. This included seven (7) and eight (8) review articles in Scopus and WoS, respectively. However, the largest share of this criteria consisted of *conference papers*, 39 of which were excluded in Scopus. The search systematics in WoS is a little different than in Scopus, but the largest group of excluded entries in WoS was *meeting papers*, and they are most likely included in the above-mentioned category.

The last default feature of Scopus and WoS was the selection of language, by which a total of fifteen (15) entries were excluded based on been written in a language other than English. These included: six in Spanish, two in Russian, 2 in German and one each in Italian, Portuguese and Slovak, and one entry with no defined language.

After the removal of duplicates, which was a task we ended up doing manually, there was an amount of 144 articles to be screened. The full process in Round I is depicted in the figure below.



As mentioned, abbreviation SROI can refer to multiple concepts other than Social Return on Investment. This became even more clear during the screening and excluding entries based on titles and abstracts. Other meanings of SROI abbreviation included at least:

- *SELFROUTING OPTICAL INTERCONNECTS*
- *Short Range Order Diffuse Intensity*

- *Spontaneous reduction of intussusception*
- *selected seed regions*
- *Scalable ROI (region of interest)*
- *summed region of interest*
- *skeleton-based region of interest*
- *secondary region of interest*
- *segmented ROI (region of interest)*
- *syndromes resembling OI (osteogenesis imperfecta)*
- *student ratings of instructions*

In addition, a confusingly synonymous but different concept came across: *sustainable return on investment*. Not least because these two concepts share a common ground, environmental sustainability (SROIs are also done on matters of environmental issues and environmental factors can be included in SROI accounting), it was necessary to skim through that article and few others before exclusion.

The different meanings of SROI listed above were used inter alia in following journals: *ELECTRONICS LETTERS, PEDIATRIC RADIOLOGY, EPILEPSY RESEARCH, MATERIALS TRANSACTIONS, INTERNATIONAL JOURNAL OF REMOTE SENSING, Genes Chromosomes and Cancer, BMC Pediatrics* and *Life Science Journal*. These journals represent, as their names describe, fields such as medicine, genetics and electronics. A fair share of search entries could thus be directly ruled out based on title and journal topic, even though all abstracts were checked just to be on the safe side, and a significant amount of definitions of the abbreviation SROI were identified from the abstracts. Different definitions or meanings of SROI accounted for at least 21 entries.

Without going into details, the research question in Round I or the initial review, was different than what was later found out to be relevant. This happens often in scoping reviews, in fact, it is but one of the targets of a scoping review: to clarify and improve one's research question, formulate or re-formulate a more valid research task or question. (Peters et al. 2011.)

The initial question was, let us use the original main title of our (assignment) review, if there is a “*Publication Bias in Societal Value?*”. Put shortly, if negative, or below 1 SROI-ratio social return reports (of various topics) get published at all. This still is a valid question worth researching for, and to which we did not deliver an exhaustive answer. Naturally, one cannot meaningfully compare different kind of SROIs from different fields. But as mentioned in the Introduction, the “embarrassing” fact, that in most cases, rehabilitation is not effective compared to treatment as usual, underlines the relevance of this question in relation to the topic at hand. This matter will be discussed in the last section. However, it still is a bit of a side path of what became my main research task: to see, if SROI has been implemented in rehabilitation at all, and how.

Round II

Due to the research task in Round I, a significant amount of certain types of articles had been excluded from the analysis. These include (see figure 4) introductions to SROI, critical commentaries of SROI or SROI methodology and some other SROI-related articles that were not SROI analysis *per se*. These amounted to 39 entries, which had to be now re-examined, because the research task in Round II had changed. Before that, a re-search of the chosen data bases was to be conducted.

Repeating the search with search term:

*(SROI OR "Social Return on Investment") AND rehab**

produced three (3) results in Web of Science and five (5) in Scopus. All three entries found in WoS were included in Scopus results, and all but one result were already included in the scope of the first search round (Round I) results. The “remainder”, the one article that was not captured in Round I, was published as recently as in October 2019, and was actually defined as *article in press* in Scopus results⁹. Despite the rehabilitation-wise promising journal name *Neurorehabilitation And Natural Repair*, sROI was written in lower case *s*, and again, meant *Statistical region of interest* in this context.

