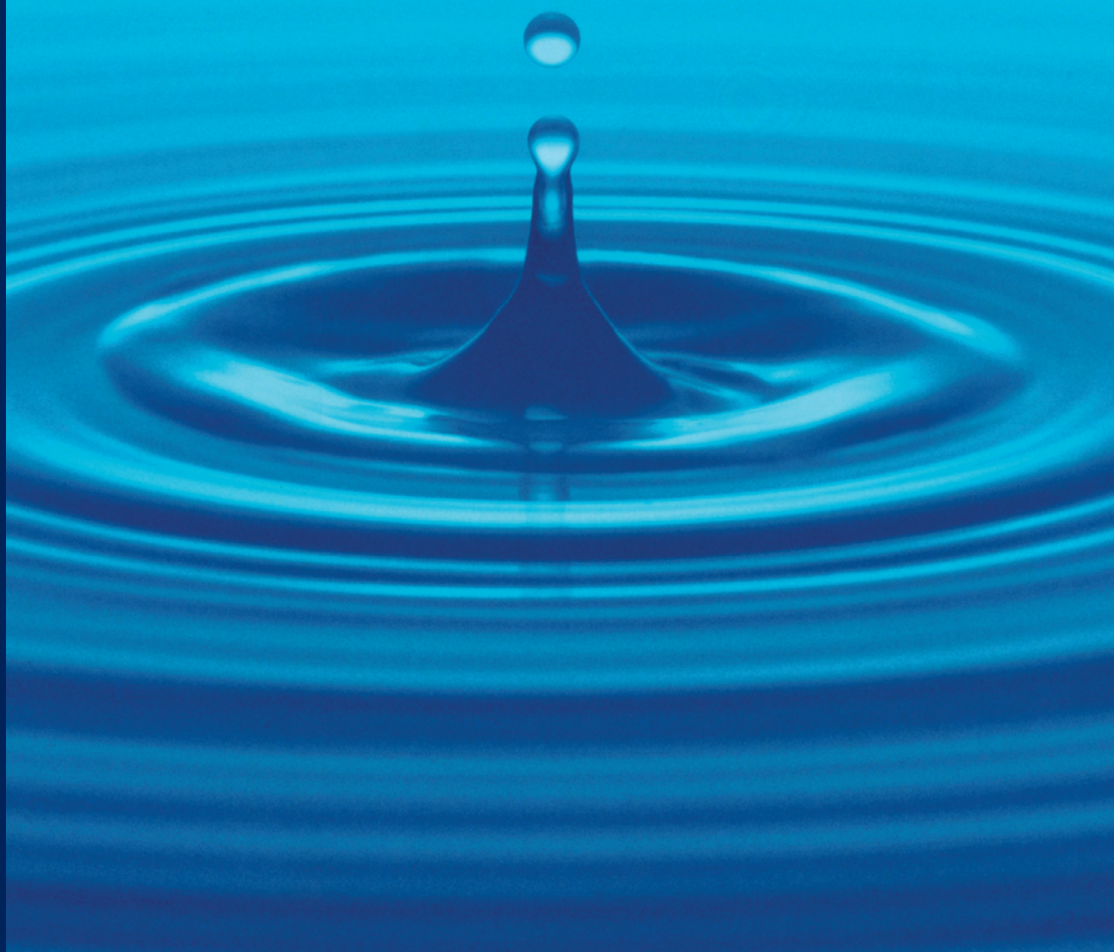


KAREN MAAS

Corporate Social Performance

From Output Measurement to Impact Measurement



Corporate Social Performance: From Output Measurement to Impact Measurement

Corporate Social Performance: From Output Measurement to Impact Measurement

Maatschappelijke prestaties van organisaties:
van output meting naar impact meting

Proefschrift

ter verkrijging van de graad van doctor
aan de Erasmus Universiteit Rotterdam
op gezag van de rector magnificus
Prof. dr. H.G. Schmidt
en volgens besluit van het College voor Promoties.

De openbare verdediging zal plaatsvinden op
woensdag 2 december 2009 om 15.30 uur

door
Karen Elisabeth Huguette Maas
Geboren te Rotterdam



Promotiecommissie:

Promotor: Prof. dr. H.R. Commandeur

Overige leden: Prof. dr. W.B.F. Brouwer
Prof. dr. A.G.Z. Kemna
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Erasmus Research Institute of Management – ERIM
Rotterdam School of Management (RSM)
Erasmus School of Economics (ESE)

Erasmus University Rotterdam
Internet: <http://www.erim.eur.nl>

ERIM Electronic Series Portal: <http://hdl.handle.net/1765/1>

ERIM PhD Series in Research in Management, 182

Reference number ERIM: EPS-2009-182- STR

ISBN 978-90-5892-225-0

© 2009, Maas

Design: B&T Ontwerp en advies www.b-en-t.nl

Print: Haveka www.haveka.nl

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Voorwoord (Acknowledgement in Dutch)

In 1989 begon ik met mijn studie economie aan de Erasmus Universiteit Rotterdam. Toen ik in aanraking kwam met vakken als milieu-economie, milieukunde en sociologische economie werd de studie voor mij pas echt leuk. Het interessante van deze vakken vond ik de vraag hoe organisaties in een kapitalistische markteconomie afwegingen kunnen maken tussen verschillende doelstellingen. Begin jaren 90 werden er al rekenmethoden ontwikkeld die bedrijven hierbij konden helpen. In mijn afstudeerscriptie “milieurendement” heb ik enkele van deze methodieken tegen het licht gehouden en ook toegepast bij het elektriciteitsproductiebedrijf, EPON.

Na afronding van mijn studie in 1995 ben ik als consultant gaan werken, eerst bij het Instituut voor Toegepaste Milieu Economie (TME), daarna bij de BECO Groep. De focus in mijn werk is in de loop van de tijd opgeschoven van milieu-economische vraagstukken naar duurzaamheidsvraagstukken. Wat heb ik veel geleerd over de (on)mogelijkheden voor bedrijven om een bijdrage te leveren aan duurzaamheid. Vragen die in de loop van de tijd steeds weer terugkeerde waren; wat is die bijdrage die wordt geleverd?, een bijdrage voor wie, voor het bedrijf, zijn medewerkers, zijn klanten of voor de maatschappij als geheel?, en op welke manier kan deze bijdrage worden gemeten?. Vanuit het Erasmus Centre for Sustainability and Management (ESM), waar ik in van 2003 - 2005 een dag in de week heb gewerkt, heb ik hier aan kunnen werken en kunnen proeven van het academische werk. Dit smaakte naar meer, mijn ambitie om een proefschrift te schrijven is toen aangewakkerd.

Toen was daar de advertentie: gezocht “Mature Talent”, vrouwen die na minimaal 10 jaar werkervaring terug willen naar de wetenschap en die in twee jaar een versneld promotietraject willen doorlopen. Het leek wel een grap, die advertentie was voor mij geschreven! Vanaf september 2007 ben ik samen met Madeleine Kemna, Margaretha Buurman, en Mirjam van Ginkel, begonnen aan dit avontuur. Opeens was er alle tijd om te leren, te lezen en te schrijven, wat een luxe! Ook was er tijd om vakken te

volgen om de gaten in mijn methodologische kennis op te vullen. In de afgelopen twee jaar heb ik met veel mensen ideeën kunnen uitwisselen en mogen samenwerken. Een aantal van hen wil ik graag specifiek bedanken.

Met Angela van der Heijden heb ik geregeld ideeën uitgewisseld en gebrainstormd over analyses, theorieën, en artikelen. Ook met Frank Boons en Nel Hofstra ben ik een tijdje regelmatig bijeen gekomen om elkaars werk te bespreken. Dit waren welkome en leerzame bijeenkomsten.

Tijdens de maandelijkse Mature Talent lunch konden we ervaringen, uitdagingen en frustraties uitwisselen. De groep werd steeds groter, Anita Vlam en Brigitte Hoogendoorn kwamen er in 2008 bij en Antoinette Rijsenbilt, Mariska Douwens, Suzanne Bijkerk, en Heleen Mees in 2009.

Het onderzoeksproject in opdracht van de Nederlandse Hartstichting naar de maatschappelijke impact van de Nederlandse Hartstichting was een uitdagende afwisseling voor het theoretische onderzoek. Joey Clark, jij hebt de eerste stappen in het NHS project gezet. Ik heb dankbaar gebruik gemaakt van de eerste resultaten. Graag wil ik Hans Stam, Marina Senten, Marc Tijhuis, Désirée Stolker, Raymond Wimmers, Ineke van Dis en Ilonca Vaartjes bedanken voor de prettige samenwerking. Ik kijk uit naar onze verdere samenwerking in het komende jaar. Paulien Booijnck, Fiona Burger en Philippe Janssen, bedankt voor jullie inzet. Martin Klein, Harry Commandeur en Bas Donkers bedankt voor het praktisch en methodologisch meedenken.

Ik vond in Harry Commandeur de meest geweldige promotor die ik mij maar kon wensen. Hij gaf mij alle ruimte voor mijn eigen aanpak, ideeën en was altijd beschikbaar als dat nodig was. Harry, bedankt, voor al het vertrouwen dat je mij hebt gegeven en voor het delen van je kennis. In een laat stadium is Frank Boons mijn co-promotor geworden. Frank, je hebt mij gestimuleerd om mijn bevindingen scherper te formuleren en mijn conclusies net nog die stap verder te brengen, bedankt hiervoor.

Ook wil ik graag de leden van de kleine commissie bedanken, hun scherpe visie en commentaar hebben een belangrijke bijdrage geleverd aan het eindresultaat.

Een aantal collega's heeft delen van mijn onderzoek meegelezen. Angela van de Heijden, Peter van der Swan, en Pursey Heugens bedankt. Kellie Liket, jij hebt je door mijn hele proefschrift heen geworsteld en elke zin op taalgebruik, zowel inhoudelijk als grammaticaal, gecontroleerd. Bedankt voor alle verbeteringen die je hebt aangedragen.

Een aantal maal is mij gevraagd hoe het mogelijk is dat je een proefschrift schrijft in twee jaar terwijl je drie kinderen hebt. Het antwoord hierop is eenvoudig, ik heb een fantastische moeder die heel veel voor ons doet. Zonder haar was dit absoluut onmogelijk geweest. Mama, enorm bedankt voor alles. Papa en Maureen, ook jullie waren altijd bereid de boel op te vangen als dat nodig was. Tenslotte, Oresti, jouw nuchtere blik op mijn onderzoek hield mij op het juiste pad, je liet geen ruimte voor afdwalingen, en stimuleerde mij steeds om door te zetten.

Dit is het dan. De laatste woorden van mijn proefschrift worden nu geschreven. Het was een mooi avontuur, ik heb genoten van elke minuut!

Karen Maas
13 oktober 2009

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Glossary

Added Value

In economics added value is the difference between the customer's willingness to pay and the supplier's opportunity cost (Brandenbruger & Stuart, 1996).

Aligning objectives

To align is to bring into line (Websters online dictionary). To align objectives, you have to know what the objectives are, and how to measure success. What you measure can be improved, what you cannot measure you cannot manage.

Corporate Social Performance

The result of the actions taken by organisations in order to improve their impact on society is what is understood by Corporate Social Performance (CSP) (e.g. Preston, 1988; Clarkson, 1995).

Impact

Impact is defined as the portion of the total outcome that happened as a result of the activity of an organisation, above and beyond what would have happened anyway (Clark et al., 2004, p7). As such, impacts can be differentiated from intentions, outputs and outcomes. While outputs and outcomes are related to the provider of the product, activity or service, impacts are associated with users (Kolodinsky et al., 2006) and other stakeholders. Impact includes both intended and unintended effects, negative and positive effects, and long term and short term effects (Wainwright, 2002)

Intended and unintended effects

Intended effects are related to the activities of an organisation and explicitly aimed for. Unintended effects are also related to the activities of the organisation but are not explicitly aimed for by the organisation.

Social impact

Social impact is the impact of organisations on society on the economic, environmental and social dimension.

Stakeholder

Stakeholders are defined broadly as those groups or individuals: (a) that can reasonably be expected to be significantly affected by the organisation's activities, products, and/or services; or (b) whose actions can reasonably be expected to affect the ability of the organisation to successfully implement its strategies and achieve its objectives (adapted from Freeman (1984)).

Strategy

Strategy denotes the deliberate choice of activities that enables organisations to meet their objectives (Porter, 1996).

Value

Value refers to physical objects, services, or activities that are perceived by an individual or a social group as desirable. Value is a judgment made by individuals and communities that emerge in the context of interactions among economic actors and those that seek to influence them. Together they enact the specific value provided for the firm, society, and ecosystems.

Chapter 1

Introduction

“The test of our work must be found in results, in literally changing the world, in impact. What endures from our work is not how hard we try, or how clever we may be, or even how much we care.(... ..) Ultimately, what is remembered is how we have been able to improve lives”.

Dr. Judith Rodin in the 2006 Annual report of the Rockefeller Foundation

1.1 Scope

All organisations have social, environmental and economic impacts that effect people, their communities and the natural environment. Impacts include intended as well as unintended effects. While intended effects are related to the activities of an organisation and explicitly aimed for, unintended effects are also related to the activities of the organisation but are not explicitly aimed for by the organisation.

Intended effects include for example the production of products or services. In the case of for-profit organisation it also includes profit for the shareholders. These effects are accounted for by the organisation and are traditionally included in performance measurement and management decisions. Unintended effects might include effects on the natural environment such as emissions of air pollutants, waste and energy use. Moreover, unintended effects can include adverse impacts on human beings, their property, their welfare and their well-being. These effects are traditionally not included in performance measurement or management decisions.

Governments, activist, the media and consumers request organisations to be more and more accountable for the social and environmental consequences of their organisational activities. This trend is illustrated by theoretical concepts that have been renamed and reframed many times over the past years – e.g. sustainability, eco-efficiency, corporate citizenship, strategic philanthropy, corporate responsiveness, social entrepreneurship and corporate social responsibility. Consequently, an increasingly amount of organisations do not only strive for economic gains but adopt a broader view to take responsibility for their economic, environmental and social impact on society. Impact includes intended as well as unintended effects, negative as well as positive effects and both long term and short term effects (Wainwright, 2002). Impact can be assessed at various levels including the individual, organizational, community and policy level (Yates, 2004). The term social impact is used throughout this dissertation to capture the impact on society on the economic, environmental and social dimension.

Increasing expectations

The rising expectations of responsible business behaviour results in a growing debate about the extend to which organisations are responsible for the (negative) impacts related to their products and services. Although the social responsibilities of organisations have already been under discussion since the 1950s, it was in the 1970s that a trend towards eco-efficiency stimulated organisations to reduce their environmental impacts. In the 1980s and 1990s, next to environmental issues, social issues like child labour, human rights, and stakeholder satisfaction, received increasing public attention. The public response to Shell's attempt to sink its floating North Sea oil storage tank, the Brent Spar, illustrates the consequences of failing to incorporate broader social expectations.

In response to the request to take responsibility for their effects on society, organisations aim to improve their impact by investing in stakeholder satisfaction and by preventing or solving environmental and social problems. Illustrative is the global concern for obesity which resulted for example in initiatives by the Coca Cola

Company to change product formulation, provide more on-pack nutritional information, and join campaigns to promote healthier life-styles. Another example is the industrial organisations that have been targeted by several non-governmental organisations (NGOs) concerning human rights issues and working conditions for employees in the factories in developing countries. For example, Nike changed its strategy by starting to improve working conditions in contracted factories in developing countries, aiming for carbon neutrality, and working towards making sports available to young people across the world. Other international companies undertake initiatives such as abandoning child labor in their value chain (e.g. Ikea), adapting the ‘cradle to cradle’¹ concept (e.g. Ford), developing sustainability purchasing agreements with suppliers (e.g. Philips) or developing stakeholder consultation programmes (e.g. Shell).

Blurring boundaries

The interest of organisations to improve their impact on society is not sector specific. In corporate boardrooms managers are more and more being asked to describe, for example, their impacts on the natural environment or the local economy (Clark et al., 2004). Similarly, also in NGOs or governmental organisations there is an increasing interest in more tangible responsibility for the social impact created for each invested or granted Euro or Dollar (Clark et al., 2004). All of these trends implicate that organisations need to improve the management of their environmental and social impacts, as it urges organisations to assess their impact across the environmental, social and economic dimension. Ideally, social impact would be incorporated into management decisions and corporate strategy. This development changes the boundary between intended and unintended impacts.

¹ The ‘Cradle to Cradle’ concept is developed by Prof. dr. M. Braungart and is a design concept that models industry on nature's processes in which materials are viewed as circulating nutrients and waste is non-existent (for more information see Braungart et al., (2007)).

In the case of Nike the negative media attention urged Nike to pay attention to the unhealthy working conditions in production factories. By doing this, Nike incorporated the working conditions into management decisions. Next to this, Nike was stimulated to improve the working conditions resulting in investments to improve the situation. In this example, the negative media attention resulted not only in a shift from unintended to intended impacts but also in reduction of the negative impact.

In short, unintended impacts become intended impacts when these impacts are incorporated in management decisions; the boundaries between intended and unintended impacts are blurring. This confronts organisations with the question: what is their impact on society and how can it be measured?

Measurement

The result of the actions taken by organisations in order to improve their impact on society is what is understood by Corporate Social Performance (CSP) (e.g. Preston, 1988; Clarkson, 1995). Conventional performance measurement is often based on the so-called goal-attainment approach and does usually not consider social or environmental questions. The assumption that underlie the goal-attainment approach is that the goals of an organisation are identifiable and unambiguous (Forbes, 1998). An organisations' effectiveness is represented by the attainment or progress towards these organisational goals. Attaining organisational goals such as increasing production, increasing profit or reducing costs, can be researched by using conventional performance measurement methods. Including impact upon the society on various dimensions - economic, environmental, social – into performance measurement complicates the ability to identify, measure and value these impacts. However, it contributes to the completeness of the performance measurement. Mostly environmental and social impacts are not expressed by the market, as they do not have a market value and are therefore often fundamentally ignored by companies (Schaltegger & Burritt, 2000).

Current practice in performance measurement tends to focus on measuring only a part of the total impact that organisations have on society. While generally accepted principles of financial accounting are established to measure and report on economic impact on an organisational level, comparable standards for measuring the impact upon the society have yet to be developed (Maas & Bouma, 2005). This lack of common practice, methods and standards results in companies measuring only business impact and financial results even when social goals are the primary drivers for operational choices (Elkington, 1999; Schaltegger & Burritt, 2000; Clark et al., 2004). Philanthropy is an example of a practice with a societal goal, as it includes voluntarily doing good aiming at a positive contribution to society by improving human welfare and the common good in general (Varadarajan & Menon, 1988). However, also in case of philanthropy many companies measure only financial impact instead of impact upon the society. Carrigan (1997) finds that 75 percent of 180 UK industrial and consumer firms fail to monitor the impact of their philanthropic work on society. There are serious implications to the inability to measure social impact. Firstly, enormous sums of money and contributions are spend without the ability to measure whether it lives up to its promises and whether this money is spend effectively (Carrigan, 1997). Secondly, one could argue that what really determines the effectiveness of non-profit organisations is the extent to which missions are being achieved and an actual impact upon the society is created (Herman & Renz, 1998). Nevertheless, many non-profit firms also still focus on measuring and reporting on financial information instead of on the actual impact on society (Clark et al., 2004).

Social Impact

Despite decades of debate around the topic of CSP, the larger question about the impact of organisations on society remains largely unexplored (Wood, 1991; Waddock & Graves, 1997; Margolis & Walsh, 2003; Orlitzky et al., 2003). Existing CSP research and practice are accompanied by three major limitations. Firstly, existing research focuses almost exclusively on outputs instead of impacts. Secondly, the current focus in the literature is mainly on the micro, organizational, level, instead

of on the macro, societal, level. Thirdly, current research focuses on what to measure instead of how to measure, evaluate and include social impact into organizational strategy and management decisions.

This dissertation focuses on social impact measurement. In contrast to activities and output, impact is used to capture the effects on society as a result of organizational efforts instead of measuring intentions or activities undertaken by organisations.

1.2 Objectives and research questions

This dissertation focuses on the theory, concepts and tools to measure social impact contributing to the ongoing discussion by aiming at two objectives. The first objective is to increase the understanding of social impact measurement of organisations; the second objective is to propose a framework and methodology that facilitates social impact measurement.

The following seven research questions are addressed to meet the objectives of this dissertation:

1. What is social impact of organisations? (Ch 1-6)
2. How can social impact of organisations be measured? (Ch 1-6)
3. How can business activities simultaneously create value for a firm, society, and ecosystems? (Ch 2)
4. Which measurement methods are available to measure social impact of organisations? (Ch 3)
5. What are the different characteristics of these impact measurement methods? (Ch 3)
6. Do organisations actually measure the impact of corporate philanthropy and what are the drivers for measurement behaviour? (Ch 4)
7. What is the social impact of the Netherlands Heart Foundation? (Ch 5)

The first two questions are the central questions in this dissertation: they are discussed throughout all the chapters. In the following paragraph the structure of the dissertation is explained as well as the research methods used.

1.3 Research methods and structure of the dissertation

This dissertation is constructed around four papers (see figure 1-1). Chapter 2 is conceptual in nature and researches the impact of corporate social initiatives. In Chapter 3 existing measurement methods are collected and classified. Chapter 4 is explorative in nature and researches actual impact measurement behavior of firms. Chapter 5 describes a case study where an impact measurement approach is developed and subsequently tested empirically.

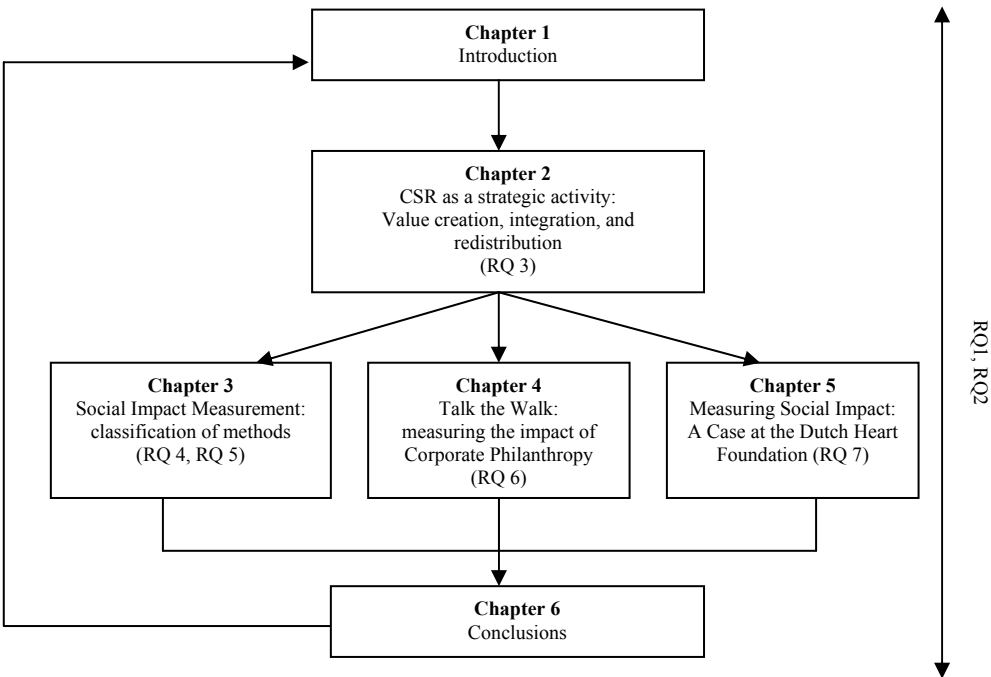


Figure 1-1: Structure of the dissertation

Chapter 2: CSR as a strategic activity: value creation, integration, and redistribution

In recent years Corporate Social Responsibility (CSR) has become increasingly important as the concept that frames the business contribution to sustainability. In our view, CSR has potential to become a strategic activity adding value on different dimensions - business, society and ecosystems - if two conditions are met. Firstly, CSR needs to become fully integrated in the strategy of the firm. Secondly, these new or additional values of CSR need to be measured and monitored. In this second chapter, three ways in which CSR may provide value to a firm, society, and ecosystems are distinguished; value creation, value integration, and value redistribution. Building on this distinction, the consequences for measuring the impact of CSR activities are explored. The objective of Chapter 2 is to conceptualize the strategic potential of CSR. To this end, we address the questions concerning how the impact of business activities for a firm, society and ecosystems can be defined and how the impact of activities of a firm can be measured.

Chapter 3: Social Impact Measurement: classification of methods

In line with the changing needs for management information as a result of increased interest in social corporate responsibility and impact measurement many different impact measurement methods have been developed. This chapter analyses methodologically contemporary social impact measurement methods. Social impact measurement methods differ in perspective, purpose and approach. These differences make it hard for an organisation to decide what would be a relevant method for them to use. The objective of Chapter 3 is to provide an overview of existing social impact definitions and social impact measurement methods. In this chapter, the main differences between the methods are analysed and the characteristics of the methods are defined. Based on this information a classification of methods is developed that enables managers to choose between the multitudes of available social impact measurement methods.

Chapter 4: Talk the Walk: measuring the impact of corporate philanthropy

Corporate philanthropy is regarded as a measure of a firm's Corporate Social Performance (CSP) (Carroll, 1979, 1991; Seifert et al., 2004; Brammer & Millington, 2008). Strategic philanthropy has a direct and measurable impact on both a corporation's balance sheet and social welfare, as it increases trust, loyalty and goodwill (Godfrey, 2005). In other words, strategic philanthropy has a dual objective: social performance and financial profitability (Porter & Kramer, 2002; Saiia et al., 2003; Seifert et al., 2004). Existing research has focused mainly on the financial results of corporate philanthropy while the impact on society is often neglected. The objective of Chapter 4 is to explore whether or not firms measure the impact of corporate philanthropy along the three dimensions of business, society, and stakeholder satisfaction and reputation. Next to this, potential drivers for measuring impact are explored. The analysis is based on longitudinal cross-sectional and cross-national data of over 500 firms listed in the Dow Jones Sustainability Index. A framework is developed based on institutional and legitimacy theory and information from accounting literature. Logistic regression is used to test our framework.

Chapter 5: Measuring Social Impact: A case study of the Netherlands Heart Foundation

The objective of Chapter 5 is to develop and test an impact measurement method based on an empirical case study. In Chapter 5 the results of a case study of the Netherlands Heart Foundation (NHF) are described. The research question asks: 'How can we measure the social impact of the Netherlands Heart Foundation?' In this study, we use triangulation, qualitative and quantitative methods to validate the results. A literature study is conducted to identify an initial approach in order to define the impact of the Netherlands Heart Foundation. Theory of change (Weiss, 1972) is used to develop a so-called mind map that visualizes all chains of choice and effect. The mind-map is based on 16 semi-structured interviews and two discussion sessions. During the interviews the potential social impact of the NHF was discussed, both in terms of indicators and amounts. The indicated potential impact categories are (1) impact on social costs, (2) impact on life expectation, and (3) impact on quality of life.

The discussions during the interviews on the amount of impact of the NHF pointed in the same direction; all the interviewees expected that there is a positive impact. However none of the interviewees could make this more tangible by putting an amount (in Euros or percentages) to the impact. The NHF however, wanted to sustain these results with quantitative data. In Chapter 5 the impact of the NHF is quantified for the case “returning to work after an Acute Myocardial Infarction (AMI)”. In the case study the economic burden of AMI is estimated for the period of 1980-2005. This is done in three steps. Firstly, the changes in the costs related to AMI, the so-called change in economic burden, are estimated. Direct health care costs and indirect non-health care costs (i.e. productivity costs) are taken into account. Secondly, the social benefits are assessed by calculating life span prolongation and quality of life. These two factors are captured by calculating so-called disability adjusted life years (DALY’s). Thirdly, the impact of the NHF is assessed by attributing a specific part of this change in costs and benefits to the NHF. The results show a first attempt to measure the impact of a Dutch non-profit organisation.

Chapter 6: Conclusions and directions for future research

Finally, Chapter 6 provides a brief summary of the overall conclusions with respect to the research questions and objectives. The limitations of this research are discussed, accompanied by a research agenda. In addition, Chapter 6 discusses the implications of this dissertation for research, corporate management and society.

All four articles of this dissertation are developed as independent contributions and can be read as individual essays. Consequently, the articles do not harmonize with each other in the way a monograph does. Nevertheless, all together the separate articles form more or less a coherent line of study as they were guided by the objective to increase the understanding of impact analysis. The articles are almost identical to the originally submitted or published articles², differences are mainly due to uniform the format. Table 1-1 provides an overview of the studies in this dissertation.

² Except for the fifth Chapter.

Chapter	Research objective	Theoretical Perspective	Approach	Methodology
1. Introduction and conclusions:	introduction to the relevance of social impact measurement, the research domain, and the different chapters;			
2. CSR as strategic activity: value creation, integration and redistribution	To conceptualize the strategic potential of social impact. To this end, we address the questions of how the impact of business activities for a firm, society and ecosystems can be defined and how the impact of activities of the firm can be measured.	Sustainability Strategic management Innovation theory Stakeholder theory Global commodity chains Triple P performance	Conceptual	Literature review Case reviews
3. Talk the Walk: measuring the impact of corporate philanthropy	To explore whether or not firms measure the impact of corporate philanthropy along four dimensions – business, social, reputational or other. Next to this potential drivers for measuring impact are explored.	Sustainability Strategic philanthropy Performance measurement	Explorative Descriptive	Logistic regression analysis
4. Social Impact Measurement: classification of methods	To provide an overview of existing social impact definitions and social impact measurement methods. In this chapter the main differences between the methods are analysed and the characteristics of the methods are defined. Based on this information a classification of methods is developed.	Management Accounting Performance measurement	Descriptive Conceptual	Literature review Classification of methods
5. Measuring Social Impact: A case study at the Netherlands Heart Foundation	To develop and test an impact measurement method based on an empirical case study.	Impact measurement Theory of change	Method development Application	In-depth interviews Literature review Case study Cost-benefit analysis
6. Summary of the main findings and overall conclusions;	limitations of the research; directions for future research			

Table 1-1: Overview of the studies in this dissertation

Chapter 2

CSR as a strategic activity: value creation, redistribution, and integration

Abstract

In recent years Corporate Social Responsibility (CSR) has become increasingly important as the concept which frames the business contribution to sustainability. CSR has potential to become a strategic activity adding value on different dimensions - business, society and ecosystems - if two conditions are met. The first condition for strategic CSR is that CSR needs to become integrated with the strategy of the firm. The second condition for strategic CSR is to measure and monitor these new or additional values and to incorporate those new values into management decisions. We distinguish three typologies in which CSR may provide value to a firm, society, and ecosystems; value creation, value integration, and value redistribution. Building on this distinction, we explore the consequences for measuring the impact of CSR activities. We conclude with a discussion on the implications, limitations and suggestions for further research.

This chapter is based upon:

Maas, K.E.H., Boons, F. (2009). CSR as a strategic activity: value creation, integration and redistribution, in *“Innovative CSR”* eds. C. Louche, S.O. Idowu, W.L. Filho, Greenleaf Publishing, UK (*accepted, to be published in Spring 2010*)

2.1 Introduction

In recent years Corporate Social Responsibility (CSR) has become increasingly important as the concept which frames the business contribution to sustainable development (Commission of the European Communities, 2002). Building on generic definitions of sustainable development (WCED, 1987) it denotes a situation in which firms combine their economic goals with taking responsibility for their impact on eco-systems and human beings.

CSR has received a lot of attention from researchers and practitioners. In both fields we find advocates as well as critics. The latter believe CSR is about enlightened self-interest, PR and green washing and will not provide any value for society (Keim, 1978; Frankental, 2001; Margolis & Walsh, 2003; Matten et al., 2003) and perhaps not even for businesses (Friedman, 1970; Bragdon & Marlin, 1972; Vance, 1975). Advocates of CSR believe that CSR will provide value for business, society, and ecosystems, and is a source of innovation (Freeman, 1984; Hart & Milstein, 2003; Husted & Salazar, 2006; Porter & Kramer, 2006). These mixed qualifications are at least partially a consequence of the fact that a wide range of activities are subsumed under the umbrella term of CSR, ranging from philanthropy to CSR-reporting and from pollution prevention to sustainable purchasing.

In our view, CSR has potential to become a strategic activity adding value on different dimensions - business, society and ecosystems - if two conditions are met. The first condition for strategic CSR is that CSR needs to become integrated with the strategy of the firm. Strategy denotes the deliberate choice of activities that enables organisations to meet their objectives (Porter, 1996). As long as CSR activities are “bolt-on”, companies engage in socially beneficial spot-initiatives and extra activities which are disconnected from their core business operations (Wolff & Barth, 2005). Examples of this are financial or material donations, and sponsoring or volunteering activities of employees. “Built-in” CSR constitutes an integral part of business strategy and operations (Grayson & Hodges, 2004). This includes efforts to integrate economic, environmental, and social values into business processes, make production processes more sustainable and to improve

the environmental and social properties of the products, services or goods, either by improving existing products or by creating new products.

The second condition for strategic CSR is to have the means to measure and monitor these new or additional values. The reason for this is twofold. On the one hand, given the public interest in CSR, CSR is closely related to transparency, accountability and legitimacy and requests validation. On the other hand, if CSR is to become a strategic activity, the firm itself will have a need to monitor the impact of its activities. Strategic CSR urges firms to assess their value added (or destroyed) across ecological, social and economic dimensions, and to incorporate those impacts into management decisions.

Thus, in order to provide insight into the strategic potential of CSR two questions need to be answered:

- How can the value of business activities for a firm, society and ecosystems be defined?
- How can the contribution of activities of the firm to such value be measured?

The answer to the first question is difficult as ‘value’ eventually is a judgment made by individuals and communities: there is no objective way of defining it. For this reason, we will draw on literature from various sources to explore what is actually meant by ‘providing value’. The answer to the second question will build on this. Interestingly, it will be shown that current practice tends to focus on measuring a limited part of the value that is generated by CSR. Management scholars have focused mainly on the financial gains for the firm. In practice, management and reporting standards such as ISO 14000 and GRI³ assess CSR procedures rather than performance in terms of impacts upon society and ecosystems.

In this chapter we propose an approach for assessing the strategic potential of CSR, consisting of two parts. First, based on distinct bodies of literature, we distinguish three typologies in which strategic CSR may provide value to a firm,

³ Global Reporting Initiative

society, and ecosystems. These are illustrated by examples. Building on this distinction, we explore the consequences for measuring the impact of CSR activities.

2.2 Defining the value of firm activities

Before we research the question of how value can be created through strategic CSR we will explore how the concept of value creation is framed in strategy management literature. The primary pursuit of firms is to create and maintain value (Conner, 1991). How to create and appropriate⁴ value are central concepts in the (strategic) management and organizational literature (Lepak et al., 2007; Verwaal et al., 2009). However, what actually constitutes value is often left unaddressed in these theories.

Strategic management theories explore the question why one strategy is more successful in creating and maintaining value than another, given product, firm, and industry characteristics. According to Williamson (1999) strategic management theories boil down to two general types: (1) competence-based theories and (2) governance-based theories. Competence-based theories – including (1a) evolutionary economics and (1b) the resource-based view - focus on value creation by explaining the emergence and sustainability of economic rents (Barney, 1991; Conner, 1991; Barney et al., 2001). Porter (1980) and Hall (1980) argued both that companies have to choose between competition either on the basis of low costs or by differentiating products through quality and performance characteristics. Governance-based theories - including (2a) agency theory, (2b) transaction-cost economics, and (2c) property rights theory - mainly focus on value appropriation by explaining the existence and boundaries of economic institutions, such as firms, and employment relations (Williamson, 1985, 1999; Makadok, 2003). In both cases, value is – implicitly – defined in terms of immediate or future financial gains for firm owners.

⁴ Value appropriation refers to the distribution of the value created (Klein, 2008). Value appropriation is in literature labeled variously as value capture, allocation, realization, dispersion or distribution (Priem, 2007)

Financial profit remains an important standard for optimal functioning in the private sector (Simon & March, 1993) and it is more or less accepted that the main target for for-profit firms is to maximize, in the long run, the wealth of the shareholders of firms (Friedman, 1970; Jensen, 1998). From this perspective, CSR is received with great skepticism as a zero-sum game where the impact on companies mainly adds costs and limits the freedom of firms through additional regulatory demands (Haigh & Jones, 2006).

This view was already challenged in the 1970s in a public and academic debate about the social responsibility of business (Ackerman, 1975; Vink, 1986). With the rise of the concept of CSR this debate has been revitalized. Firms adopting CSR take actions that are intended to further social good and which are beyond their economic interest and what is required by law (McWilliams & Siegel, 2001).

The perspective of value as financial profit is also challenged by insights from economic sociologists. They have shown that economic value is not an objective fact, but rather the result of judgments of individual consumers, producers, and other societal actors (e.g. financial institutions, government, environmental and social groups). Cars can be valued for their speed, range, reliability, fuel efficiency, comfort, or as a signifier of social status. Depending on what value is dominant, financial profits are accrued based on this value. The measurement of economic value has been institutionalized in accounting practices (Callon, 1998). This insight builds upon the sociological perspective of social constructivism which holds that actors base their decisions and actions not on an objective reality, but rather on their beliefs and norms about that reality (Berger & Luckman, 1966). Understanding economic activities, according to this perspective is thus only possible if we analyze the beliefs and norms that guide economic actors.

Given the socially constructed nature of value it is not possible to provide specific definitions: these emerge in the context of interactions among economic actors and those that seek to influence them. Together they enact the specific value provided for the firm, society, and ecosystems. It is possible to reflect on different ways in which such value is constructed. We draw from literature on innovation, stakeholder theory, and global commodity chains.

2.2.1 New value creation

Firms derive profit from value-adding activities. If such activities are performed more efficiently, the value-added increases. In addition to such efficiency improvements, firms may develop product innovations. Hereby new value is created: the firm develops a new object, service, or activity which is perceived as valuable by a social group. This may be the creation of a new market, or the development of a new product. CSR could function as a value added activity. Such innovations usually require collaborations with other firms, knowledge institutes, and governments, especially when they are aimed to reduce the ecological and social impact of the firm or be more sustainable than the product that is replaced (Weber & Hemmelskamp, 2005). Such innovations may be considered as the core of a strategic approach to CSR because they move the firm and its core activities towards a redefined balance between economic revenues for the firm, reduced impact on ecosystems and improved value for society. When product innovations are more systemic (Prencipe, 2003), such innovations often require a system approach such as transition management (Loorbach, 2008). For example, moving from the internal combustion engine towards electric or fuel cell vehicles requires not only innovations in car technology and design, but also in the supporting infrastructure and servicing. In addition, such systemic innovations replace to some extent existing firms, a process referred to by Schumpeter as ‘creative destruction’ (Schumpeter, 1942). CSR as new value creation is thus a process of collaborative innovation with winners and losers. The key characteristic is that at the level of the firm, but often also at the level of the larger production and consumption system, a new balance is struck between economic, ecological, and social value.

A second example of CSR as new value creation is the rising trend of firms developing strategies targeting the so-called Bottom-of-the-Pyramid (BoP). (Davidson, 2009). These firms distinguish themselves in that they seek to create new markets involving customers, employees, suppliers, and/or distributors at the Bottom of the Pyramid, which have an average daily purchasing power of \$ 2 or less (Prahalad, 2005). It is argued that these initiatives can lead to profitable businesses and economic development for people living at the bottom-of-the-

pyramid as well as the multinational companies that serve them. We describe two examples where people at the BoP fulfil different roles.⁵ In the first case, increased access to affordable life-saving medicines for South Africans, the people at the BoP are the consumers. In the second case, using straw for district heating, the people at the BoP are the suppliers.

Aspen Pharmacare

Five and half million South Africans are infected with HIV/AIDS, and more than 837,000 individuals urgently require access to life-prolonging antiretroviral medicines (ARVs). According to the World Health Organisation in 2004 only an estimated 21 percent of people living with HIV had access to the needed treatment in public clinics and hospitals. The founder of Aspen Pharmacare translated the need to supply South Africans with the essential medicines required for the treatment of life-threatening diseases such as HIV/AIDS, tuberculosis and malaria, into a business opportunity. By developing a pharmaceutical manufacturer capable of supplying the South African market with brand name, generic and over-the-counter medicines at affordable prices a BoP firm was created. Within 10 years, Aspen Pharmacare has become one of the largest drug companies in South Africa. Initially worth US\$7 million, Aspen has grown at a rate of 40% per year. By building the largest manufacturing plant in the country, Aspen Pharmacare is now in a position to supply South Africa's national anti-retroviral treatment programme with approximately 60 percent of its current requirements. In 2005, Aspen has annual revenues of US\$467 million and net profits of US\$75 million. Aspen's efforts provide increased access to affordable life-saving medicines for South Africans.

PEC Luban

A second example shows how people at the BoP can act as suppliers. PEC Luban, a company providing district heating in the town of Luban, Poland, began using straw for heat generation in the late 1990s. This allowed for significant reductions of harmful emissions from the combustion of traditional fuels (mostly coal). The

⁵ Both cases are based on information from the "Growing Inclusive Markets" initiative of UNDP; <http://www.growinginclusivemarkets.org>

use of straw also created demand for straw from local farmers—straw is a locally produced and renewable source of biomass energy. The biomass-fired boilers were constructed as an upgrade and extension to the existing coal-fired boiler plant. The Luban facility is Poland's largest boiler plant fired with biomass, offering a good example of overcoming technical challenges to meet energy needs in a sustainable way and avoiding dependency on polluting sources of energy that also contribute to climate change. PEC Luban was able in the last years to reduce its use of coal by 2.500 tons per year. The use of waste straw instead of coal has lowered CO₂ emissions by 2.000 tons per year, SO₂ emissions by 6.000 kilograms per year, and NO₂ emissions by 2.500 kilograms per year. The wide-scale use of biomass energy is likely to stimulate the development of rural areas and agriculture and to increase employment and incomes for smaller farmers. In addition, the sustainable use of biomass energy sources helps to manage the local environment. Previously most of the surplus straw was burned in the fields, which constituted a serious health hazard for the population and caused environmental damage. One of the main obstacles was that the farmers lacked knowledge about the benefits of selling straw for energy purposes and about how to comply with strict and costly technical requirements. This example shows how the development of new products can benefit both the firm as well as the local communities.