Now, if we add to this the fact that another data base, *PubMed*, results ought to be part of *Medline* search results, which again ought to be part of Scopus results (Putous 2019), I may conclude that we are almost on the safe side to say that at least the scope of the

⁹ The search was conducted last time in the 13th of October 2019.

scientifically published SROI studies had been defined. During Round I, results from a more specifically social science-oriented database, *SocIndex*, were probably also used. But as repeatability is an essential feature of any review process, SocIndex results were not included here. We used SocIndex only as part of a general search engine of University of Eastern Finland (UEF), in which the results cannot be separated by data base (Socindex results are included in the common search results). Whilst a person owning UEF credentials could repeat the search, the results would probably not differ that much; with a slightly different search term as above *SROI AND “Social Return On Investment” AND Rehab**, UEF search engine produced six results, four of which were in German – and would have been excluded anyway.

Now that the scope of published, rehab*-related SROI literature had been defined, the actual reviewing part could begin. Since the scope of *explicitly* (meaning that the result contained the word rehab* or its variations) rehabilitation-related literature was quite narrow (3 or four articles, see above), the decision was made to go through the body of articles collected in the previous round. This meant another screening of 83 articles plus the additional 39 articles which were excluded in the previous process due to inclusion criteria (no reviews etc.). Instead of explicit keywords, screening was now considering topics that, based on author’s experience, could count as related to rehabilitation in the broad meaning of the term. The analysis was done (manually) in Microsoft Excell by using cell color codes and then filtering the cells by these codes. In the end, there were 10 studies that matched the criteria: rehabilitation-related, published SROI article. The titles and authors of the articles are depicted in the table below.

Title	Authors
The investment and regenerative value of addiction treatment	Iafrati, Steve
Social Return on Investment of an Innovative Employment Option for Persons with Developmental Disabilities COMMON GROUND CO-OPERATIVE	Owen, Frances; Li, Jingyu; Whittingham, Lisa; Hope, Jennifer; Bishop, Courtney; Readhead, Anne; Mook, Laurie
Economic and social impact of personal assistance through the methodology of Social Return on Investment	Ianez Dominguez, Antonio ; Aranda Chaves, Jose L. ; Garcia Romero, Julia
Social return on investment for community-based alcohol consumption control program during Buddhist Lent	Jirarattanasopha, Varangkanar; Witvorapong, Nopphol; Hanvoravongchai, Piya

Using the Social Return on Investment Framework to Evaluate Behavior Changes of Individuals Living With Learning Difficulties	Shaw, Alan
Quantifying the benefits of peer support for people with dementia: A Social Return on Investment (SROI) study	Willis, Elizabeth; Semple, Amy C.; de Waal, Hugo
A development study and randomised feasibility trial of a tailored intervention to improve activity and reduce falls in older adults with mild cognitive impairment and mild dementia	Harwood R.H., van der Wardt V., Goldberg S.E., Kearney F., Logan P., Hood-Moore V., Booth V., Hancox J.E., Masud T., Hoare Z., Brand A., Edwards R.T., Jones C., das Nair R., Pollock K., Godfrey M., Gladman J.R.F., Vedhara K., Smith H., Orrell M.
Integrated treatment program for alcohol related problems in community hospitals, Songkhla province of Thailand: A social return on investment analysis	Tanaree, Athip; Assanangkornchai, Sawitri; Isaranuwachai, Wanrudee; Thavorn, Kednapa; Coyte, Peter C.
The social value of the arts for care home residents in England: A Social Return on Investment (SROI) analysis of the Imagine Arts programme	Bosco A., Schneider J., Broome E.
The social return on investment in community befriending	Arvidson M., Battye F., Salisbury D.
Evaluating societal outcomes of orthognathic surgery: an innovative application of the Social Return on Investment methodology to patients after orthognathic treatment	Baker, C.; Courtney, P.; Knepil, G.