2.2.2 Value integration

A second type of CSR concerns the integration of stakeholder concerns into the firm's strategy. Stakeholders are those individuals and organisations that are influenced by, or are able to influence, the activities of a firm (Freeman, 1984). The concept of CSR builds on the idea that the interest of all stakeholders should not be sacrificed to the interest of the shareholders, and that it is a firm's task to create value with and for its stakeholders. The purpose of the organization is thus to create value for its stakeholders (or the interests they represent, such as those of ecosystems), bringing into focus different targets, including earnings for owners, satisfaction for employees, product benefits for customers, and taxes for society (Post et al., 2002). The mutual dependence of firms and society implies that any business decision, as well as any policy decision, influences society and other stakeholders as well as businesses (Emerson, 2003). Therefore, the main challenge

is to maximize value in win-win situations or to optimize value in win-lose or lose-win situations. This is one of the main theoretical and practical problems around CSR as a strategic activity. Different stakeholders may have different views of what is valuable because of differing knowledge, goals, and context conditions. Stakeholders can even have competing interests and viewpoints of what is valuable (Lepak et al., 2007, p191).

Value integration implies the effort of a firm to integrate values espoused by stakeholders into its activities and organizational routines that were previously disregarded. As a result, firms no longer strive for financial benefits in isolation but adopt a broader view that includes environmental and social values. The voice of the stakeholder is inserted into the business processes through interaction with external parties such as suppliers, customers, communities, governmental and non-governmental organisations and the media. Incorporation of stakeholder views may result in optimization of existing products and processes by, for example pollution prevention or product stewardship. Pollution prevention comprises activities that reduce the amount of pollution generated by a process or product. This can be achieved either by reducing the resource or inputs, by reducing emissions and waste during the production process. Whereas pollution prevention focuses on internal operations, product stewardship extends beyond organizational boundaries to include the entire product life cycle, from raw material access through production processes, to product use and disposal of used products (Hart & Milstein, 2003).

*Residential Advisory Board*⁶

An example of CSR as value integration is the initiative of the Dutch regional platform for nuisance and safety to set up a Residential Advisory Board (RAB) in Pernis, Rotterdam. Shell⁷ Pernis, a joint oil refinery/chemicals manufacturing site,

⁶ The case description is based on information from the Shell Pernis website (www.shell.com/home/content/nld/aboutshell/shell_businesses/pernis/) and on the model for a Residential Advisory Board published by the Shell Pernis Residential Advisory Board (2003)

⁷ Shell is a global group of energy and petrochemical companies, with 104.000 employees in more than 110 countries.

is the largest refinery in Europe. In the direct vicinity of the Shell Pernis refinery over 450.000 people live permanently in the local communities, leading to a large potential for nuisance or risk situations. In 1998 a Residential Advisory Board (RAB) was initiated. The RAB was designed as an organised form of stakeholder consultation with the local community. After a trial period of two years, the board was positively evaluated by the firm and by the local residents, and runs successfully for more than ten years now. The board includes representatives of the local community, Shell Pernis, and an independent facilitator, enabling local residents to discuss with the firm anything which may directly or indirectly affect them as neighbours of the firm. The main reason for initiating the RAB was that it could facilitate and support open and direct communication between the firm and the local residents which is in the interest of both the firm and the neighbours (Shell Pernis Residential Advisory Board, 2003). The RAB meets four times a year. The emphasis in these meetings is on environmental and social aspects like nuisance, environmental, health and safety aspects.

Within the RAB, agreements have been reached about reduction of large flaring and water pollution in the harbour area, as well as improved communication about nuisance. The RAB provides a means for such agreements, and is a way to show accountability towards the people living in the immediate area and for the quality of life in that area. Besides this, the RAB is a vehicle for Shell to be aware of the concerns of the local residents and their perceptions, and encourages Shell to incorporate those perceptions in their operations. Furthermore, feedback is obtained for the preparation of external communication material which helps to maintain or even improve Shells' image (Shell Pernis Residential Advisory Board, 2003). This example shows how stakeholder consultation can be used to identify stakeholder value and indicators to be measured, reported on and incorporated in strategic management decisions.

2.2.3 Value redistribution

A third type of strategic CSR activities can be drawn from the literature on global commodity chains. Such chains refer to the globally linked stages of a product's life cycle from the extraction of raw materials through production, consumption, to

recycling and waste disposal (Gereffi, 1999, 1999a). This approach focuses on the international dimension power and dependency relationships, often between developing and developed countries. Secondly, it addresses the issue of relative power in the chain, identifying lead firms that control crucial resources and generate most of the profits. Thirdly, it views mechanisms of coordination throughout the chain as a source of competitive advantage. Lead firms choose coordination mechanisms (varying from market transactions to network forms and hierarchical relationships) that allow them to achieve their goals. Finally, organisational learning is viewed as the central mechanism through which firms consolidate or improve their relative position towards other actors in the chain.

Based on the analysis of global commodity chains of food products, apparel, electronics, and the automobiles, two distinct types of commodity chains have been identified by Gereffi (2001). Producer driven commodity chains (automobiles, computers), are led by large transnational corporations that coordinate production and distribution into vertical networks. Buyer driven commodity chains (food products, apparel, toys) are led by large retailers, marketers and branded manufacturers that coordinate the development of decentralized production networks in developing countries based on trade rather than direct coordination.

The global commodity chain approach provides an analysis of what in debates about CSR is often construed as a social issue: the dependence of farmers and workers in developing countries on Western firms. Firms in consuming countries hold power over producers of commodities such as coffee and cacao, but also apparel and consumer electronics, and are thus able to appropriate most of the value-added. Moreover, Clift (2003) finds⁸ that such inequalities correlate with ecological impact, like in the commodity chains of mobile phones where producing countries face a low value appropriation with a disproportional high ecological impact.

⁸ see also Clift & Wright (2000)

Based on this analysis, the third type of strategic CSR takes the shape of value redistribution as relationships among commodity chains are altered to strike a more equal balance among economic actors in producing and consuming countries in terms of ecological, economic, and social value. Over the years, various initiatives have developed to forge such a change in relationships, of which Fair Trade programs are the most well known.

Coffee supply chain

A case of structural redistribution of value has occurred in the last decade in the supply chain of coffee. Before 1990, coffee producing countries operated under a relatively successful price agreement which was upheld by the International Coffee Organisation (ICO) (Bates, 1997). When this cartel collapsed, prices dropped dramatically, leaving many farmers in South American and African countries with almost no income. The social problems resulting from the collapse were an incentive to members of several Western countries to develop programs where coffee was bought from farmers at a price exceeding world market levels, and then sold to consumers that were willing to pay this extra price. Over time, such initiatives were institutionalized in an international standard organisation under the Fair Trade label. The main aim for the people involved in these programs was to redistribute value (in terms of monetary compensation) in the supply chain. The purpose was to establish links from coffee farmers to Western producers alongside the mainstream coffee supply chain. The principles behind this monetary value redistribution suggest that monetary improvement for farmers is a prerequisite for improving other qualities, including improved environmental performance.

After a period in which Fair Trade existed as a small market niche alongside the mainstream coffee chain, now also several roasting firms include products in their product line that carry the Fair Trade label, or a label that has similar purposes. In the Dutch market, a large retailer developed its own standard for its in-house brand, seeking to capture part of the market that Fair Trade initiatives were creating. More recently, the market leader in coffee products, Douwe Egberts, a Sara Lee subsidiary, has announced that it aims to have the major competing label of Fair Trade, Utz Certified, for its total product line no later than 2010.

During the beginning of 2008, this competition became manifest in a legal suit of Douwe Egberts against the Province of Groningen, a northern province of The Netherlands. This governmental body had formulated criteria for a new contract for coffee suppliers that could only be fulfilled by firms adhering to Fair Trade standards. Douwe Egberts fought these criteria, stating that this amounted to market distortion. The judge decided that the governmental agency had the freedom to set the criteria in this way. This example shows how value redistribution, in terms of monetary units, can be successful and lead to competition among firms. At least on the Dutch market, competition emerges among firms based on their definitions of social value as exemplified by the standards they adhere to.

2.3 Measurement

If CSR is to become a strategic activity, two conditions have to be met. The first condition for strategic CSR is the integration of CSR within the strategy of the firm, which can be distinguished in the three types outlined in the previous paragraphs. The second condition for firms is to measure and monitor not only their financial returns but also the value added (or destroyed) across the environmental and social dimension. Current practice tends to focus on measuring only a limited part of the value that is generated by CSR. Management scholars have focused mainly on performance measurement by solely measuring the financial gains for the firm. The question of what impact those corporate CSR actions has, not only on the bottom line but also on society and ecosystems, remains largely unexplored (Margolis & Walsh, 2003).

To be able to measure the impact of CSR on different dimensions, a shift is needed from output thinking focusing on a single dimensional firm perspective to impact thinking which also includes a societal perspective (see figure 2-1). Performance measurement, traditionally used to measure companies' efficiency, profit and competitive advantage, builds upon output thinking. Measuring output does not enable firms to assess their value added (or destroyed) across environmental, social and economic dimensions. This illustrates why new methods capable of measuring impact are needed.

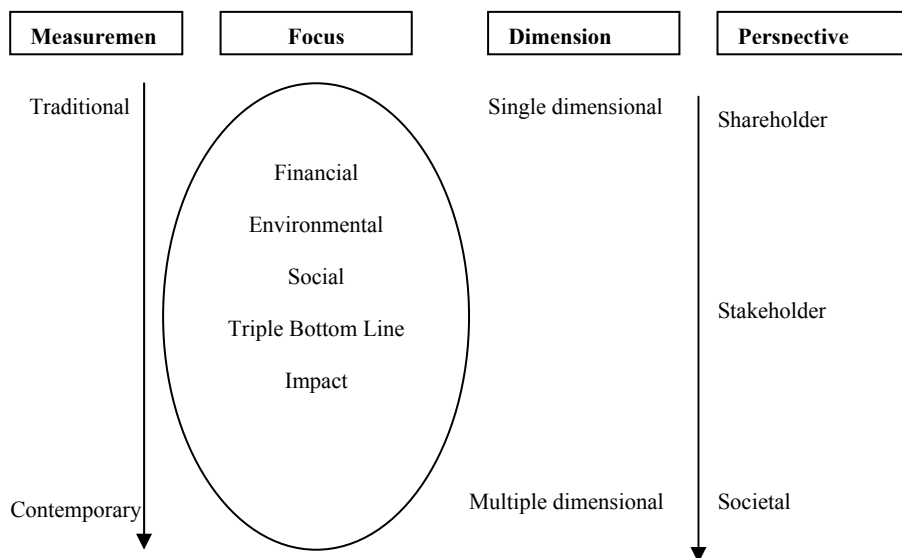


Figure 2-1: Developments over time of the focus in performance measurement.

In this chapter we use the definition of impact as developed by Clark, et al. (2004, p7): *By impact we mean the portion of the total outcome that happened as a result of the activity of an organisation, above and beyond what would have happened anyway.* This definition is based on the so called Impact Value Chain (see figure 2-2) and is developed to differentiate outputs from outcomes and impact.

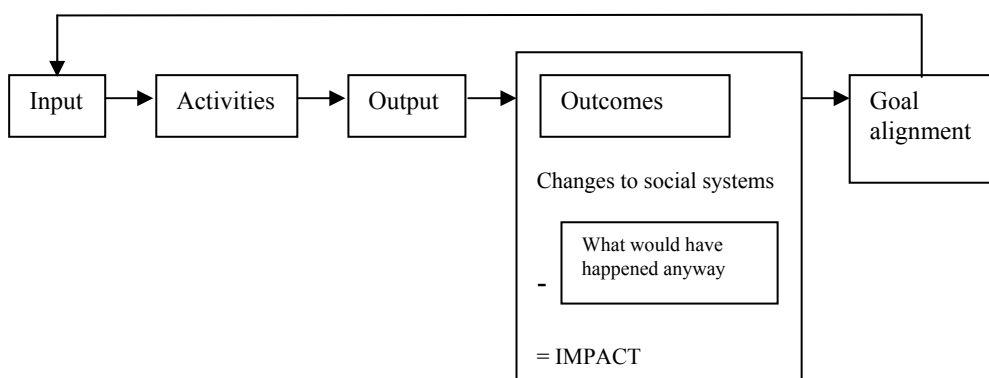


Figure 2-2: Impact value chain (adapted from Clark et al., 2004)

By doing this we borrow from evaluation theory that conceptualizes the idea that impact is different from output (Rossi & Freeman, 1993). While outputs and outcomes are related to the provider of the product, activity or service, impacts are associated with the user (Kolodinsky et al., 2006) and other stakeholders.

In business, generally accepted principles of accounting and an international legal infrastructure have been established over the years to help measure and report on financial impact. Life Cycle Assessment⁹ provides a framework and indicators for the measurement of ecological impacts. For social impact measurement, however, universalised standards do not yet exist. In result, social and ecological impacts are often not explicitly included in measurement, are even ignored, or treated as externalities. Moreover, the impact and the dimension of the impact (economic, environmental, and social) varies on a case by case basis depending on the CSR activity.

2.4 Different measurement for different purposes

Impact measurement is not an end in itself. Neither the act of measuring impact nor the resulting data accomplish anything itself; only when these measures are used they can accomplish something (Behn, 2003). Besides this, only if managers know what they want to do with the measurement results, they can select a collection of impact measures with the characteristics necessary to help them achieve these purposes (Maas, 2009). Managers should therefore begin by deciding on the managerial purposes to which impact measurement may contribute. Managers might want to answer questions from several perspectives, like the supply chain perspective, consumer perspective, firm perspective, societal perspective, and stakeholder perspective:

- How is value distributed in our supply chain?
- How do stakeholders value our company?
- How can we continue to improve our products and processes?

⁹ LCA is a "cradle-to-grave", from extraction of raw materials to end-of-life, approach used to evaluate or compare the overall ecological impacts of alternative products or processes.

- How can we create value?
- How can we increase our positive impact on different dimensions?
- How do shareholders value our company?

Depending on the CSR activity undertaken by the firm – value redistribution, value integration or new value creation - and the corresponding impact, a measurement approach should be selected. Measuring the impact of CSR can be difficult because any meaningful measurement needs a reference point in terms of accepted criteria.

In our typology of strategic CSR activities we distinguished three ways in which CSR may provide value to a firm, society and ecosystems. Each of these might require different impact measures. Impact measurement in the case of value redistribution might focus on the global commodity chain perspective and answer the question how impact, on different dimensions, is distributed in the supply chain and how this could be optimized in view of sustainable development. Impact measurement in case of value creation, through the development of new products or new markets, might focus on a financial shareholder perspective and a societal perspective and answer the question: ‘how can we increase positive impact on the different dimensions?’ Impact measurement in the case of value integration might focus on the stakeholder perspective and answer the question: ‘how do stakeholders see and value the firm?’ Although the explanation in the next paragraphs does provide insight in potential measurement approaches for the distinguished three ways in which CSR may provide value, measurement approaches will have to be selected based on a case by case basis. In Chapter 3 of this dissertation, a classification of existing measurement methods is provided.

2.4.1 Measuring value creation

Value creation for the firm through the development of new products or new markets or through Bottom of the Pyramid strategies are comparable with general innovation activities (Weber & Hemmelskamp, 2005). CSR as new value creation is a process of collaborative innovation. A characteristic of this process is that at

the level of the firm, but often also at a system level, a new balance is struck between economic, ecological, and social impact.

The difficulty of measuring the impact of new value creation is dependent on whether the innovation constitutes the departure from the existing technological paradigm, i.e. the current accepted frame of reference used by firms and knowledge institutes as basis for their search for new technologies (Dosi, 1982). When new value creation takes the shape of efficiency improvements of processes and products, impact can be measured by comparing the old with the new situation. For example, a TV-set that uses less energy during the consumption phase, or substituting a hazardous substance which results in less water pollution. However, it has been argued that sustainable development requires more fundamental innovations that require new technological paradigms, such as the shift from car-based mobility to alternative mobility modes. This also has consequences for behavioral patterns of consumers, for instance by working at home rather than at an office. Taken together, these shifts in activities are systematically too different to be compared with the old situation; as with scientific paradigms, the impacts are incommensurable (Kuhn, 1962). In the BoP examples, involving people at the bottom of the pyramid as consumers and producers might be measured in terms of their monetary income, but this fails to measure the social impact in terms of introducing new behavioral patterns.

Thus measuring new value creation is difficult especially when it involves a shift in technological paradigms. Besides this, new value creation by entering new markets or by launching new products could cause unforeseen external effects or rebound effects. The difficulty with such effects is the time frame in which they can occur. Only after market introduction value for all stakeholders can be defined in a meaningful way.

If companies want to include social and environmental impact next to the financial impact for the firm, they can use the so-called Social Return on Investment (SROI) method (Lingane & Olsen, 2004). SROI is a methodology for calculating social return on investment and was pioneered in by the Roberts Enterprise Development

Fund (REDF) in 1996. More recently the approach has been used to assess the multi-dimensional impacts of CSR activities.

2.4.2 Measuring value integration

Value integration implies the effort of a firm to integrate values espoused by stakeholders into its activities and organizational routines that were previously disregarded. Problems, solutions and impacts, whether intended or unintended, are often the subject of ambiguity, uncertainty and disputes (Roome, 2001). Measuring such impacts has to be a collective activity; the firm cannot measure impacts without taking the perspective of the stakeholder into account. Impacts have to be selected by the firm and its stakeholders. To be valid, they need the kind of public acceptance which can only be achieved through well-structured participatory decision processes (Clift, 2003), because value is in the eye of the stakeholder. For each stakeholder, it is important to have insight into the way in which the, for them relevant impacts are addressed by the firm. Therefore, the firm and its stakeholders have to interact and continuously learn, take action and change. This process can be viewed as multi-party, learning-action network that spans business organisations and stakeholders in society (Clarke & Roome, 1999).

Indicators for value measurement can be selected directly through stakeholder consultation, as in the case of Shells' Residential Advisory Board, building learning-action networks or indirectly by using indicators provided by different guidelines, frameworks, standards and rating schemes provide information on potential useful indicators¹⁰. These guidelines, like the guideline from the Global Reporting Initiative (GRI, 2006), are developed based on a multi-stakeholder consensus-seeking approach which is a valuable way to produce indicators that appropriately responds to stakeholders' needs. The different impact can be measured in their own metric or can be integrated into one 'grade'. The relevancy of aggregating across the dimensions, for example by expressing environmental

¹⁰ Some examples are the Social Accountability 8000 standard (SA8000), International Labour Organisation (ILO convention), World Resource Institute (WRI indicators), OECD guidelines, rating schemes from DJSI and FTSE4GOOD, Global Reporting Initiative (GRI G3).

impacts in monetary terms, depends upon the interests and information need of the stakeholders and the firm.

2.4.3 Measuring value redistribution

Value redistribution includes the effort of a firm to change the distribution of impact over the system actors. Measuring value redistribution determines an accepted definition of what is valuable. Often redistribution efforts focus on redistributing the financial impact. A requisite to measure if the impact of redistribution is positive, this would in this case mean that producers and workers in the supply chain obtain a better price for their work or products, it should be known how impact is distributed in the global commodity chain. In addition to measuring the distribution of impact, it should be assessed how much of the value is obtained by the producers and workers in the value chain. This can be done by looking at the prices paid or obtained in every step in the supply chain and make a comparison of the initial situation and the situation after the redistribution effort. Again, this is problematic as changes in practices of actors, constituting social impact, are difficult to measure. In the case of organic coffee, increased income for farmers is combined with an increased demand for labour, as organic coffee farmer requires much more intensive farming practices throughout the year. This has as a consequence that people growing coffee have to focus on this as their main activity where as previously they often grew coffee as one of several activities. In addition, harvesting requires the input of additional labour, for which people from the community are hired. Thus, organic coffee farming involves a change in practices and monetary benefits for other people beside the principal farmer, who becomes more like a Western entrepreneur (Jaffee, 2007). Such impacts are difficult to capture by measuring the monetary part of redistribution of value.

Previous research used an extended version of the Overall Business Impact Assessment (OBIA), originally developed by Unilever (Taylor & Postlethwaite, 1996), to analyse the environmental and economic impact of supply chains (Jackson & Clift, 1998; Clift & Wright, 2000). They observed that the primary resource industries, often located in developing countries, incur disproportionately

high environmental impact but receive disproportionately low economic benefit. Clift (2003) concludes that in view of sustainability the ratio between environmental and financial impact along the global commodity chain should be unified. Results from these measurement can be used to improve a more equal distribution of economic and environmental impact along supply chains.

2.5 Conclusion

CSR has the potential to become value adding strategic CSR, adding value on different dimensions – business, society and ecosystems - when two conditions are met. The first condition is that CSR needs to become integrated with the strategy of the firm through value creation, value integration and value redistribution. Whenever a firm engages in activities of one or more of these types, it connects CSR to its core activities, making it more than a ‘built-on’ exercise. The second condition is to measure and monitor it’s impact across environmental, social and economic dimensions and to incorporate those impacts into management decisions.

Measuring the impact of CSR is difficult because any meaningful measurement needs a reference point in terms of accepted criteria. Criteria have to be selected by taking the perspectives of the stakeholders into account. However, current developments in measurement instruments focus mainly on output measurement. Emphasis is put on measuring the pay-back results of CSR initiatives for companies instead of measuring impact along the different dimensions. A shift is needed from output thinking to impact thinking. New measurement methods capable of measuring impact are needed. Chapter 3 provides an overview of existing impact measurement methods and looks in more detail at these existing impact measurement methods.

Depending on the CSR activity undertaken by the firm – value redistribution, value integration or new value creation - and the corresponding impact, a measurement approach should be selected. Managers should begin by deciding on the managerial purposes to which impact measurement may contribute. Measuring the impact of value redistribution is the easiest in terms of criteria. As

redistribution builds on an accepted definition of what is valuable, CSR initiatives that fall into this category can look at the relative equality of distribution of this value across actors in the value system. But as redistribution can also involve changes in social practices, it mingles with the creation of new value, complicating the measurement of impact. Value integration brings more sets of values to the ones previously espoused by the firm, and involves stakeholders into the strategic process of creating these values. In such instances of CSR, measurement may best proceed through an assessment as part of the stakeholder dialogue. For this to work, scores on different values do not necessarily need to be integrated into one 'grade'; for each of the stakeholders, it is important to have insight into the way in which their value is addressed by the firm. Value creation is the most difficult to measure. It involves the creation of new products and/or services and is embedded in a process where initially the value for the firm is not clear while it is uncertain if consumers, governmental agencies, and other stakeholders will accept the new product or service. Only after market introduction it is possible to define value in any meaningful way.

There is general agreement in the literature that organisations until now have done little work in evaluating the impact of their CSR activities, specifically on a social and ecosystem level (Margolis et al., 2003; Clark et al., 2004). There is also consensus about organisations are beginning to express greater interest in their impact (Young, 2002). To find out whether firms do or do not measure their impact, actual behaviour of firms related to impact measurement is analysed in Chapter 4. Finally, in Chapter 5 an impact measurement is developed and tested based on an empirical case study.

Chapter 3

Social Impact Measurement: classification of methods

Abstract

This paper analyses contemporary social impact measurement methods. These methods are developed in line with the changing needs for management information as a result of increased interest in Corporate Social Responsibility (CSR) and impact measurement. Social impact measurement methods differ among others in *perspective*, *purpose* and *approach*. These differences make it hard for an organisation to decide what would be a relevant method for them to use. In this paper the development over all times in performance measurement and value thinking is shortly described. An overview of existing definitions of social impact is provided and a list of social impact measurement methods is developed. The main differences of the methods are analysed and the characteristics of the methods are defined. The purpose of this classification is to help managers to choose between the multitude of available social impact measurement methods. The paper concludes with a brief discussion on theoretical and practical implications.

This chapter is based upon:

Maas, K.E.H., (2009). Social impact measurement: classification of methods, submitted as book chapter in “*Environmental Management Accounting, Supply Chain Management, and Corporate Responsibility Accounting*”, eds. R. Burrit, et al., Springer Publishers, USA (under review, second round)

3.1 Introduction

In the last decades accountability, legitimacy and transparency have become major issues for all sectors. All around the world companies are increasingly confronted with rising public expectations and stakeholder criticism. In response to these increased expectations and criticisms, many different measurement and reporting tools have been developed. This paper analyses and classifies contemporary measurement methods developed to measure social impact. In this paper we use the term social impact for the impact of an organisation on society on the economic, environmental and social dimension. These methods are developed in line with the changing needs for management information as a result of increased interest in Corporate Social Responsibility (CSR) and social impact measurement.

When it comes to the role that organisations can play to help to achieve sustainable development, terminology and definitions become obscure; terms as CSR, community involvement, corporate responsiveness, corporate citizenship, corporate social performance, and many others are used (Matten et al., 2003; de Bakker et al., 2005; Maas & Bouma, 2005,). Despite the random used terms several commonalities can be identified. Common features of many of the definitions are the interdependency of organisations and society and a role for the triple P (People, Profit, Planet). Another common feature is the proviso that firm activities can be considered as CSR when the firm undertakes “*action that appears to further some social good, beyond the interest of the firm and that which is required by law*” (McWilliams & Siegel, 2001, p. 117).

In this paper, our starting point is a situation where organisations not only strive for economic gains but adopt a broader view and take responsibility for their impact upon the society in which they operate. This situation urges organisations not to focus on economic and financial value in an isolated way, but to assess their impact upon the society across the environmental, social and financial dimension. Ideally, those impacts should be incorporated into management decisions to enable organisations to actually manage their impact. Such impacts, social and environmental, are often not expressed by the market, do not have a market value

and are therefore often ignored by companies (Elkington, 1999; Schaltegger & Burritt, 2000; Lamberton, 2005). In economic theory those effects are known as external effects, mainly studied by welfare economics.

3.2 Social impact and welfare economics¹¹

The central object in welfare economics is the collective or social welfare, i.e. the fulfilment of all individuals needs using scarce resources. Social welfare is a compilation of welfare of all individuals in society and takes a macro economic perspective. The main challenge is to aggregate individual welfare into social (macro) welfare, as individual welfare depends strongly on perception and context specific factors (time, place, living environment etc.) and is therefore not comparable without stringent presuppositions.

Although the attempt to measure welfare was developed already by Bentham in 1780 (Ekelund & Hébert, 1990), Pigou (1870 – 1959) was one of the first scientists who explicitly discussed social welfare. Pigou used three concepts of welfare (Pigou, 1920, 1950). The first concept describes *social welfare* as the state of consciousness and their relations and can be well compared with the currently more commonly used term well-being (which is formed by material as well as non-material goods). The second concept, *economic welfare*, is that part of social welfare that can be brought directly or indirectly into relation with the measuring-rod of money (Pigou 1950, p. 11). A further limitation of the concept of welfare, is called the ‘*national dividend*’ or ‘*national income*’, and is defined as the objective counterpart of economic welfare. The boundary between ‘social welfare’ and ‘economic welfare’ remains vague and is formed by the efforts one might put into valuing effects into monetary terms. In further analysis, Pigou limits himself by using the concept of ‘economic welfare’ while ‘social welfare’ clearly formed the basis for his theory and provides thereby a norm for valuation (Schreuder, 1981). Assuming the existence of an externality¹² such as pollution of air, the marginal

¹¹ Adapted from Maas & Bouma, 2005.

¹² Externalities are either costs or benefits for people other than decision-makers. For an overview of the discussion of externalities, see Ayres & Kneese (1969), Mishan (1971), Mishan & Quah (2007).

social costs of such productions exceeds the marginal private costs of the polluting firm (by an amount equal to the marginal pollution damage). As Pigou focuses in his theory on 'economic welfare', this directly implies that he only takes into account those externalities that can be valued in monetary terms (Ekelund & Hébert, 1990).

Pareto's (1848 – 1929) welfare theory builds upon maximising behaviour of individuals and on the idea that a freely competitive system will lead to an optimum of social welfare. Opposed to Pigou, Pareto assumes that externalities do not exist in the free market and there is no need for governmental interference in the market. Pareto's theory starts from the idea that all human beings (acting as *homo economicus*) optimise their own welfare by trading scarce goods in a perfect free market. There will be an optimum if no economic arrangement can make one or more people better off without making anyone worse off, in that case one speaks of a Pareto-efficient situation (van Damme, 2000).

In the welfare theory of Bergson the valuation of the different components of the welfare equitation is based on a multi-criteria analysis in which the (positive or negative) coefficients decide the value of the different components. The criteria are chosen by the leader (dictator or democratically chosen government) of a nation. Social welfare therefore, depends on the way political goals are attained, regardless whether all individual citizen support those goals. The Bergsonian theory is frequently used for the assessment and valuation of environmental external effects, whereas politicians decide on the aimed quality of environment (Dietz, 1994). Bergsons' theory uses the widest definition of welfare theory and comprises more or less both Pigou's as Pareto's ideas. This is the strength of this theory but simultaneously its weakness, as the formula for welfare should be reformulated for every objective, resulting in a non-operative welfare function (Schreuder, 1981).

Coase (1960) finally explains the problem of social costs and introduces the question of indirect and unintended effects. Coase discusses different social arrangements that could potentially solve the question of negative impacts on society which result a social cost. He concludes that one should focus on the total

effects of an organisation, including indirect and unintended effects. How to measure these total effects however, is not explained by Coase.

Already in 1981, Schreuder concluded that welfare economics does not provide an ultimate solution for the valuation of CSR effects. A potential contribution of welfare economics to the measurement of impact of organisations on society is that it resulted in discussions on how to measure welfare, including the externalities of the behaviour of firms. Nevertheless, the discussions focus strongly on economic rationality, externalities that can be measured in monetary values and did not lead to operational functions.

3.3 From a single towards a multiple bottom line

The movement towards social accountability is not sector specific (Clark et al., 2004). In corporate boardrooms managers are increasingly being asked to describe, for example, their impacts on the environment or the local economy. Similarly, in non-profit or governmental organisations there is an increasing interest in more tangible accountability for the social impact created for each invested or granted Euro. Traditional accounting and management standards do not usually consider environmental or social questions. Social impacts are often not explicitly included in valuation studies or are even ignored. Existing research puts much emphasis on the business case or the pay-back results of social initiatives for companies, and not on the impact of social initiatives on society (Fry et al., 1982; Margolis & Walsh, 2003; Juholin, 2004; Aguilera et al., 2007).

Traditionally, it was believed that value is either economic (created by for-profit companies) or social (created by non-profit or nongovernmental organisations). For non-profit organisations it was already more or less commonly accepted that, in order to survive, they have to provide economic and non-economic benefit to the communities they serve (Weisbrod, 1988; Ben-Ner & Hoomissen, 1992). More recently, the number of mainstream corporate CEOs discussing the social and environmental performance of their firms as a strategy for increasing the total value of their companies increased significantly (Emerson, 2003).

Already in 1999, Elkington predicted the evolution of win-win thinking in business. Strongly related to this evolution was the development of the triple bottom line (TBL) concept. The TBL concept focuses on value creation across the three dimensions of sustainability; the economic-, social- and environmental dimension. Although this concept has been widely used, the interpretation of value creation differs among users; some interpret TBL as a zero-sum game while others interpret TBL as an optimisation game of blended value. The idea behind the blended value is that *all organisations, whether for-profit or not, create value that consist of economic, social and environmental value components; and this value is itself non-divisible and, therefore, a blend of these three elements* (Ann et al., 1999; Elkington et al., 2006). Consequently, the challenge for any organisation, non-profit, nongovernmental or for-profit, is to optimize performance on several dimensions instead of maximizing performance against any single dimension.

The development towards a multiple dimension proposition was initiated and stimulated by a range of external pressures from stakeholders ranging from governmental organisation, environmental organisations and other social organisations, consumers, and rating agencies. At the business level the focus has changed over the years from defensive functions such as legal affairs through environmental managers and marketing all the way up to CEO's, boards and CFO's (figure 3-1).



Figure 3-1: Internal involvement in the corporate goals (based on Elkington et al., 2006)

Although the internal involvement of top management, boards and investors increased and moved the traditional bottom line thinking toward multiple dimension value thinking, one must keep in mind that whatever proponents of CSR and sustainability may wish for, for-profit companies are not in business to

save the world. There are important limits to the market for virtue (Vogel, 2005). On the other hand, in today's competitive business environment an increasing number of for-profit companies realise that creating alignment between CSR activities and their core business will not only create social value but will also support the commercial interest of the company. This can be either by stakeholder satisfaction resulting directly in increased sales or indirectly through a positive influence on the image and reputation of the company.

A first step in the process towards optimising value on multiple dimensions is to measure impact. For companies, but also for their investors, relatively standardized measurement and reporting guidelines have been developed that provide clear insight into the financial efficiency of a company. Measuring the impact upon the society, however, remains a much greater challenge. There are many reasons why these impacts have not been studied systematically. First, they are often relatively difficult to measure and quantify. Second, organisations can have a positive or negative impact upon the society on several dimensions: environmental dimension, economic dimension and social dimension. Next to this, impact includes short term as well as long term effects. Third, many components can contribute to economic, environmental and social impact. In result it is often hard to link activities and impact implicating attribution and causality questions. Currently, no widely accepted scientific approach to attribution and causality questions in impact measurement exist. Fourth, the definition of impact is not clear.

3.4 Definitions of social impact

The different terms used by different researchers from business and society studies, management accounting, strategic management, and practitioners are confusing. The main difference is found between the entrepreneurs' and social scientists' definitions of the words "impact", "output", "effect", "outcome" and "social return". Many different definitions of (social) impact or related terms can be found in literature (see table 3-1) (Latané, 1981; Burdge & Vancley, 1996). The term (social) impact is often replaced by terms such as "social value creation" (Emerson et al. 2000) and "social return" (Clark et al., 2004). Definitions related

to the control, assessment and management of (social) impact are also provided by literature in the field of business and society and management (Freudenburg, 1986; Gentile, 2000).

Term	Definition
Social impact (Burdge & Vancley, 1996)	By social impacts we mean the consequences to human populations of any public or private actions that alter the ways in which people live, work, play, relate to one another, organize to meet their needs and generally act as a member of society. The term also includes cultural impacts involving changes to the norms, values, and beliefs that guide and rationalize their cognition of themselves and society.
Social impact (Latané, 1981)	By social impact, we mean any of the great variety of changes in physiological states and subjective feelings, motives and emotions, cognitions and beliefs, values and behaviour, that occur in an individual, human or animal, as a result of the real, implied, or imagined presence or actions of other individuals.
Impact (Clark et al., 2004)	By impact we mean the portion of the total outcome that happened as a result of the activity of the venture, above and beyond what would have happened anyway.
Social Value (Emerson et al., 2000)	Social value is created when resources, inputs, processes or policies are combined to generate improvements in the lives of individuals or society as a whole.
Social Impact Assessment (Freudenburg, 1986)	Social impact assessment refers to assessing (as in measuring or summarizing) a broad range of impacts (or effects, or consequences) that are likely to be experienced by an equally broad range of social groups as a result of some course of action.
Social Impact Management (Gentile, 2000)	Social impact management is the field of inquiry at the intersection of business practice and wider societal concerns that reflects and respects the complex interdependency between these two realities.
Social Impact Assessment (IAIA ¹³ by Wikipedia 2009)	Social impact assessment includes the processes of analyzing, monitoring and managing the intended and unintended social consequences, both positive and negative, of planned interventions (policies, programs, plans, projects) and any social change processes invoked by those interventions. Its primary purpose is to bring about a more sustainable and equitable biophysical and human environment

Table 3-1: Definitions of (social) impact and related terms

In our paper we build on the so called Impact Value Chain (see figure 3-2) and is used to differentiate outputs from outcomes and impact. By doing this we conceptualizes the idea that impacts are different from outputs. While outputs and

¹³ International Association for Impact Assessment, www.iaia.org .

outcomes are related to the provider of the product, activity or service, impacts are associated with the user (Kolodinsky et al., 2006).

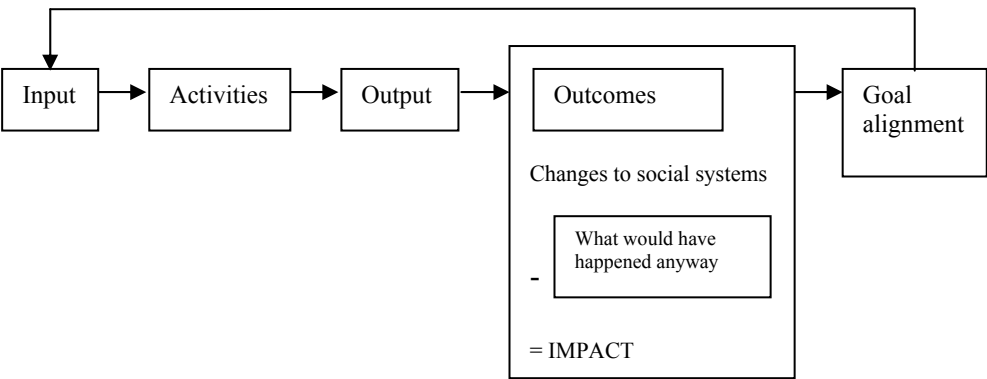


Figure 3-2: Impact value chain (adapted from Clark et al., 2004)

Inputs are the resources provided to the program or organisation in order to achieve the organization’s mission. These inputs are used in activities and programs that will lead to certain outputs. Outputs are the direct and immediate consequences of the activities undertaken. Outcomes are, unlike inputs and outputs much more comprehensive and are translated to the extent that the goals of the organisation are achieved. Outcomes are those benefits or changes for individuals or communities after participating in or being influenced by the activities of the organization. Impacts are those outcomes minus what would have happened anyway. This refers to the need of a so-called counter factuality; an indication of what might have happened if the activities would not have been undertaken by the organization. The use of a counter factuality, also called baseline is also used in cost-benefit analysis. The counterfactuality or baseline situation does not necessarily mean that nothing will happen to the current situation over time if the activity is not undertaken. Impacts include intended as well as unintended effects, negative as well as positive effects and both long term and short term effects (Wainwright, 2002).

An example of the difference between outputs, outcomes and impact can be illustrated by the use of a certain medicine. Outputs can be measured by the amount of medicines produced, outcomes measures the use of the medicines by patients, impact measures the actual health effects users of the medicine encounter compared to a situation where they would have not used the medicines. This example illustrates that impact measurement is a form of performance or effectiveness measurement.

By differentiating between outputs and impacts the scope of impact used in this paper is complementary to the views of authors (a) who have promoted the idea that companies should provide greater emphasis on the management and measurement of non-monetary aspects of corporate performance (Norton & Kaplan, 1996), and (b) who have encouraged to take a longer time horizon into account (Burrit et al., 2002).

3.5 Developments in performance measurement

The purpose of economic behaviour is to maximize wealth or profit by managing scarce resources in the best possible manner. Therefore, emphasis is placed on the need for managers to seek efficient outcomes (Burrit & Saka 2006). In general, efficiency measures the relation between outputs from and inputs to a process. The higher the output for a given input, or the lower the input for a given output, the more efficient the activity, product, or business is. Our understanding of both investment and return is founded upon a traditional separation of social value and economic value. Whilst, the core nature of investment and return separates social and financial interests it is the pursuit of a blended value that is composed of both (Emerson 2003).

There is a need for a development from traditional accounting to contemporary accounting and from the focus on single dimensional, financial, value creation towards integrated dimensional, blended value creation. In 1991, Eccles envisaged the start of a revolution in performance measurement and predicted that “*within the next five years, every company will have to redesign how it measures its business performance*” (p. 131). Firms traditionally have relied almost exclusively

on financial measures for measuring performance (Ittner & Larcker, 1998). New strategies and competitive realities demand for new measurement systems.

New information systems and processes capable of measuring the creation of value in this changed context are needed. One step forward is to look beyond our traditional financial, monetary and quantifiable measures of impacts of activities, and start to explore and incorporate methodologies borrowed from other disciplines, such as sociology. Organisations judge their success on the basis of the tasks completed and milestones achieved - amount of money invested, quantity of products distributed, and so on – rather than on how well their activities translate into changes on the ground (London, 2009). Impacts can be measured on different levels, the individual level, the company level, and the societal level. The integration of social impact into the processes of decision making, planning and problem solving requires an innovative and interdisciplinary approach. Behind the scenes, scientists, practitioners, and consultants developed improved (multidisciplinary) methodologies for assessing impacts against the double bottom line, the triple bottom line, or other concepts linked to multi-dimensional value creation. An overview of methods is provided in the next paragraph.

3.6 Social impact measurement

3.6.1 An overview of methods

From the 1990s onwards, several methods have been developed to measure social impact. Literature research, internet search and expert information resulted in a list of thirty quantitative (social) impact measurement methods¹⁴ (see Table 3-2) (e.g. Schaltegger et al., 2002; Scholten, 2003; Clark et al., 2004; Epstein, 2008). This list is not intended to be exhaustive, but provides an overview of social impact measurement methods in order to illustrate the existing diversity in the methods.

¹⁴ We must emphasize that we only focus on quantitative methods here. Next to these methods many qualitative methods exist, e.g. story telling, content analysis, and interviews. Guidelines, principles and standards like GRI, AA1000, SA8000, ISO26000, are not included in this list.