The meaning of green (*good* in Ms Excell default styles) cell style in Table x is straight forward: these studies were included. There is in fact, still one “good” article that eventually got excluded (Jones et al 2015), this was due to final, stricter definition of the expression *rehabilitation related* (see Chapter 4.3) but I have kept the cell style (*followed hyperlink*) and color unchanged for documentative purposes. The red cell color indicates exclusion. The reason for this particular entry (Ianez et al.) to surpass this far was, that it was not for some reason excluded by the data base search algorithm based on language, even though the full text eventually was not in English. The yellow cell color indicates *note* (by default in Excel): the article by Harwood et al (2018) had been misinterpreted as a SROI-evaluation; it was in fact a study protocol, where SROI will be utilized, but the results are not expected to be published until 2021. The remaining “hyperlink” (Baker et al. 2019) at the very bottom was not yet checked, it turned out as well not to be a finished SROI evaluation, but was considered better than Harwood et al, since this study included the two first steps of the SROI process. The “followed hyperlink” style indicate that the articles have been checked.

Conducting a scoping review does not stop in scientific data bases and published articles. In addition to unpublished articles - one definition of grey literature - other types of publications, such as reviews or individual reports, ought to be included. Any limitations to terms of the breadth and comprehensiveness of the search strategy in scoping review should be detailed and justified. (Peters et al. 2011.)

To reach for the full scope by including so-called grey literature, there are multiple strategies. Same as in other types of reviews, the reference list of identified articles and reports should be searched for additional studies (Peters et al. 2011). Here, only the reference lists of identified rehabilitation-related SROI-studies were checked. This was still important procedure, since couple of articles made a successful “comeback” to the very same list of articles they were excluded from. From being, for a reason or another, excluded before (in our assignment) these were now included in the synthesis because they were referred to in another article. In addition to “comebacks”, few totally new articles were also found by using the abovementioned, also known as the “snowball” method (and for economist-readers not to be mixed with the debt-snowball method which is a debt-reducing strategy). Part of the reason why new articles still were emerging is that these articles do not explicitly use the word *rehabilitation*. At this point, a stricter distinction of what counts as rehabilitation had to be made, so that the inclusion criteria would be clear and repeatable.

JBI's (2015) manual also states that “A statement should be included of the reviewers’ intent to contact authors of primary studies or reviews for further information, if this is relevant”. Two authors were contacted, one for a reference for a specific statement (via email, no reply received) and the other for full text of a study (request via *ResearchGate.net*, the article’s status was eventually changed to public, but there is no proof this thesis’ authors

Last, but most certainly not least, when it comes to SROI, there is one significant source of grey literature that was not yet covered. The abovementioned (in Chapter 2.1) Social Value UK’s database of SROI reports. This is of such importance because Social Value UK has been a key developer and stakeholder in SROI and SROI methodology. Social Value UK’s database could theoretically include almost all published SROI-reports, since

Social Value UK provides a range of assurance and accreditation services for Social Value International¹⁰. The author for one knows, that this is not the case, since at least of all the SROI reports I have had a chance of conducting, none has been assured or sent to Social Value UK's database. That aside, the Report Database includes over 300 non-assured SROI reports and over 70 assured SROI-reports.

The Report Database has a menu that was used for search criteria. Searching for assured SROI reports with a keyword *rehab** and later (since the database does not support the Boolean search modifier ASTERISK *) with the word *rehabilitation* and later *rehab* produced four results. The same search from non-assured SROI reports produced the same four results, so the search algorithm does not seem to be working by exclusive logic. In any case, the reports found can be listed here by titles and uploading dates:

[Social Return on Investment Report of Criminon Project](#) Uploaded: 24th August 2018

[Cultural Value: Assessing the intrinsic value of The Reader Organisation's Shared Reading Scheme](#) Uploaded: 9th June 2017