(Social) Impact measurement methods	
1.	Acumen Scorecard
2.	Atkinson Compass Assessment for Investors (ACAFI)
3.	Balanced Scorecard (BSc)
4.	Best Available Charitable Option (BACO)
5.	BoP Impact Assessment Framework
6.	Center for High Impact Philanthropy Cost per Impact
7.	Charity Assessment Method of Performance (CHAMP)
8.	Foundation Investment Bubble Chart
9.	Hewlett Foundation Expected Return
10.	Local Economic Multiplier (LEM)
11.	Measuring Impact Framework (MIF)
12.	Millennium Development Goal scan (MDG-scan)
13.	Measuring Impacts Toolkit
14.	Ongoing Assessment of Social Impacts (OASIS)
15.	Participatory Impact Assessment
16.	Poverty Social Impact Assessment (PSIA)
17.	Public Value Scorecard (PVSc)
18.	Robin Hood Foundation Benefit-Cost Ratio
19.	Social Compatibility Analysis (SCA)
20.	Social Costs-Benefit Analysis (SCBA)
21.	Social Cost-Effectiveness Analysis (SCEA)
22.	Social e-valuator
23.	Social Footprint
24.	Social Impact Assessment (SIA)
25.	Social return Assessment (SRA)
26.	Social return on Investment (SROI)
27.	Socio-Economic Assessment Toolbox (SEAT)
28.	Stakeholder Value Added (SVA)
29.	Toolbox for Analysing Sustainable Ventures in Developing Countries
30.	Wellventure Monitor

Table 3-2: Overview of (social) impact measurement methods

Several methods have been developed by, or for, non profit or governmental organisations. Examples are SROI, OASIS, SCBA, and LEM. Other methods are mainly developed for, and used by, profit organisations. Examples are SRA, ACAFI, TBL, MIF, and BACO. Although a method might initially have been developed for a certain kind of organization, the method could be used and adapted by other kinds of organisations. The use of SROI is a good example of this phenomenon. This method was initially developed for non-profit organization and is currently increasingly used by profit organisations. Next to these quantitative impact measurement methods several companies, NGO's and

associations developed guidance documents, often based on one or more existing methods, on how to measure social impact. A few examples are the “Guidance document for the oil and gas industry” (IPIECA, 2008) and guidance documents developed by Shell (Shell 2008a, 2008b).

3.6.2 Characteristics of methods

There is a need for a wide range of methodologies tailored to the requirements of different types of organisations, depending on their activities, objectives and the aspects of impacts they want to measure. Next to this, there is no single tool or method that can capture the whole range of impacts or that can be applied by all organisations. The multitude of existing social impact measurement methods is confusing at a first glance. The existing measurement methods do not show a common understanding of what to measure, why or for whom to measure, and how to measure. As a result, methods could among others differ in *perspective*, *purpose* and *approach*. Social impact measurement methods can be classified based on characteristics of the methods. Such a classification might be helpful for companies when they want to select a social impact measurement method. Since the 1990s, the same situation exists for environmental accounting tools and methods (Loew, 2003). Currently, there are four suggestions to characterise environmental accounting tools and other methods:

- The US-EPA (1995) published a study with key concepts and terms related to environmental accounting;
- Schaltegger et al. (2000a) developed a framework for the instruments of environmental accounting;
- Loew et al. (2001) systematised cost concepts by combining the environmental impact and environmental costs;
- Clark et al. (2004) categorised measurement methods into three general categories: process methods, impact methods and monetarisation methods.

Specifications of these systems might be useful to characterise social impact methods. The framework as developed by Schaltegger et al. (2000a) and the categorisation from Clark et al. (2004) are useful to characterise social impact methods. The other frameworks focus more on output and costs relations, (Loew,

2001) or on concepts and terms (US-EPA, 1995) and not on classification of methods. Schaltegger et al. (2000) distinguishes five dimensions of environmental accounting methods: (1) information type; monetary versus physical, (2) scope; internal versus external, (3) length of time frame; short term focus versus long term focus, (4) time frame; past oriented versus future oriented, and (5) routines of information; routinely generated information versus ad hoc information.

In this paper we build a classification scheme with characteristics of social impact measurement methods based on the framework developed by Schaltegger et al. (2000a) and the categorisation from Clark et al. (2004). Table 3-3 provides an overview of method characteristics relevant for method selection.

Characteristics	Types
<i>Purposes</i>	Screening Monitor Reporting Evaluation
<i>Time frame</i>	Prospective Ongoing Retrospective
<i>Orientation</i>	Input Output
<i>Length of Time frame</i>	Short term Long term
<i>Perspective</i>	Micro (Individual) Meso (Company) Macro (Society)
<i>Approach</i>	Process Methods Impact Methods Monetarisation

Table 3-3: Characteristics of social impact measurement methods

The wisdom of different measures for different *purposes* tells us that measurement methods can be developed for different purposes depending on what we want to measure. This is our first characteristic. To be able to distinguish the existing measurement methods based on the different purposes, we identified methods that are particularly suited for (a) screening, (b) monitoring, (c) reporting and (d) evaluation. Methods suited for screening facilitates evaluation of investment

opportunities and of their performance with respect to investors' specific social and financial objectives. Methods suited for monitoring assists management with ongoing operational decision-making, and provide data for investor oversight. It may also help entrepreneurs to identify business model modifications or market opportunities. Methods for reporting are particularly useful to report to external stakeholders, such as potential investors, the public or other entities that require or request performance reports on a regular basis. Methods for evaluation may be used for retrospective, ex-post impact assessment of achievements for academic purposes but also for organizational learning.

Secondly, methods may use a different *time frame* for the assessment. Some methods can be applied prospective to assess impacts which can for example be expected from planned reforms and programs. Those methods have the ability to open up space for different options, support the design of mitigation measures and modifications, and assist decision makers in choosing the options which fit best (IPC, 2008). Methods can also be developed with a focus on ongoing or retrospective purposes. Methods focusing on the ongoing events are useful for testing assumptions along the way. Retrospective methods are useful for evaluation of past activities.

Thirdly, methods can have either an *orientation* on the inputs or an orientation on the outputs. Input oriented methods are useful to assess differences in input (for example expenditure saved by increased employee satisfaction) as a result of a social activity. Output oriented methods, on the other hand, are useful to assess differences in output as a result of a social activity (for example a better reputation).

Fourthly, methods can have a length of *time frame* focusing on the long term or on the short term. In more traditional measurement methods the focus is normally on the short term. However, for social impact measurement both a short term and a long term focus can be needed. Impacts often do not occur in total after a short time, it can take a long term before social impacts occur. An example is the global warming effects resulting from greenhouse gasses.

Fifthly, measurement methods can use a different *perspective*. Measurement methods originating from, for example, business measurement, social science evaluation, policy or program evaluation, all use a different perspective. A first inventory showed that social impact measurement from a business (micro) perspective does include, for example, different indicators than social impact measurement from a (macro) socio-economic perspective (Maas & Bouma, 2005). Depending on the perspective used different indicators will be used and therefore different impacts will be measurement. Consequently, the perspective used is decisive for the results of the measurement.

Finally, methods can have different *approaches* to measuring social impact. In the literature, three broad categories are defined: process methods, impact methods and monetarisation methods (Clark et al., 2004). Process methods monitor the efficiency and cost-effectiveness of ongoing operational processes. As such, they do not provide an absolute measure of social returns. However, outputs can be evaluated by the extent to which they correlate with, or cause, desired social outcomes. Impact methods measure operational outputs and their impact, i.e. the incremental outcome beyond and above what would have happened if the organization did not exist. Impact can be measured in several ways. There are methods that measure impact by linking Corporate Social Performance (CSP) and Corporate Financial Performance (CFP) (Wood & Jones, 1995; McWilliams & Siegel, 2000; Margolis et al., 2003; Dentchev, 2004). Another example of impact methods is the so called 3P approach where the economic dimension (Profit), social dimension (People) and environmental dimension (Planet) are all measured in their own unit (Elkington, 1999; Labuschagne et al., 2005; GRI, 2006). Next to this, monetarisation methods quantify social and environmental indicators and translate those indicators into a monetary value to be comparable with traditional financial data (Lamberton, 2005; Pearce et al., 2006). A comprehensive overview of several monetarisation methods can be found in the environmental economic literature (Pearce et al., 1994; Pearce et al., 2006).

3.6.3 Classification of methods

All methods are classified based on the characteristics as specified in the previous paragraph. The classification is based on descriptions of the individual tools¹⁵ provided by the developers, researchers or from the internet. The results are shown in table 3-4.

¹⁵ In Appendix A, a short description of the social impact measurement tools is provided.

Characteristics	Types	1. Acumen scorecard	2. ACAFI	3. Balanced Scorecard	4. BACO	5. BoP Impact Assessment Framework	6. Center for high impact philanthropy cost per impact	7. CHAMP	8. Foundation Investment Bubble Chart	9. Hewlett Foundation Expected Return	10. Local Economic Multiplies	11. Measuring Impact Framework	12. MDG-scan	13.Measuring Impacts Toolkit	14. OASIS	15. Participatory Impact Assessment
Purposes	Screening	X	-	X	X	X	X	-	X	X	X	X	-	-	-	X
	Monitoring	X	X	X	X	X	X	-	-	-	-	X	-	-	X	X
	Reporting	X	X	X	X	X	X	X	X	-	-	X	X	-	X	X
	Evaluation	-	-	X	-	X	X	X	X	-	X	X	X	X	X	X
Time Frame	Prospective	X	X	X	X	X	X	-	-	X	X	X	-	-	-	X
	Ongoing	X	X	X	X	X	X	-	X	-	-	X	-	-	X	X
	Retrospective	-	-	X	X	X	-	X	X	-	X	X	X	X	X	X
Orientation	Input	X	X	-	X	X	X	X	-	-	X	X	-	X	X	X
	Output	-	-	X	-	-	-	-	X	X	-	-	X	-	X	-
Length of Time Frame	Short Term	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
	Long Term	X	X	-	-	-	X	-	-	-	-	X	-	-	-	X
Perspective	Micro (Individual)	-	X	-	-	X	X	X	X	X	X	-	-	X	X	X
	Meso (company)	X	X	X	X	X	-	-	-	-	X	X	-	X	-	-
	Macro (society)	-	-	X	X	X	X	X	X	X	-	X	X	X	X	X
Approach	Process methods	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
	Impact methods	-	-	O	-	X	-	-	-	-	-	X	O	-	X	X
	Monetization	-	-	-	X	-	-	-	-	-	X	-	-	X	X	-
Characteristic of tool; X: yes, O: partially, -: no																

Characteristics	Types	16. PSIA	17. Public Value Scorecard	18. Robin Hood Foundation Benefit-cost ratio	19. SCA	20. SCBA	21. SCEA	22. Social e-valuator	23. Social Footprint	24. SIA	25. Social Return Assessment	26. SROI	27. SEAT	28. SVA	29. Toolbox for Analysing Sustainable Ventures	30. Wellventrue Monitor
Purposes	Screening	X	-	X	X	X	-	-	X	X	X	-	-	-	X	-
	Monitoring	-	X	-	X	-	-	X	X	X	X	X	X	-	X	-
	Reporting	X	X	X	-	X	X	X	X	X	X	X	X	-	X	X
	Evaluation	X	-	X	X	X	X	X	X	X	X	X	X	X	X	X
Time Frame	Prospective	-	X	X	X	X	-	-	X	X	X	-	-	-	X	-
	Ongoing	-	X	X	X	X	-	X	X	X	X	X	X	-	-	-
	Retrospective	X	-	X	-	X	X	X	X	X	X	X	X	X	X	X
Orientation	Input	X	X	-	X	X	X	X	-	X	X	X	X	-	X	-
	Output	-	-	X	-	-	-	-	X	-	-	-	-	X	-	X
Length of Time Frame	Short Term	X	X	X	X	X	X	X	X	X	X	X	X	-	X	-
	Long Term	X	-	X	-	X	X	-	X	-	-	-	-	-	X	X
Perspective	Micro (Individual)	X	-	-	-	-	-	X	X	-	X	X	-	-	X	X
	Meso (company)	-	X	-	X	-	-	-	X	-	X	-	X	X	X	X
	Macro (society)	X	X	X	X	X	X	O	X	X	X	O	X		X	X
Approach	Process methods	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
	Impact methods	X	-	X	-	X	-	O	-	X	-	O	-	-	-	-
	Monetization	-	-	X	-	X	X	X	-	-	X	X	-	X	O	-

Characteristic of tool; X: yes, O: partially, -: no

Table 3-4: Classification of social impact measurement tools

The classification of the methods shows that although all methods have been developed to measure social impact, only eight of the thirty methods actually do measure social impact, and four methods are capable to partially¹⁶ measure social impact. Most of the methods have an orientation on inputs instead of outputs. While many methods are useful for reporting, none of the methods is specifically designed for reporting purposes. The methods, with exception of three methods, are all useful for evaluation purposes. Only one method, the Hewlett Foundation Expected Return, is limited to a purely prospective time frame and is therefore only useful for screening purposes. All methods have a process approach. Moreover, eleven methods are developed to transfer all effects into monetary units. The methods that truly aim at measuring impact all have a macro, societal, perspective. All methods are designed to include short term effects, while only twelve methods are capable of including long term effects.

3.7 Conclusions

The mixture of methods and their differences in, amongst others, perspective, approach and purpose, make it hard for managers to select a suitable method for their social impact measurement. We classified social impact measurement methods based on the characteristics of thirty existing methods.

In the literature several frameworks, classification schemes, and system of concepts exist, mainly for environmental accounting and environmental management accounting. The framework that is most frequently referred to is developed by Schaltegger et al. (2000a). The classifications in this framework are; monetary and physical accounting tools, time frame, length of time frame and routines of information. For social impact measurement methods some additional characteristics are important to be able to classify existing social impact methods, such as perspective and orientation. The characteristics used to classify the methods are: *focus* which can be either prospective, ongoing or retrospective; *orientation*, methods can be input or output oriented; *time frame*, methods can

¹⁶ We speak about partially when a method for example only takes intended impacts into account or makes use of predetermined indicators for impact measurement.

address a short term or a long term time frame; *perspective*, methods can use an individual, organizational or community or societal perspective; *approach*, methods can use different approaches to measure impact, i.e. process methods, impact methods, monetarisation methods; and *purposes*, methods can be used for screening, monitoring, reporting, and evaluation.

While all methods collected have been specifically developed to measure social impact, this research shows that only eight of the thirty methods actually do measure social impact. These methods all adopt a macro, societal, perspective. In view of the rising interest in impact measurement the development of this classification of social impact measurement methods is offered as a way forward for managers seeking to adopt social impact measurement. Corporate managers benefit from the developed classification because it clarifies the concept and applicability of social impact tools. As a result it can be seen as a first step to make it easier for managers to select and actually use social impact measurement tools.

The classification of the methods in this research is based on information provided by the developers of the methods, researchers who compared some of the methods or it is extracted from the internet. Future research could take this analysis one step further to actually work with each of the methods. This will be a better way to compare the actual features, possibilities and limitations of the methods. Next to this it will be interesting to develop a guideline for managers for the selection of a social impact measurement tool.

APPENDIX A DESCRIPTION OF SOCIAL IMPACT MEASUREMENT METHODS

1. Acumen Scorecard

Adapted from a description in Clark et al. 2004.

Developed in 2001 by: Acumen Fund in association with McKinsey, a non-profit enterprise that invests in and grants to both non-profit and for-profit ventures in its portfolio.

The system was developed to assist both for profit businesses, and not-for-profit organisations focus on actions that deliver both immediate results and improve an organisations long term competitive positioning in changing and dynamic marketplaces.

The system assesses the social ventures investments in Acumen's portfolio of for-profit and non-profit companies. It entails tracking progress on short- and long term outcomes, which is assessed in terms of outcome milestones and benchmarks.

<http://www.acumensms.com/>

2. Atkisson Compass Assessment for Investors (ACAFI)

Adapted from a description in Clark et al. 2004.

This system is developed by AtKisson Inc.in 2000.

This method builds on AtKisson's Compass Index of Sustainability, a tool for assessment of the sustainability of communities. The framework for investors is designed to integrate with the reporting guidelines of major CSR standards, particularly the Global Reporting Initiative (GRI) and the Dow Jones Sustainability Index (DJSI), as a venture matures. The method incorporates a structure with five key areas: N = nature (environmental benefits and impacts) S = society (community impacts and involvement) E = economy (financial health and economic influence), and W = well-being (effect on individual quality of life), and a fifth element, + = Synergy (links between the other four areas and networking), and includes a point-scale rating system on each of the five areas. Each area has several indicators each of which has specific criteria. The method has been peer reviewed by corporate executives, economic academicians, and investment professionals.

http://atkisson.com/wwd_tools.php

3. Balanced Scorecard (BSc)

Adapted from a description in Clark et al. 2004.

The Balanced Score Card is developed by Robert Kaplan and David Norton in 1992.

The Balanced Scorecard proposes that companies measure operational performance in terms of financial, customer, business process, and learning-and-growth outcomes, rather than exclusively by financial measures, to arrive at a more powerful view of near term and future performance. It advocates integration of these outcomes into firms' strategic planning processes. The scorecard is a framework for collecting and integrating the range of metrics along the Impact Value Chain, and is adaptable to an organization's stage. It helps coordinate evaluation, internal operations metrics, and external benchmarks, but is not a substitute for them. Recently Kaplan has adapted the Balanced Scorecard for nonprofits, suggesting that such institutions adopt strategic performance measures that focus on user satisfaction (Clark et al. 2004).

<http://www.balancedscorecard.org/>

4. Best Available Charitable Option (BACO)

Based on internet information, accessed on 29 august 2009, http://blog.acumenfund.org/wp-content/uploads/2007/01/BACO%20Concept%20Paper_01.24.071.pdf

This system is developed by Acumen Fund in 2006

Rather than seek an absolute standard for social return across an extremely diverse portfolio, Acumen Fund looks to quantify an investment's social impact and compare it to the universe of existing charitable options for that explicit social issue. Specifically, this tool BACO helps inform investors where their philanthropic capital will be most effective—answering “For each dollar invested, how much social output will this generate over the life of the investment relative to the best available charitable option?” The BACO ratio (for best available charitable option), must be seen as a starting point for assessing the social impact and cost-effectiveness of investments. The point of the analysis is to inform our portfolio decision-making with a quantifiable indication of whether our social investment will “outperform” a plausible alternative.

<http://www.acumenfund.org>

5. BoP Impact Assessment Framework

Based on internet information, accessed on 29 august 2009, [http://www.wdi.umich.edu/files/Conferences/2007/BoP/Speaker%20Presentations/PDF/State%20of%20the%20Field%20\(London%20Final\).pdf](http://www.wdi.umich.edu/files/Conferences/2007/BoP/Speaker%20Presentations/PDF/State%20of%20the%20Field%20(London%20Final).pdf)

The Bottom of the Pyramid Impact Assessment Framework is developed by Ted London in 2007.

The aim of the BoP Impact Assessment Framework is to understand who at the base of the pyramid is impacted by BoP ventures and how they are affected. The framework is developed to evaluate and articulate impacts, to guide strategy and to enable better investment decisions.

Next to this the system contributes to a deeper knowledge of the relationship between profits and poverty alleviation and to recognize the poverty alleviation implications of

different types of ventures. It builds upon the different well-being constructs as developed by 1998 Nobel Prize winner Amartya Sen.

<http://www.wdi.umich.edu/>

6. Center for High Impact Philanthropy Cost per Impact

Based on internet information, accessed on 29 august 2009, http://www.impact.upenn.edu/our_work/documents/WhatIsHighImpactPhilanthropy_initialconceptpaperApril2007_000.pdf

This tool is developed by the Center for High Impacts Philanthropy from the University of Pennsylvania in 2007.

High impact philanthropy means getting the most .good for your philanthropic .buck. It is the process by which a philanthropist makes the biggest difference possible, given the amount of capital invested. In order to assess cost per impact, philanthropists must be able to assess, to the extent possible, its two components: 1) social impact, as measured by specific, objective criteria for success; and 2) cost, as measured by the investments made by philanthropists or other sources to realize the impact. Assessment requires objective, reliable information on what's effective, what's not, and how much capital is required to achieve a given impact. The Center for High Impact Philanthropy aims to deliver the information and analytic tools required to answer these questions.

<http://www.impact.upenn.edu>

7. Charity Assessment Method of Performance (CHAMP)

Based on internet information, accessed on 29 august 2009 http://www.goededoelentest.nl/_shared/champ_juni_2007.pdf and http://www.goededoelentest.nl/_shared/champ_juni_2007.pdf

The CHAMP method is developed by the Dutch charities test (nationale goede doelen test) in 2006.

The performance of charity's ADT are determined by effectiveness - What did we achieve? - and efficiency - how fast and in a cost-effective way? Effectiveness and efficiency can be measured on five distinct levels:

1. Impact on society: how is society is affected by the effect of the charity on their target group?
2. Impact on the public: in what way is the situation of the target group demonstrably improved by the output of the charity?
3. Output: what concrete results are produced by the core activities of the charity using the input factors (money, volunteers, etc.)?
4. Activities: How effective are the core activities of the charity?
5. Input: how effective and efficient are the activities related to the input factors such as fundraising and recruiting volunteers?

The CHAMP method provides indicators to measure the performance on all different levels. This tool is developed to help donators, and volunteers to choose between a wide range of non- profit organisations.

<http://www.goededoelentest.nl>

8. Foundation Investment Bubble Chart

Based on internet information, accessed on 1 august 2009, and
<http://www.gumballuniversity.org/blog/start-a-venture/metrics-analytical-methods>
<http://www.gatesfoundation.org/learning/Documents/WWL-profiles-eight-integrated-cost-approaches.pdf>

This form of analysis is more of a visualization tool that plots the quantifiable impact on the x-axis, the percentage of implementation on the y-axis, and the relative size of a foundation's grant in a given field. This results in an easy comparison of the performance of organisations across a portfolio and can have different variables for the x-axis, y-axis and bubble relativity for flexible data display. Foundation board of directors and senior management teams could use the bubble chart to assess the relative performance and cumulative foundation investment (or total philanthropic investment) against the indices of performance they care about most. The analyses can be used to discuss performance, explore why one program or a group of programs are positioned where they are, and inform future investments.

9. Hewlett Foundation Expected Return

Based on internet information, accessed on 1 august 2009, and
<http://www.gumballuniversity.org/blog/start-a-venture/metrics-analytical-methods>
<http://www.gatesfoundation.org/learning/Documents/WWL-profiles-eight-integrated-cost-approaches.pdf>

This tool is developed by the William and Flora Hewlett Foundation. This foundation was founded in 1966 to solve social and environmental problems at home and around the world.

The method calculates the expected return of investments and is developed to enable foundations To ask and answer the right questions for every investment portfolio: What's the goal? How much good can it do? Is it a good choice? How much difference will we make? What's the price tag? The method is purely prospective. The expected return provides a systematic, consistent, quantitative process for evaluating potential charitable investments, and is based heavily on cost-effectiveness analysis and cost-benefit analysis.

<http://www.hewlett.org/>

10. Local Economic Multiplier (LEM)

Based on internet information, accessed on 1 august 2009, and
<http://www.sustainableseattle.org/confolder/confolder/VikiSonntagPresentation.ppt>
<http://www.applet-magic.com/LEM.htm>

The Economic Multiplier is an central concept in Keynesian and post-Keynesian *economics*. A multiplier is a factor of proportionality that measures how much an endogenous variable changes in response to a change in some exogenous variable

The local economic multiplier is based on the idea that dollars spend in locally-owned stores will impact the local economy 2 or 3 times more in comparison to dollars spend in national retailers. The basics of the local multiplier methodology are the identification of income in three rounds. The first round measures direct income of the study group, the second round measures indirect income, i.e. local spending of the study group, the third round measures induced income, i.e., local spending by local recipients of study group spending. The local multiplier is the sum of direct, indirect and induced income divided by direct income.

11. Measuring Impact Framework (MIF)

Based on internet information, accessed on 24 august 2009,
<http://businessfightspoverty.ning.com/profiles/blogs/what-gets-measured-gets-done> and
<http://www.wbcsd.org/web/measuringimpact.htm>

The Measuring Impact Framework is developed in 2008 by the World Business Council for Sustainable Development.

The Measuring Impact Framework is designed to help companies understand their contribution to society and use this understanding to inform their operational and long-term investment decisions and have better-informed conversations with stakeholders. The framework is based on a four-step methodology that attempts to merge the business perspectives of its contribution to development with the societal perspectives of what is important where that business operates. Step 1, set boundaries: determine the scope and depth of the overall assessment in terms of geographical boundary (local versus regional) and types of business activities to be assessed. Step 2, measure direct and indirect impacts: Identify and measure the direct and indirect impacts arising from the company's activities, mapping out what impacts are within the control of the company and what it can influence through its business activities. Step 3, assess contribution to development. Assess to what extent the company's impacts contribute to the development priorities in the assessment areas. Step 4, prioritize management response: based on steps 2 and 3 extract the key risks and opportunities relative to the company's societal impact, and based on this, develop an appropriate management response. There is no "one size fits all" way to use this methodology. In order to appropriately tailor the methodology to the business and its operating context, as well as ensure follow-up actions are taken, companies are encouraged to make the assessment as participative as possible, consulting people both within and if possible external to the firm.

<http://www.wbcsd.org>

12. Millennium Development Goal scan (MDG-scan)

Based on internet information, accessed on 1 august 2009,
https://www.mdgscan.com/index.php?page=Textpage&item=contact_details#page=Textpage&item=about_scan

The MDG-scan is developed in 2009 by the Dutch National Committee for International Cooperation and Sustainable Development (NCDO) and Dutch Sustainability Research (DSR).

The MDG Scan is a tool designed for companies to measure the positive contribution to the Millennium Development Goals (MDGs) and demonstrate their role in the global initiative to reach these eight MDGs. The MDG Scan measures each company's MDG impact by entering key data in a secured environment. Once the company approves the publication of its results, they will be visible for everyone. The MDG Scan is a practical tool for companies. Without spending much time or effort, companies can gain insight in their MDG Footprint. Based on key data on core business and community investment activities that can be entered after registering, the MDG scan estimates your company's contribution to each of the MDGs. Real time results generation quickly provides easy-to-understand insights, globally, per country or per sector / industry. Each company can download a personalized MDG impact results report, which facilitates internal discussions and in-depth analysis of its MDG impact.

<http://www.mdgscan.com>

13. Volunteering Impact Assessment Toolkit

Based on internet information, accessed on 1 august 2009,

<http://www.socialeconomyscotland.info/scvo/content/pilot/impact.asp> and

<https://ecommerce.volunteering.org.uk/PublicationDetails.aspx?ProductID=V309>

The Volunteering Impact Assessment Toolkit was developed in 2004 by the Institute of Volunteering Research (IVR) with input from the London School of Economics, The University of East London and Roehampton University. It is widely recognised that volunteers make a difference to the work of many social economy organisations, but this is mainly supported by anecdotal evidence. The Toolkit is a way of changing this. It is easy to use, comprehensive and adaptable. It allows organisations to look at the impact of volunteering on the volunteer, the service user, the organisation and the wider community. It can help organisations gain a greater understanding of how and why volunteering works in the organisation as well as gather evidence to support funding bids.

This new toolkit will enable organisations to assess the impact of volunteering on all key stakeholders - the volunteers, the organisation, the beneficiaries, and the broader community. Results over time can be compared. Organisations will be able to use it to assess a wide range of impacts, from the skills development of volunteers to the economic value of volunteering organisations. Positive and negative results, intended and unintended impacts can be explored.

<http://www.volunteering.org.uk>

14. Ongoing Assessment of Social Impacts (OASIS)

Adapted from a description in Clark et al. 2004

Developed in 1999 by REDF (formerly The Roberts Enterprise Development Fund) a nonprofit enterprise that creates job opportunities through support of social enterprises that help people gain the skills to help themselves.

REDF developed this system for its internal use and that of the nonprofit agencies in its portfolio to assess the social outputs and outcomes of the agencies overall, including the social enterprises they each operate. The system is a customized, comprehensive, ongoing social management information system (MIS). It entails both designing an information management system that integrates with the agency's information tracking practices and needs, and then implementing the tracking process to track progress on short- to medium term (2 years) outcomes.

<http://www.redf.org/>

15. Participatory Impact Assessment

Based on internet information, accessed on 24 august 2009,

<https://wikis.uit.tufts.edu/confluence/display/FIC/Participatory+Impact+Assessment--+a+Guide+for+Practitioners> and

http://www.devnet.org.nz/conf2002/abstracts/Nowland-Foreman_Sandra.pdf

The Feinstein International Center has been developing and adapting participatory approaches to measure the impact of livelihoods based interventions since the early nineties. Participatory Impact Assessment (PIA) takes the participatory methodology of these processes and applies it to the original organisational objectives in asking the critical questions “what difference are we making?” PIA offers not only a useful tool for discovering what change has occurred, but also a way of understanding why it has occurred. The framework does not aim to provide a rigid or detailed step by step formula, or set of tools to carry out project impact assessments, but describes an eight stage approach, and presents examples of tools which may be adapted to different contexts. A guide for practitioners is available to demonstrate how PIA can be used to overcome some of the inherent weaknesses in conventional humanitarian monitoring evaluation and impact assessment approaches, such as; the emphasis on measuring process as opposed to real impact, the emphasis on external as opposed to community based indicators of impact, and how to overcome the issue of weak or non-existent baselines.

<https://wikis.uit.tufts.edu/confluence/display/FIC/Feinstein+International+Center>

16. Poverty Social Impact Assessment (PSIA)

Adapted from a description in Clark et al. 2004.

This system has been developed by the World Bank in 2000.

PSIA is a systematic analytic approach to “the analysis of the distributional impact of policy reforms on the well-being of different stakeholder groups, with a particular focus on

the poor and vulnerable...” (PSIA User’s Guide). It is not a tool for impact assessment in and of itself, but is rather a process for developing a systematic impact assessment for a given project. Its components are not new, but PSIA has been formally articulated as a systematic approach by the World Bank in 2003. The method emphasizes the importance of setting up the analysis by identifying the assumptions on which the program is based, the transmission channels through which program effects will occur, and the relevant stakeholders and institutional structures. Then program impacts are estimated, and the attending social risks are assessed, using analytical techniques that are adapted to the project under study.

<http://www.worldbank.org/psia>

17. Public Value Scorecard (PVSc)

Based on internet information, accessed on 24 august 2009,

http://www.exinfm.com/workshop_files/public_sector_scorecard.pdf

The Public Value Scorecard is developed in 2003 by Prof. M.H. Moore, Director of the Hauser Center for Non-profit Organisations at the John F. Kennedy School of Government at Harvard University.

The Public Value Scorecard is based on the concept of the Balanced Scorecard. All the basics of the Balanced Scorecard— that non-financial measures are important, that process measures are important as well as outcome measures, that a measurement system ought to support the execution of an agreed upon strategy – are used but put to work through the use of strategic concept that seems more appropriate to nonprofits. The ultimate goal of nonprofits is not to capture and seize value for themselves, but to give away their capabilities to achieve the largest impact on social conditions that they can, and to find ways to leverage their capabilities with those of others. There are three crucial differences between the BSc and the PVSc. First, in the public value scorecard, the ultimate value to be produced by the organization is measured in non-financial terms. Second, the public value scorecard focuses attention not just on those customers who pay for the service, or the clients who benefit from the organization’s operations; it focuses as well on the third party payers. Third, the public value scorecard focuses attention on productive capabilities for achieving large social results outside the boundary of the organization itself.

18. Robin Hood Foundation Benefit-Cost Ratio

Based on internet information, accessed on 29 august 2009, and

http://www.robinhood.org/media/121827/q1_2006.pdf

http://www.partnershipforsuccess.org/docs/ivk/iikmeeting_slides200711weinstein.pdf

The Robin Hood benefit-cost ratio was developed by the Robin Hood Foundation in 2004.

But in 2004, we determined that for truly effective grant making, we needed to know the value of similar and dissimilar programs. For example, is a certain job training program a better investment than a particular education program? To answer this question, Robin Hood developed an innovative methodology of evaluation, or metrics. First, a common measure of success for programs of all types is applied: how much the program boosts the

future earnings (or, more generally, living standards) of poor families above that which they would have earned in the absence of Robin Hood's help. Second, a benefit/cost ratio is calculated for the program—dividing the estimated total earnings boost by the size of Robin Hood's grant. The ratio for each grant measures the value it delivers to poor people per dollar of cost to Robin Hood—comparable to the commercial world's rate of return.

<http://www.robinhood.org>

19. Social Compatibility Analysis (SCA)

Based on internet information, accessed on 29 august 2009 http://www.ifib.uni-karlsruhe.de/web/ifib_dokumente/downloads/bfs_abstract.pdf

This tool has been developed in 2003 by the Institute for Sustainable Development at the Zurich University of Applied Sciences Winterthur (ZHW), Switzerland.

The Social Compatibility Analysis (SCA). This method defines objective criteria according to which social compatibility is evaluated. First, the user of the SCA-tool divides a system into a number of subsystems, i.e. a product could be divided into subsystems according to the life cycle phases preproduction, production, use and disposal. Second, relevant evaluation criteria are selected. Finally, subsystems should be assigned to classes A (highly relevant social problems), B (of medium relevance), C (of low relevance) or 'not relevant' for all the chosen criteria. The SCA is useful when the social dimension of a project is concerned, when the clarification of differing stakeholder opinions is needed or when sets of solutions are to be negotiated.

<http://zsa.zhwin.ch>

20. Social Costs-Benefit Analysis (SCBA)

Adapted from a description in Clark et al. 2004.

This is a general economic tool for performance measurement. Since the 1990s the traditional cost-benefit analysis has been extended to include impacts upon the society.

Social cost-benefit analysis is a type of economic analysis in which the costs and social impacts of an investment are expressed in monetary terms and then assessed according to one or more of three measures: (1) net present value (the aggregate value of all costs, revenues, and social impacts, discounted to reflect the same accounting period; (2) benefit-cost ratio (the discounted value of revenues and positive impacts divided by discounted value of costs and negative impacts); and (3) internal rate of return (the net value of revenues plus impacts expressed as an annual percentage return on the total costs of the investment.

21. Social Cost-Effectiveness Analysis (SCEA)

Based on internet information, accessed on 29 august 2009 <http://www.caps.ucsf.edu/pubs/FS/costeffectiverev.php>

The term cost-effectiveness analysis refers to the economic analysis of an intervention. This is a general economic tool for performance measurement. Since the 1990s the traditional cost-effectiveness analysis has been extended to include impacts upon the society.

For example, one measure of cost-effectiveness is the cost per HIV infection averted. This is affected by many factors: intervention cost, number of people reached, their risk behaviors and HIV incidence, and the effectiveness of the intervention in changing behavior. The purpose of cost-effectiveness analysis is to quantify how these factors combine to determine the overall value of a program. Cost-effectiveness analysis can determine if an intervention is cost-saving (cost per HIV infection averted is less than the lifetime cost of providing HIV/AIDS treatment and care) or cost-effective (cost per HIV infection averted compares favorably to other health care services such as smoking cessation or diabetes detection).

Cost-effectiveness analyses also break down the costs and resources needed to implement interventions—personnel, training, supplies, transportation, rent, overhead, volunteer services, etc.

22. Social e-valuator

Based on internet information, accessed on 1 august 2009

<http://www.socialevaluator.eu/SROItool.aspx>

The social e-valuator is developed in 2007 by the d.o.b. Foundation and the Noaber Foundation and Scholten Franssen, a Dutch consultancy firm.

The social e-valuator is a web-tool based on the SROI methodology. For further description see description of SROI.

<http://www.socialevaluator.eu>

23. Social Footprint

Based on internet information, accessed on 1 august 2009,

<http://www.sustainableinnovation.org/Social-Footprint.pdf>

The social footprint is a measurement and reporting method that organisations can use to manage, measure and report the sustainability of their impacts on people and society in a broad range of areas. It is a context-based measurement tool that takes actual human and social conditions in the world into account as a basis for measuring the social sustainability performance of organisations. The Social Footprint might be seen as an adaptation of the concept of ecological footprint. Both footprints are alike in the sense that both are about measuring gaps, but the similarity ends there. In the case of the Ecological Footprint, the gaps of interest to us are between resources we need and resources we are stuck with; in the case of the Social Footprint, the gaps of interest to us are between resources we need and resources we have decided to produce. Ecological resources are fixed and limited, social resources are not. The sustainability metrics make it possible to measure non-financial organizational performance (e.g., the triple bottom line) against standards of

performance. Numerators express actual impacts on vital capitals in the world, and denominators express norms for what such impacts ought to be in order to ensure human well-being.

<http://www.sustainableinnovation.org/>

24. Social Impact Assessment (SIA)

Based on internet information, accessed on 1 august 2009, <http://www.st.nmfs.noaa.gov/tm/spo/spo16.pdf> and <http://www.dams.org/docs/kbase/contrib/ins220.pdf>

The concept of SIA is understood to include adaptive management of impacts, projects and policies (as well as prediction, mitigation and monitoring) and therefore needs to be involved (at least considered) in the planning of the project or policy from inception. The SIA process can be applied to a wide range of interventions, and undertaken at the behest of a wide range of actors, and not just within a regulatory framework. It is implicit that social and biophysical impacts (and the human and biophysical environments) are interconnected. The overall purpose of all impact assessment is to bring about a more sustainable world, and that issues of social sustainability and ecological sustainability need to be considered in partnership. SIA is also understood to be an umbrella or overarching framework that embodies all human impacts including aesthetic impacts (landscape analysis), archaeological (heritage) impacts, community impacts, cultural impacts, demographic impacts, development impacts, economic and fiscal impacts, gender assessment, health impacts, indigenous rights, infrastructural impacts, institutional impacts, political impacts (human rights, governance, democratisation etc), poverty assessment, psychological impacts, resource issues (access and ownership of resources), tourism impacts, and other impacts on societies.

<http://www.socialimpactassessment.net/>

25. Social return Assessment (SRA)

Adapted from a description in Clark et al. 2004.

This system was developed in 2000 by Pacific Community Ventures (PCV), a nonprofit organization that manages two for-profit investment funds that invest in companies that provide jobs, role models, and on-the-job training for low-income people, and that are located in disadvantaged communities in California.

PCV developed the method for its own use in assessing the social return of each investor and of its portfolio overall. The system entails tracking progress specifically on the number and quality of jobs created by PCV's portfolio companies. It helps the fund target and improve its services to its investors and to a group of companies to which it provides business advisory services. The method is separate from financial performance assessment.

<http://www.pacificcommunityventures.com/>

26. Social return on Investment (SROI)

Adapted from a description in Clark et al. 2004.

Developed in 1996 by REDF (formerly The Roberts Enterprise Development Fund) a nonprofit enterprise that creates job opportunities through support of social enterprises that help people gain the skills to help themselves.

REDF developed social return on investment (SROI) analysis to place a dollar value on ventures in its portfolio with social as well as market objectives. The approach combines the tools of benefit-cost analysis, the method economists use to assess non-profit projects and programs, and the tools of financial analysis used in the private sector. Conceptually, the approach differs from these established types of analysis, notably in what is considered a “social” benefit. Practically, it is more accessible to a broad range of users, substituting readily understood terms and methods for technical jargon and complicated techniques.

<http://www.redf.org/>

27. Socio-Economic Assessment Toolbox (SEAT)

Based on internet information, accessed on 1 august 2009

<http://www.angloamerican.co.uk/aa/development/society/engagement/seat/>
and <http://www.angloamerican.co.uk/corporateresponsibility>

The Socio-Economic Assessment Toolbox was first launched in 2003 by Anglo American plc..

The toolbox builds on several steps. (1) profiling our own operations and our host community, (2) identifying and engaging with key stakeholders, (3) assessing the impacts of our operations – both positive and negative – and the community’s key socio-economic development needs, (4) developing a management plan to mitigate any negative aspects of our presence and to make the most of the benefits our operations bring, (5) working with stakeholders and communities to help address some of their broader development challenges they would face even without our presence, (6) producing a report with stakeholders to form the basis for ongoing engagement with and support for the community.

<http://www.angloamerican.co.uk/>

28. Stakeholder Value Added (SVA)

Adapted from a description in Schaltegger et al. (2002).

Stakeholder value analysis is based on the stakeholder approach or standard-setting and strategic management of companies, which is used to analyse relations between stakeholders (interest groups) and companies. Measuring the contribution to company value due to stakeholder relations (stakeholder value) is done in four steps. In the first two steps, the return on stakeholder (RoSt) is calculated for the company in question and the reference company (e.g. market average). The RoSt represents the stakeholder’s relative

contribution to the value of the company. In the third step the RoSt of the reference company is subtracted from the RoSt of the company in view. In the final step this is multiplied by the company's stakeholder costs to obtain the stakeholder value added.

<http://www.uni-lueneburg.de/csm>

29. Toolbox for Analysing Sustainable Ventures in Developing Countries

Based on internet information, accessed on 1 august 2009

<http://www.roap.unep.org/pub/TowardstripleimpactEN.pdf>

The toolbox for analysing sustainable ventures in Developing Countries is developed by UNEP (United Nations Environmental Programme) in 2009.

The toolbox is developed to answer questions related to the identification of opportunities, the understanding of the determinants of success and the assessment of costs and benefits appear repeatedly. It addresses initiatives that support sustainable ventures including donor programmes, award schemes, private and public investors, professional education programs and policy makers. They can use the tools to systematically identify, evaluate, advice, and promote sustainable ventures. The tools respond to three questions that appear over and again in the process of building and managing a sustainable venture:

- Where are opportunities to create value • by meeting needs better and more efficiently?
- What factors determine the success of the venture?
- What are costs and benefits of the venture for the business, society and the environment

<http://www.unep.org>

30. Wellventure Monitor™

Based on internet information, accessed on 1 august 2009

<http://www.wellventuremonitor.nl/About.aspx?Num=0>

The Wellventure Monitor™ is developed in 2006 by the Fortis Foundation Netherlands (FFN) and the Erasmus University Rotterdam.

The Wellventure Monitor™ measures the effects of community investment on several aspects. It makes clear what the target group benefits from the project, but also what the company, the employees, and the social organization gains from it. The Wellventure Monitor™ provides insight into the effects of a specific project. But more importantly; it is also possible to see the sum of the different projects. This way, the long-term benefits of community investment become visible. With the tool, companies and organisations can create a survey after finishing a project and send it to those involved at the company, employees of the organization, and to the target group. The surveys are processed automatically. The tool can be used to view, analyze, and present the results. Per project, or over a longer period of time.