[Freedom Fund Annual Impact Report 2015](#) Uploaded: 24th March 2017

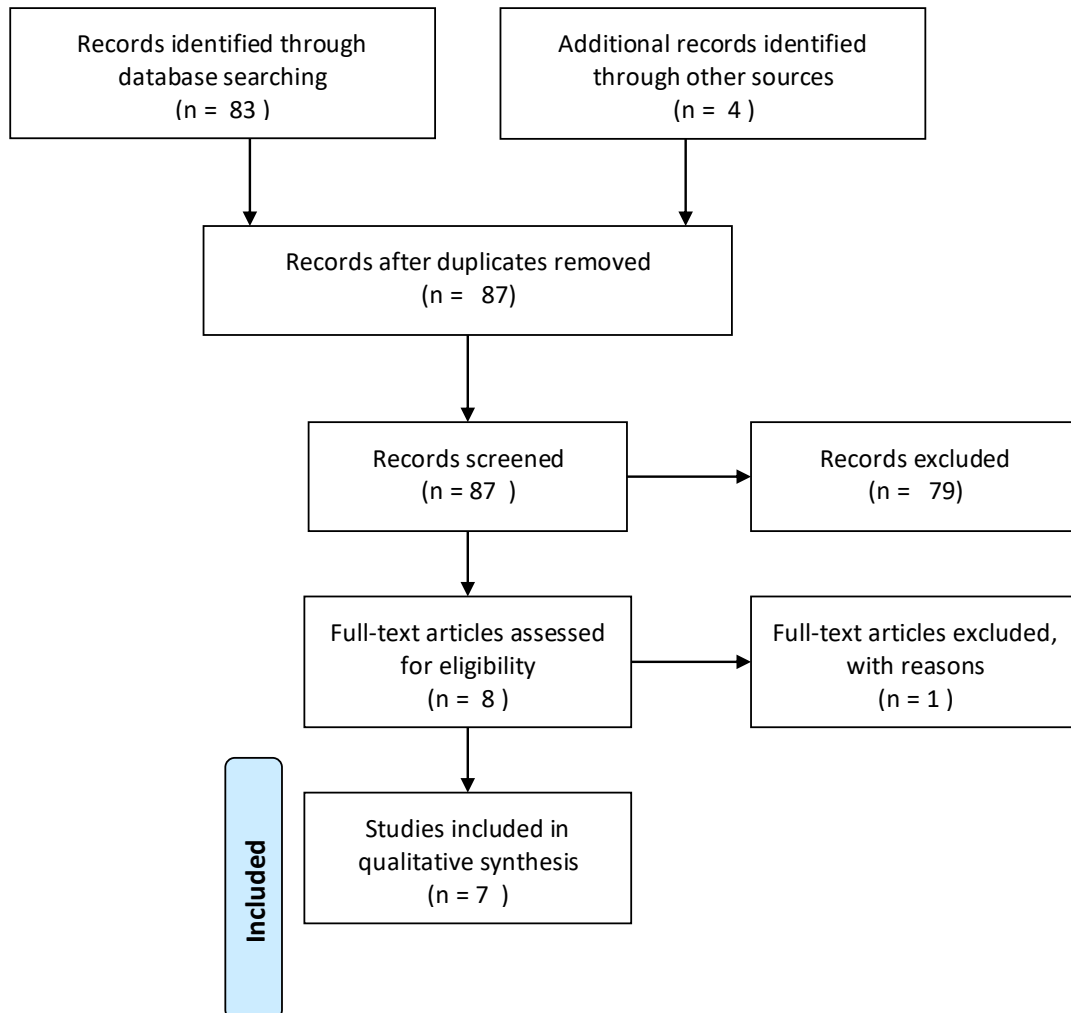
[Kuzuko Game Reserve SROI Summary](#) Uploaded: 9th March 2016

Based on skimming or screening the four reports, they were unfortunately all excluded from the final analysis. In order of appearance:

- 1) Criminon project is dealing with penological/criminological rehabilitation, which is out of the scope of this thesis.
- 2) In SROI considering the Reader's Organization, the word rehabilitation appears in the context of criminal rehabilitation, same as point 1.
- 3) As severe and important as the issues The Freedom Fund deals with are, rehabilitation in its context means rehabilitating "those enslaved and prosecute those responsible"
- 4) In Kuzuko Game Reserve SROI, rehabilitation is natural rehabilitation of a biotope.

¹⁰ Social Value International's assurance standards can be viewed at: <http://www.socialvalueuk.org/app/uploads/2017/08/Assurance-Standard-Aug-2017.pdf>

In the end, due to stricter meaning of the term, there were only 4 records attained from other sources than data bases. The full Round II process is depicted in figure below



APPENDIX C SEARCH HISTORIES AND SROI QUALITY ASSESMENT

Search histories,

PubMed

Recent queries in pubmed
Search,Query,Items
found,Time
#2,"Search SROI",40,07:38:00

Web of Science

[3](#) TOPIC: ((SROI OR "Social Return on Investment") AND rehab*)