<http://www.wellventuremonitor.nl>

Chapter 4

Talk the Walk:

Impact Measurement of Corporate Philanthropy

Abstract

This study describes whether or not firms measure the impact of corporate philanthropy along three dimensions – business, social, and reputation and stakeholder satisfaction. Potential drivers for measuring impact are explored. The analysis is based on longitudinal cross-sectional and cross-national data of over 500 firms listed in the Dow Jones Sustainability Index (DJSI). A framework is developed based on institutional and legitimacy theory, supplemented by concepts from the accounting literature. It is predicted that the amount of philanthropic expenditure, company size, region, and sector influence the extent to which the impact of corporate philanthropy is measured. Logistic regression is used to test our framework. The results show that sixty-two up to seventy-six percent of the DJSI firms measure the impact of their corporate philanthropy. Mostly measured are social impact and impact on reputation and stakeholder satisfactions. Descriptive statistics show that relatively large financial firms from Europe and North America measure the impact of their corporate philanthropy compared to smaller firms, firms from other sectors and other countries. The results from our analysis show that especially MidCap firms and firms spending < 0.2% of EBIT measure relatively less impact of their corporate philanthropy. From these results we can conclude that both firm size and the amount of philanthropic expenditure significantly contribute to the prediction whether or not firms measure the impact of corporate philanthropy. Implications of this study for practice and future research are discussed.

This chapter is based upon:

Maas, K.E.H., (2009). Talk the Walk: Impact Measurement of Corporate Philanthropy, *Journal of Business Ethics* (under review)

4.1 Introduction

In the last decennia corporate philanthropy developed from altruistically motivated giving, where the only targeted beneficiary of philanthropic expenditure was society, to a more strategic approach, where targets are benefits for society and for the company (Fry et al., 1982; Varadarajan & Menon, 1988; Hess et al., 2002; Saiia et al., 2003; Seifert et al., 2003). This strategic approach to philanthropy is referred to as strategic philanthropy.

Strategic philanthropy has a direct and measurable impact on both social welfare and a corporation's balance sheet, e.g. increased trust, loyalty, goodwill (Godfrey, 2005). In other words, strategic philanthropy has dual objectives: social performance and financial profitability (Porter & Kramer, 2002; Saiia et al., 2003; Seifert et al., 2004). This confronts firms with an alignment problem. Jensen (2002) indicates that it is "logically impossible to maximize in more than one dimension at the same time unless the dimensions are monotone transformations of one another" (p. 238). This constraint implies that social performance and profits cannot be maximized simultaneously as there is a trade-off between social performance and profits (Husted & Salazar, 2006).

However, optimists believe that strategic philanthropy could create a win-win situation resulting in a positive impact on social performance and a positive impact on business profits. Therefore, the main challenges in decisions making are found in win-lose or lose-win situations, where considerations and choices to be made are not straightforward because of conflicting interests (Kolk, 2004). One way to optimize decisions is to collect and analyze data. To enable alignment of the dual objectives of corporate philanthropy, measuring the potential direct and indirect impacts of philanthropy on social performance as well as on business profits is necessary.

Few studies describe corporate impact measurement of philanthropic activities. The study of Carrigan (1997) is based on 180 industrial and consumer firms in the UK. After Carrigan, the study of Tokarsky (1999) involved 19 firms located in

Orange County, US. Carrigan finds in her study that 75 percent of the firms do not monitor and evaluate the impact of their philanthropic work. According to Carrigan (1997) “this implicates that a huge amount of money and contributions go out without anyone really accounting for what becomes of it, or whether or not objectives, if there are any, are being fulfilled” (p. 43). In view of welfare economic theory this statement is surprising given the need to deploy scarce resources in the most effective way. This urges companies to change their accounting behaviour and start measuring impact, not only from a business perspective, but also from a societal perspective. Academics and practitioners have been developing social accounting since the late 1970s but especially in the 1980s and early 1990s the discussion transformed into a substantial debate (e.g. Schreuder & Ramanathan, 1984; Owen et al., 2000; Quarter & Richmond, 2001; Gray, 2001, 2002).

Given the increasing public interest in sustainability and corporate philanthropy, philanthropy becomes more closely related to transparency, accountability and legitimacy and requires some form of validation. One could expect that companies committed to sustainability are more motivated to evaluate their philanthropic expenditure and measure their impact on several dimensions. Next to this, if philanthropy is to become a strategic activity, the firm itself will have a need to monitor the impact of its activities. Measuring the business and social impact of corporate philanthropy enables firms to optimize the efficiency of money spent both for their bottom line and for society.

This paper contributes to existing research by examining whether firms committed to sustainability measure the impact of their corporate philanthropy along different dimensions and how these measurement practices differ across firms. We describe and explore actual impact measurement of corporate philanthropy based on longitudinal cross-sectional, cross-national empirical data of over 500 firms included in the Dow Jones Sustainability Index (DJSI)¹⁷. We first describe impact measurement behaviour related to philanthropic activities by answering the

¹⁷ The Dow Jones Sustainability Index is a global index tracking the financial performance of the leading sustainability-driven companies worldwide.

questions: “Do DJSI firms actually measure the impact of their corporate philanthropy” and “What impact(s) do they measure?” Our database contains data from DJSI firms for the years 2005, 2006 and 2007, describing whether or not firms measure the impact of their corporate philanthropy. We distinguish impact measurement along three dimensions: business, social, and reputation. Based on institutional theory, legitimacy theory, and the accounting literature, it is expected that the variables company size, philanthropic expenditure, industry specification and region will influence whether or not firms measure the impact of its corporate philanthropy. The influence of the drivers, as specified above, is explored and the framework is tested using logistic regression. Finally, the results are presented and discussed, and the implications for theory, practice and future research are described and conclusions are drafted.

4.2 Corporate philanthropy and impact measurement

The term CSR expresses a situation in which firms not only strive for economic gains but in which they adopt a broader view and take responsibility for their impact on society (Carroll, 1991). Corporate philanthropy is regarded as a form of Corporate Social Responsibility (CSR) and, thus, as a measure of a firm’s Corporate Social Performance (CSP) (Carroll, 1979, 1991; Seifert et al., 2004, Brammer & Millington, 2008). The primary forms of corporate philanthropy are cash donations given directly to charities; in-kind gifts of firms products, services, use of facilities, or managerial expertise; and cash donations given indirectly to charities through a corporate-sponsored foundation, which is a legal entity separate from the firm (Seifert et al., 2003). Prior research tried, among others, to identify factors that determine how much a firm gives (Hess et al., 2002; Seifert et al., 2003; Aguilera et al., 2007), how strategic firms are in their giving behaviour (Saia et al., 2003), what are the challenges related to globalization of philanthropy (Simon, 1995; Logsdon and Wood, 2002) and the financial performance of philanthropic giving (Fry et al., 1982; Porter & Kramer, 2002; Orlitzky et al., 2003; Godfrey, 2005).

The link between Corporate Social Performance (CSP), including philanthropic expenditure, and Corporate Financial Performance (CFP) is one of the most

researched but least understood relationship in the field of business and society (Wood & Jones, 1995; Waddock & Graves, 1997; Seifert et al., 2004). For a long time, the relationship between CSP and CFP showed inconsistent results: some researchers concluded that CSP and CFP are positively related, while others reported a negative correlation (Wood & Jones, 1995; Waddock & Graves, 1997; McWilliams & Siegel, 2000; Margolis & Walsh, 2001, 2003; Dentchev, 2004). In 2007, Margolis et al. collected and studied 167 published studies that empirically examined the relationship between CSP and CFP, they concluded that the findings suggest a positive association overall, while very little evidence of a negative association was found. The authors conclude that future research on efforts to find a link should be redirected to better understand why firms pursue CSP, the mechanism connecting prior CFP to subsequent CSP, and how firms manage the process of pursuing both CSP and CFP simultaneously. The study brings closure to the long running debate about whether it is in an organization's financial best interest to engage in CSR; thereby leaving questions about what impacts those corporate actions have on society, unexplored (Margolish et al., 2007).

The trend of CSR, including corporate philanthropy, urges firms to assess their impact across environmental, social and economic dimensions and to incorporate those impacts into management decisions (Elkington, 1999; Willard, 2002; Maas & Bouma, 2005). In general, management decisions are based on available information about the topic being considered. Provision of such information in financial terms is traditionally the central topic of accounting. However, it is claimed that social and environmental impacts are often not expressed by the market, do not have a market value, are not captured by conventional accounting methods and are therefore fundamentally ignored by firms (Schaltegger & Burritt, 2000).

In business, generally accepted principles of accounting and an international legal infrastructure are established to help measure and report on financial returns. For social impact measurement comparable standards do not yet exist. As a result from this lack of common practice around social impact measurement, many firms only measure business impact and financial results, even when social goals are the primary driver for operational choices (Elkington, 1999; Schaltegger & Burritt,

2000; Margolis & Walsh, 2003; Clark et al., 2004). The studies of Carrigan (1997) and Tokarsky (1999) show that this is even the case for corporate philanthropy. Although the primary beneficiary of any corporate philanthropic action is society, 75 percent of firms do not monitor the social impact of their philanthropic work.

Impact measurement methods, like social impact measurement, capture diverse forms of ‘accounts which go beyond the economic’ (Gray, 2002). Impact measurement is necessary for internal decision making but it can also be encouraged, or even forced by, institutional and stakeholder pressures. More specifically, measuring impact and disclosing information on impact can be used for legitimacy, stakeholder management and internal decision making.

Wood (1991) presents three principles linking business strategy to societal expectations: legitimacy at the institutional level, public responsibility at the organizational level and individual choices at the executive level. Measuring impact of corporate philanthropy fits with those three principles. Firms can measure *social impact*, what is the added value of corporate philanthropy for society? This includes, among others, job creation, taxes, local purchasing, but also reduced child labour through schooling programs for employees and their families. Firms can measure indirect business impact by measuring *impact on reputation and stakeholder satisfaction*. This includes, among others, increased trust, public image, and name recognition. Firms can measure direct *business impact*; what is the added value of corporate philanthropy for the company? Increased sales might be an example.

The impacts of corporate philanthropy on different dimensions are often interrelated. One of the basic ideas of strategic philanthropy is that in the end, both directly and indirectly, business impact as well as social impact will benefit the firms’ bottom line. In this paper we describe, based on empirical data, whether DJSI firms measure the impact of corporate philanthropy, and, if so, on which dimensions impacts are measured. This paper is to be situated among the few descriptive approaches in the business and society literature.

4.3 Drivers for impact measurement of philanthropic activities

Based on institutional theory one would expect that impact measurement is influenced by several drivers on the institutional level. However, next to institutional pressures, the unique environment, interests and activities of firms’ are also likely to have influence (Jones, 1995; McWilliams & Siegel, 2001; Shropshire & Hillman, 2007). Next to these factors, the accounting literature also stresses the potential influence of external factors on measurement behaviour.

With the accounting literature several studies attempt to identify influential factors on the impact measurement behaviour of firms, such as human factors (Gray, 1988; Granlund, 2001), institutional factors (Gray, 1980; Guilding et al., 2000; Joshi, 2001; Hope et al., 2007), and organizational factors (Hopper & Powell, 1985; Chenhall & Langfield-Smith, 1998). This paper extends this existing research by describing whether or not firms measure the impact of their philanthropic activities along three dimensions – business, social, and reputation. The analysis is based on longitudinal cross-sectional, cross-national data from over 500 firms and builds a framework to explore the influence of several (additional) drivers on measurement of the impact of corporate philanthropy. The conceptual framework is shown in Figure 4-1.

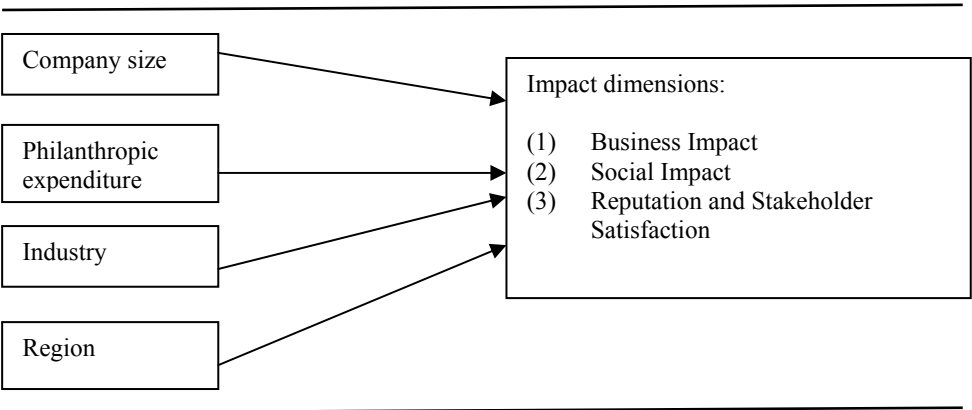


Figure 4-1: Conceptual framework

The potential influence of the different drivers is explained below.

Company size

Firstly, institutional theorists argue that large firms are more subject to legitimacy concerns because of their visibility (Meyer & Rowan, 1977). Society's expectations of larger firms are higher creating more pressure, not only to invest in activities to reduce social ills, (Margolis & Walsh, 2003) but also to be more transparent about their behaviour. Moreover, previous studies (Bruns & Waterhouse, 1975; Merchant, 1981; Guilding et al., 2000; Cinquini & Tenucci, 2007) demonstrated that larger firms are in general more willing to use sophisticated accounting methods. Based on both lines of reasoning we expect to find a positive relation between company size and whether or not firms measure the impact of corporate philanthropy.

Philanthropic Expenditure

Secondly, the amount of money spent on corporate philanthropy can increase visibility of firms. Between 1950 and 2000, firms' philanthropic contributions more than quadrupled in real terms worldwide (Caplow et al., 2001). Nowadays, thousands of businesses worldwide jointly donate billions of dollars each year to charitable causes such as education, arts and culture, human services, community improvement, medicine, science, environmental protection and others (Seifert et al., 2004). It is essential that corporate contributions are shown to provide benefits to strategic business objectives and society. If corporations are not able to show contributions and their impact, philanthropy is not only a drain on funds, but it might even damage a company's reputation (Carrigan, 1997). Literature shows that the more money is involved, the more it becomes important to manage and evaluate expenditure, investments or contributions (Carrigan, 1997; Tokarski, 1999). We expect a positive relation between the amount of corporate donations and whether or not firms measure the impact of corporate philanthropy.

Industry

Thirdly, the search for organizational legitimacy often results in similar strategies for firms in the same environment (Shropshire & Hillman, 2007). DiMaggio and Powell (1983), state that isomorphism processes often function to homogenize organizational practices through imitation, coercive pressures, or normative standards in the name of organizational legitimacy. Next to this, industry effects

on profits, competition and technology are so pervasive that they are taken for granted in the fields of finance, accounting, and strategic management. Several studies identified factors related technology and competition influencing management accounting, like impact measurement, design and use (Cinquini & Tenucci, 2007). We expect that, next to institutional, industry conditions influence whether or not firms measure the impact of corporate philanthropy.

Region

Fourthly, the extent to which firms engage in social activities is influenced by public pressures (Kolk, 2005), regulatory pressures (Davidson & Worrell, 2001), and stakeholder pressures (Margolis & Walsh, 2003). Cross-continental differences can also be seen as reflective for local and national impact measurement practices. Several studies researched the impact of location on (strategic) management accounting behaviour (Khandwalla, 1972; Cinquini & Tenucci, 2007). No studies focusing specifically on impact measurement were found. Accepting impact measurement as a specific management accounting technique, we expect that the location of firms is influential on whether or not firms measure the impact of corporate philanthropy.

4.4 Methodology

4.4.1 Data sample

The empirical data was collected by a secondary source, the Sustainability Asset Management (SAM) Group, in the period 2005 - 2007. SAM Group annually evaluates and selects firms for the Dow Jones Sustainability Indexes (DJSI). Firms listed in the DJSI are among the sustainability leaders in their industry. Firms are evaluated every year based on an online industry specific questionnaire, comprising specific criteria for the three sustainability dimensions: economics, environment and society. Beside this, firms have to provide additional documents to justify the answers. External assurance ensures that the corporate sustainability assessments are completed in accordance with the defined rules. The annual selection process and methodology are regularly verified by independent auditors. Our analysis is based on data from DJSI firms (2005: N=543, 2006: N=535, 2007: N=531).

4.4.2 Measure

In our research we use the variables: (a) measurement of the impact of corporate philanthropy, (b) company size, (c) philanthropy expenditure, (d) industry, and (e) region.

Dependent variables

Measurement of the impact of corporate philanthropy is specified along three dimensions: (1) Business Impact, (2) Social Impact, (3) Impact on Corporate Reputation and Stakeholder Satisfaction. Firms can measure impact along one or more dimensions. Our dependent variables are dichotomous.

The data on measurement of the impact of corporate philanthropy are based on a dichotomous question in the corporate sustainability assessment:

“ Does your company have a system in place to systematically measure the impact of it’s contributions in order to further improve/re-align the company’s philanthropic/social investment strategy:

- a. Business impact (e.g. product innovation)*
- b. Social impact*
- c. Impact on corporate reputation and stakeholder satisfaction”*

The answers to the question have to be sustained by providing documents, reports, or other information. External assurance evaluates, based on this information and/or reports, whether the question is answered correctly.

Independent variables

Company size. Company size is classified by the company's value on the stock market: the number of shares it has outstanding multiplied by the share price. This is known as market capitalization, or cap size. In the database three company sizes are specified: (1) Large Cap firms have market values of greater than \$8 billion, (2) Mid Cap firms have market values in the \$1 billion to \$8 billion range, and (3) firms with a market value below \$1 billion belong to the Small Cap index.

Philanthropic expenditure is measured as a percentage of earnings before interest and taxes (EBIT), and is subsequently specified into six categories: (1) >3%, (2) 1%-3%, (3) 0.6%-1%, (4) 0.2%-0.6%, (5) < 0.2%, and (6) unknown.

Industry. The database includes classification of each company by industry and is specified into ten categories: (1) Oil & Gas, (2) Technology, (3) Financials, (4) Industrials, (5) Basic materials, (6) Utilities, (7) Consumer services, (8) Consumer goods, (9) Telecommunications, and (10) Health care.

Region. The database provides information on the geographical location of each company and is specified into six categories: (1) North America, (2) Europe, (3) Pacific Rim (Australia and New Zealand), (4) Asia, (5) Latin America, and (6) Japan.

4.4.3 Statistical procedures

The aim of the statistical test is to analyse the significance of the influence of several predictor variables, on whether or not firms measure the impact of corporate philanthropy. Initially, the data is explored using descriptive statistics and correlation coefficients for our dependent variables (business impact, social impact, and impact on reputation and stakeholder satisfaction). Combining each of the three dependent variables with all of our four independent variables (company size, philanthropic expenditure, industry and region) using regression analysis will provide information on the relative importance of each of the individual drivers. The dichotomous nature of our dependent variables hinders us to use linear regression. The scenario, however, is ideal for logistic regression. Logistic regression is useful to test the relationship between several predictor variables and a dichotomous outcome. A good example of how to describe results of logistic regression is found in a recent article of Fortanier and Kolk (2007). In this paper a similar approach is followed to describe the results.

Logistic regression provides us with an estimate coefficient corresponding to each category of our independent variables. Such a coefficient, and its significance, has to be interpreted in reference to the reference category. As reference categories we used the category with the largest shares of observation in the original sample. The reference categories for company size, philanthropic expenditure, industry and region are respectively: large firms, 1%-3%, financials, and Europe. We investigated the joint significance of the categories of all variables, by means of a likelihood ratio test. If the resulting p-value is large ($p > .05$), we can assume that

this specific variable has no significant influence. Finally, the data is tested for multicollinearity.

4.5 Results

Table 4-1 provides descriptive statistics. It shows to what extent firms' measure the impact of their corporate philanthropy along the three dimensions, specified towards different firm sizes, different levels of philanthropic expenditure and different industries. Results are reported in percentage. For example, 327 of the DJSI firms measured the social impact of their philanthropic activities in 2007, which equals 62% of the total sample.

Social impact and impact on reputation and stakeholder satisfaction are the impacts most frequently measured by firms, both over 45 percent for all years. Table 4-1 indicates that measuring impact of corporate philanthropy increased over the years. Furthermore, it seems that differences in company size, philanthropic expenditure, industry and region influence impact measurement. Especially large firms, firms spending > 0.2% of EBIT, financial firms, and firms from Europe, measure the impact of their philanthropic activities more relative to other firms. This holds for measurement of impact along the business, social and reputation dimensions. Next to this, there seems to be a trend towards measuring impact of corporate philanthropy on more dimensions. Firms measuring impact on two dimensions increased from 18 percent in 2005 to 23 percent in 2007. Firms measuring impact on three dimensions, increased from 20 percent in 2005 to 29 percent in 2007. Nevertheless, firms not measuring impact on any dimension represent the largest group in 2005 and 2006. The correlation table gives us more information on the relationship between the different types of impact measurement.