1 Indexes=SCI-EXPANDED, SSCI, A&HCI, ESCI Timespan=All years
(13.10.2019)

Scopus

TITLE-ABS-KEY ((*sroi* OR "Social Return on Investment") AND *rehab**)

Dimension number	Dimension	Criterion	Description of criterion
I	Transparency about why SROI was chosen	1	Linked to context discussion?
II		2	Analysis well documented?
III	Study design (approximation of 'dead-weight')	3	Impact map used?
		4	Control group setup applied?
		5	Ex ante - ex post observations performed?
IV	Precision of the analysis	6	Indicators valid & comprehensive?
		7	Proxies valid & comprehensive?
		8	Social effects captured? (Qualitatively)
		9	Social effects captured? (Quantitatively)
V	Reflection of the results	10	Limitations discussed?
		11	SROI ratio interpreted?
		12	Sensitivity analysis performed?

I	(1)	Linked to context discussion?
II	(2)	Analysis well documented?
III	(3)	Impact map used?
	(4)	Control group setup applied?
	(5)	Ex ante - ex post observations performed?
IV	(6)	Indicators valid & comprehensive?
	(7)	Proxies valid & comprehensive?
	(8)	Social effects captured? (qualitatively)
	(9)	Social effects captured? (quantitatively)
V	(10)	Limitations discussed?
	(11)	SROI ratio interpreted?
	(12)	Sensitivity analysis performed?

Examples of quality assessment features for SROI evaluations from Banke-Thomas et al (2015) and Krlev et al. (2014).

APPENDIX D: DETAILED IMPACT MAP OF THE CASE STUDY

STAKEHOLDER	INPUTS	OUTPUTS	QUANTITY	GROS VALUE	Dead-weight	Atribution	Displacement	Drop off	Net value
Customers	<i>hours open</i>	open six days a week	7248 visits	14 496,00 €	0 %	0 %	- €	0 %	14 496,00 €
	<i>leisure groups</i>	bingo chit-chat... (...) ...women's group	total of 1411 activities	4 515,20 €	0 %	0 %	- €	0 %	4 515,20 €
	<i>peer groups</i>	depression bipolar disorder (...) schizophrenia	225 sessions	46 875,00 €	0 %	0 %	- €	0 %	46 875,00 €
	<i>sports</i>	ball games (...) relaxation	686 visits	3 430 €	0 %	0 %	(see text)	0 %	3 430 €
	<i>events</i>	Lecture on Schizophrenia (...)	390 attendances	6 246 €	0 %	0 %	- €	0 %	6 246,00 €
	<i>Trips</i> (See Valuation tab)	(1) Spa (...]	298 attendees	10 770,00 €	N/A	0 %	360,00 € 2 283,00 €	N/A	8 127 €

		(14) Christmass party							
	<i>kitchen activity</i>	meals served on working days	3632 portions	32 324,80 €	0 %	0 %	13 620,00 €	N/A	18 705 €
	<i>waste food</i>	waste food brunch	292 portions	3 504,00 €	0 %	0 %	- €	N/A	3 504,00 €
	<i>excess food served</i>	10 to 15=12.5 persons picking up daily supper, 251 working days 2018	251x12,5=3012 portions	8 910,50 €	0 %	N/A	N/A	N/A	8 910,50 €
Organization A	<i>excess food delivery</i>	some amount of excess school lunch food delivered	N/A	N/A	N/A	100 %	N/A	0 %	- €
	<i>waste food</i>	decreased food waste + CO2 emissions	4 x 240 l bio-waste + 1t CO2 reduced emissions	73 €	0 %	N/A	- €		73 €
Society	<i>charity</i>	50% of the donations to other NPOs	charity 2082 €	1 041 €	0 %	0 %	- €	N/A	1 041 €
	<i>excess food delivery</i>	reduced biowaste & CO2 emissions	5 tKg CO2-ekv. + 40*240 l bio-waste	489 €	0	0 %	- €	N/A	489 €
Local Care Homes	<i>opening hours</i>	Care home residents attend outside activities, care homes avoid sanction fees	68 months 20 % sanctions avoided	124 619 €	0	67 %	- €	0 %	41 124 €
TOTAL				257 294 €	0	83 495 €	16 263,00 €	0	157 545 €