	(1)	(2)	(3)	(1)	(2)	(3)	(1)	(2)	(3)
	2005 (%)			2006 (%)			2007 (%)		
Total	27	46	46	33	54	54	38	62	58
By Company Size:									
Large	22	37	37	28	44	44	31	50	47
Mid	5	9	8	5	9	9	7	11	9
Small	1	1	1	0	1	1	0	1	1
By Philanthropic expenditure:									
>3%	1	2	2	2	4	3	11	17	16
1%≤x≤3%	7	14	13	11	16	15	7	11	11
0.6%≤x≤1%	5	8	9	6	11	12	12	18	16
0.2%≤x≤0.6%	8	12	11	8	14	14	5	9	10
<0.2%	3	5	5	4	7	7	0	0	0
unknown	3	4	5	1	1	2	2	5	4
By Industry									
Financials	5	9	8	6	11	11	8	14	12
Technology	2	3	2	2	3	2	2	4	3
Oil&Gas	2	3	3	2	3	3	2	3	3
Industrials	3	5	6	5	7	8	6	9	9
Basic Materials	2	5	5	2	6	5	4	5	6
Utilities	4	5	6	5	6	6	6	7	7
Consumer services	3	6	6	4	7	6	4	7	6
Consumer goods	4	6	6	5	7	7	5	7	7
Telecommunications	2	2	2	1	2	3	2	3	3
Health Care	1	3	2	2	2	2	1	3	3
By region									
North America	6	12	11	7	13	12	9	16	14
Europe	15	24	23	18	27	27	20	31	29
Pacific	1	2	3	1	3	4	2	2	3
Asia	1	1	1	1	1	1	1	2	1
Latin America	1	1	1	1	1	1	1	2	1
Japan	4	6	7	5	8	9	5	9	10
Measurement on different dimensions:									
0 dimensions		38			29			24	
1 dimension		21			21			21	
2 dimensions		18			23			23	
3 dimensions		20			25			29	

Note: (1) Business Impact, (2) Social Impact, and (3) Impact on Reputation and Stakeholder Satisfaction.

Table 4-1: Descriptive statistics

Table 4-2 shows that correlation coefficients between the four dependent variables are all significant.

	(1)			(2)		
	2005	2006	2007	2005	2006	2007
(1) Business Impact	1	1	1			
(2) Social Impact	0.56*	0.48*	0.47*	1	1	1
(3) Impact on Reputations and Stakeholder Satisfaction	0.47*	0.46*	0.46*	0.57*	0.54*	0.51*

* $p < .05$, ** $p < .01$, *** $p < .001$

Note: (1) Business impact, (2) social impact

Table 4-2: Correlation table (dependent variables)

The results of the logistic regression analysis are shown in table 4-3a,b,c. The Tables 4-3a,b,c show the coefficients (B), their standard error (SE) and the indicator of the change in odds resulting from a unit change in the predictor (ExpB) for all the categories within the categorical variables (philanthropic expenditure, company size, industry and region) respectively for the years 2005, 2006 and 2007.

	(1)		(2)		(3)	
	2005 (N=543)		2005 (N=543)		2005 (N=543)	
	<i>B (SE)</i>	<i>ExpB</i>	<i>B (SE)</i>	<i>ExpB</i>	<i>B (SE)</i>	<i>ExpB</i>
Constant	-0.77* (0.32)	0.46	0.48 (0.30)	1.61	0.29 (0.30)	1.33
Company size (ref. cat.: Large Cap)						
Mid Cap	-0.66* (0.26)	0.52	-0.91*** (0.23)	0.40	-1.07*** (0.24)	0.35
Small Cap	-0.60 (0.67)	0.55	-1.17 (0.62)	0.31	-0.74 (0.57)	0.48
Philanthropic expenditure (ref. cat.: 1%-3%)						
> 3%	-0.19 (0.54)	0.83	0.00 (0.50)	1.00	0.01 (0.50)	1.01
0.6% ≤ x ≤ 1%	0.15 (0.32)	1.16	-0.08 (0.31)	0.92	0.22 (0.31)	1.25
0.2% ≤ x ≤ 0.6%	0.13 (0.29)	1.14	-0.14 (0.28)	0.87	-0.43 (0.27)	0.65
< 0.2%	-0.80* (0.36)	0.45	-1.17** (0.32)	0.31	-1.04** (0.31)	0.36
unknown	-0.30 (0.35)	0.74	-0.85*** (0.32)	0.43	-0.62 (0.32)	0.54
Industry (ref. cat.: Financials)						
Oil & Gas	0.51 (0.48)	1.66	0.62 (0.49)	1.87	0.49 (0.46)	1.63
Technology	0.47 (0.45)	1.59	0.11 (0.43)	1.11	-0.35 (0.43)	0.71
Industrials	-0.27 (0.36)	0.76	-0.75* (0.32)	0.47	-0.32 (0.31)	0.73
Basic Materials	-0.21 (0.45)	0.81	0.48 (0.39)	1.62	0.73** (0.39)	2.07
Utilities	1.26* (0.40)	3.53	0.55 (0.39)	1.74	1.31 (0.40)	3.70
Consumer services	0.17 (0.38)	1.18	0.63 (0.35)	1.88	0.41 (0.35)	1.51
Consumer goods	0.35 (0.37)	1.41	0.17 (0.34)	1.19	0.36 (0.34)	1.37
Telecommunications	0.92 (0.53)	2.50	0.27 (0.53)	1.32	0.32 (0.53)	1.44
Health Care	0.15 (0.51)	1.16	0.16 (0.46)	1.18	-0.46 (0.48)	0.63
Region (ref. cat.: Europe)						
North America	-0.37 (0.28)	0.69	0.16 (0.26)	1.17	0.05 (0.26)	1.05
Pacific	-0.04 (0.46)	0.96	-0.45 (0.44)	0.64	0.07 (0.43)	1.08
Asia	0.05 (0.64)	1.05	-1.05 (0.67)	0.35	-0.20 (0.61)	0.82
Latin America	0.09 (0.80)	1.09	0.88 (0.86)	2.4	-0.31 (0.77)	0.74
Japan	-0.41 (0.31)	0.67	-0.61* (0.29)	0.54	-0.08 (0.28)	0.92
χ^2 (22)	40.76		92.17		78.68	
-2 Log Likelihood	597.36		657.49		670.34	
Pseudo R^2 (Nagelkerke)	0.11		0.21		0.18	

* $p < .05$, ** $p < .01$, *** $p < .001$

Note: (1) Business Impact, (2) Social Impact, and (3) Impact on Reputation and Stakeholder Satisfaction.
Table 4-3a: Logistic regression results (2005)

	(1)		(2)		(3)	
	2006 (N=535)		2006 (N=535)		2006 (N=535)	
	<i>B (SE)</i>	<i>ExpB</i>	<i>B (SE)</i>	<i>ExpB</i>	<i>B (SE)</i>	<i>ExpB</i>
Constant	1.10*** (0.31)	3.00	0.24 (0.31)	0.00	0.89** (0.30)	2.43
Company size (ref. cat.: Large Cap)						
Mid cap	-1.12*** (0.24)	0.33	-1.03*** (0.26)*	0.36	-0.98*** (0.23)	0.38
Small Cap	-1.42* (0.65)	0.24	-2.47 (1.10)	0.09	-1.13 (0.60)	0.32
Philanthropic expenditure (ref. cat.: 1%-3%)						
> 3%	-0.08 (0.48)	0.93	-0.26 (0.46)	0.77	-0.45 (0.45)	0.64
0.6% ≤ x ≤ 1%	-0.20 (0.31)	0.82	-0.61* (0.30)	0.55	0.17 (0.31)	1.19
0.2% ≤ x ≤ 0.6%	-0.31 (0.29)	0.74	-0.68* (0.28)	0.51	-0.30 (0.28)	0.74
<0.2%	-1.32*** (0.30)	0.27	-1.43*** (0.33)	0.24	-1.22*** (0.30)	0.29
unknown	-2.03*** (0.46)	0.13	-1.96*** (0.54)	0.14	-1.63*** (0.43)	0.20
Industry (ref. cat.: Financials)						
Technology	0.24 (0.49)	1.27	0.41 (0.48)	1.51	0.24 (0.49)	1.28
Oil & Gas	0.18 (0.48)	1.20	0.55 (0.48)	1.74	-0.57 (0.46)	0.57
Industrials	-0.41 (0.32)	0.67	0.18 (0.34)	1.19	-0.26 (0.31)	0.78
Basic Materials	0.76 (0.43)	2.14	0.09 (0.43)	1.09	0.20 (0.40)	1.22
Utilities	0.66 (0.41)	1.93	1.28** (0.40)	3.60	0.90* (0.41)	2.45
Consumer services	0.30 (0.36)	1.36	0.40 (0.36)	1.50	-0.09 (0.35)	0.92
Consumer goods	-0.02 (0.35)	0.98	0.28 (0.36)	1.33	0.06 (0.34)	1.06
Telecommunications	-0.04 (0.56)	0.96	0.14 (0.56)	1.15	0.95 (0.64)	2.58
Health Care	-0.18 (0.54)	0.84	0.22 (0.55)	1.24	-0.25 (0.52)	0.78
Region (ref. cat.: Europe)						
North America	0.13 (0.29)	1.14	-0.60* (0.28)	0.55	-0.01 (0.28)	0.99
Pacific	-0.52 (0.43)	0.59	-0.64 (0.47)	0.53	0.32 (0.44)	1.37
Asia	-1.82* (0.76)	0.16	-0.64 (0.71)	0.53	0.41 (0.75)	1.51
Latin America	-0.52 (0.62)	0.60	-1.12 (0.6)	0.33	-1.21 (0.61)	0.30
Japan	-0.61* (0.28)	0.54	-0.64* (0.29)	0.53	-0.27* (0.28)	0.77
χ^2 (24)	114.92		75.41		98.98	
-2 Log Likelihood	625.44		604.60		641.62	
Pseudo R^2 (Nagelkerke)	0.26		0.18		0.23	

* $p < .05$, ** $p < .01$, *** $p < .001$

Note: (1)Business Impact, (2) Social Impact, and (3) Impact on Reputation and Stakeholder Satisfaction.
Table 4-3b: Logistic regression results (2006)

	(1)		(2)		(3)	
	2007 (N=531)		2007 (N=531)		2007 (N=531)	
	<i>B (SE)</i>	<i>ExpB</i>	<i>B (SE)</i>	<i>ExpB</i>	<i>B (SE)</i>	<i>ExpB</i>
Constant	-0.22 (0.31)	0.81	1.14*** (0.33)	3.14	0.92** (0.32)	2.50
Company size (ref. cat.: Large Cap)						
Mid Cap	-0.56* (0.26)	0.57	-0.75** (0.25)	0.47	-0.87*** (0.24)	0.42
Small Cap	-0.91 (0.89)	0.40	-1.28 (0.83)	0.28	-0.37 (0.78)	0.69
Philanthropic expenditure (ref. cat.: 1%-3%)						
> 3%	0.25 (0.30)	1.29	0.47 (0.34)	1.60	0.01 (0.33)	1.01
0.6% ≤ x ≤ 1%	0.02 (0.29)	1.02	-0.06 (0.31)	0.94	-0.48 (0.30)	0.62
0.2% ≤ x ≤ 0.6%	-0.94** (0.33)	0.39	-0.95** (0.32)	0.39	-0.86** (0.32)	0.43
<0.2%	- (0.41)	-	- (0.38)	-	- (0.37)	-
unknown	-1.17** (0.41)	0.31	-1.14** (0.38)	1.60	-1.22** (0.37)	0.30
Industry (ref. cat.: Financials)						
Technology	0.88 (0.48)	2.40	0.09 (0.52)	1.10	0.31 (0.49)	1.36
Oil & Gas	-0.42 (0.48)	0.66	0.01 (0.46)	1.01	-0.77 (0.43)	0.46
Industrials	0.08 (0.32)	1.09	-0.57 (0.32)	0.57	-0.29 (0.30)	0.75
Basic Materials	0.36 (0.39)	1.44	-0.06 (0.41)	0.95	0.55 (0.40)	1.73
Utilities	1.43*** (0.41)	4.18	0.75 (0.49)	2.12	1.57** (0.50)	4.78
Consumer services	0.42 (0.36)	1.53	0.39 (0.38)	1.48	0.07 (0.35)	1.07
Consumer goods	0.03 (0.34)	1.03	-0.62 (0.35)	0.54	-0.15 (0.34)	0.87
Telecommunications	0.40 (0.52)	1.49	-0.07 (0.55)	0.93	1.67* (0.71)	5.32
Health Care	-0.03 (0.53)	0.97	-0.33 (0.50)	0.72	0.06 (0.48)	1.06
Region (ref. cat.: Europe)						
North America	-0.18 (0.26)	0.83	0.29 (0.28)	1.34	0.13 (0.27)	1.14
Pacific	-0.46 (0.43)	0.63	-1.39** (0.43)	0.25	-0.65 (0.42)	0.52
Asia	-0.82 (0.72)	0.44	0.36 (0.67)	1.43	-1.26 (0.67)	0.29
Latin America	0.20 (0.72)	1.22	0.21 (0.47)	1.02	-0.59 (0.71)	0.55
Japan	-0.63* (0.30)	0.53	-0.57* (0.28)	0.57	0.03 (0.28)	1.03
χ^2 (24)	68.15		96.07		80.38	
-2 Log Likelihood	635.32		613.16		644.54	
Pseudo R^2 (Nagelkerke)	0.16		0.23		0.19	

* $p < .05$, ** $p < .01$, *** $p < .001$

Note: (1) Business Impact, (2) Social Impact, and (3) Impact on Reputation and Stakeholder Satisfaction.
Table 4-3c: Logistic regression results (2007)

The results for our first model, measuring business impact of corporate philanthropy, indicate that Mid Cap firms and firms spending $< 0.2\%$ of EBIT on philanthropy measure relatively less often the business impact of their donations. In the years 2005 and 2007, utility firms measure business impacts of corporate philanthropy more often compared to the financial industry firms. In 2006, Small Cap firms, Japanese and Asian firms measured relatively less frequently the business impact of their donations compared to the reference categories. For Japanese firms the same results are found in 2007.

In our second model, measuring social impact, one or more categories are significant. The results indicate furthermore that Mid Cap firms and firms spending $< 0.2\%$ of EBIT on philanthropy measure the social impact of their donations relatively less often. In 2005, industrial and Japanese firm's measured less frequently the social impact of their donations compared to financial firms. In 2006, utilities measured relatively more often the social impact of their philanthropic donations while North American and Japanese firms measured relatively less often the social impact of their donations. In 2007, firms from the Pacific and Japanese firms measured relatively less frequently the social impact of their donations

For the third model, which measures impact on reputation and stakeholder satisfaction, the results show that also here especially company size and philanthropic expenditure are significantly explaining the diversity in impact measuring. For all years, Mid Cap firms and firms spending $< 0.2\%$ of EBIT on philanthropy measure relatively less frequently the reputation impact of their donations.

In 2005, basic material firms measure relatively more often the reputation impact of their donation. In 2006, utility firms measure relatively more frequently the reputation impact of their donations, while Japanese firms measure relatively less often their reputation impact of their donations. In 2007, utilities and telecommunication firms measure relatively more frequently the reputation impact of their donations.

Overall, we can say that company size and philanthropic expenditure are significantly influential on measurement behaviour of firms in all years. Industry and region are also significantly influential but to a lesser extend, and not for all of our three models. The statistics tell us whether the coefficient is significant in relation to the reference category, and not whether the categorical variables as a whole are significant in explaining variance in the dependent variable. The results of the likelihood test are shown in table 4-4.

Variables (<i>df</i>)	(1)	(2)	(3)	(1)	(2)	(3)	(1)	(2)	(3)
	2005			2006			2007		
Company size	9.9*	20.4**	26.0**	24.7**	37.9**	38.0**	10.5*	25.7**	30.3**
(2)									
Philanthropic expenditure	10.5*	39.9**	25.8**	33.7**	64.4**	54.4**	19.1**	29.6**	25.2**
(4)									
Industry (9)	20.4*	33.0**	28.9*	12.2	19.9*	19.8*	28.5*	22.3*	32.5**
Region (3)	0.7	14.7*	2.8	1.44	13.7*	2.9	7.7	21.4**	3.1

* $p < .05$, ** $p < .001$

Note: (1) Business Impact, (2) Social Impact, and (3) Impact on Reputation and Stakeholder Satisfaction.

Table 4-4: Likelihood tests (chi-square statistics: X^2)

Finally we tested for collinearity. High levels of collinearity increase the probability that a good predictor of the outcome will be found non-significant. Menard (1995) suggests that a tolerance value less than 0.10 almost certainly indicate a collinearity problem. Meyers (1990) suggests that a VIF value greater than 10 is cause for concern. In our data we did not find critical tolerance levels (lowest tolerance level is 0.80) or critical VIF values (highest VIF level is 1.30).

4.6 Discussion

The purpose of this study was to investigate whether or not DJSI firms measure the impact of corporate philanthropy along three dimensions – business, social, and reputation - and the potential influence of several variables on this impact measurement. Of the dozens of empirical studies on corporate philanthropy and impact measurement of firms over the last fifteen years, relatively few have addressed whether and what impact firms measure related to philanthropic activities. We have contributed to the body of research on corporate philanthropy and impact measurement by answering our research questions “Do DJSI firms

actually measure the impact of their corporate philanthropy?” and “What impact(s) do they measure?”. Moreover, we used longitudinal empirical cross-sectional cross-national data from over 500 DJSI firms which is rarely done in studies on impact measurement of corporate philanthropy.

The descriptive statistics show that most of the firms indeed measure impact of corporate philanthropy, 62 percent in 2005 to 76 percent in 2007. Moreover, more than half of the firms measure in 2006 and 2007 on two or more dimensions of impact. Over the years, an increasing percentage of firms measure the impact of corporate philanthropy on one or more dimensions. Social impact of corporate philanthropy is most often measured, 46 percent in 2005 to 62 percent in 2007. These findings are meaningful because Clark et al. (2004), Margolish et al. (2003), and Schaltegger and Burrit (2000) point to a lack of common practice around social impact measurement. Consequently, many firms only measure business impact and financial results even when social goals are the primary driver for operational choices. However, only two empirical studies describe actual measurement behavior. Our result show that many DJSI actually measure social impact.

Another contribution of this research is the analysis of potential drivers for impact measurement of philanthropic activities. Although some previous studies did analyze the influence of several factors on corporate philanthropy or on impact measurement, the influence of various factors on the impact measurement of corporate philanthropy has not been analyzed before. We developed a framework which includes several control variables that can provide some insights in impact measurement of corporate philanthropy. We tested our framework using logistic regression.

We explored the relationship between the independent variables philanthropic expenditure, company size, region and industry and the dependent variable impact measurement of corporate philanthropy. We found that company size and philanthropic expenditure are significantly related to impact measurement along business, social and reputation dimensions. The independent variable industry is also for all years significantly related to impact measurement but to a lesser extent

and not along all impact measurement dimensions. The independent variable region is for all years significant for explaining impact measurement along the social dimension, and in 2006 along all dimensions but also to a lesser extent compared to firm size and philanthropic expenditure.

Larger firms measure impact of their philanthropic activities more frequently than smaller firms. Firms spending less than 0.2 % of their EBIT on philanthropy do measure impact compared to firms spending relatively more on philanthropy less often. For region and industry we find a significant relation to impact measurement of corporate philanthropy. Firms from the utility sector more often measure for business impact and impact on reputation compared to financial firms. Japanese firms measure less often as compared to European firms. Although the potential influence of those variables on impact measurement of corporate philanthropy specifically has not been researched before, we did expect a relationship based on the accounting literature (Khandwalla, 1972; Bruns & Waterhouse, 1975; Merchant, 1981; Guilding et al., 2000; Cinquini & Tenucci, 2007). The descriptive statistics indicate that relatively large firms, financial firms, firms spending > 0.6% (of EBIT), and firms from Europe and North America do measure the impact of their corporate philanthropy more relative to smaller firms from other regions and other industries, spending a smaller amount on philanthropy.

4.7 Limitations and directions for future research

This study suffers from several limitations brought about by the content of the database used in this study. First, our sample selection makes it difficult to generalize the results. Although the firms in our sample varied across nations, across industries and across company size, our firms are all included in the Dow Jones Sustainability Index (DJSI). Those firms are, according to DJSI, among the sustainability leaders in their industries, and are therefore likely to be more involved in corporate philanthropy in general as well as more likely to measure the impact of their corporate philanthropy. Future research should aim to include a more general sample of firms.

Secondly, our study shows whether firms measure impact of corporate philanthropy and also on what dimension firms measure impact. However, we do not have information about the measurements themselves; “Which indicators do firms actually measure when they measure social impact?”. Next to this it would be interesting to know what kind of measurement methods or systems are being used by the firms. Future research could add to the results of this study by collecting additional information on the measurements and the measurement tools used by firms.

Thirdly, we did not include the internal organisation of corporate philanthropy in the firms. This has been done in Carrigan’s (1997) study, however the study did not linked internal organisation specifically to impact measurement of corporate philanthropy. Future research could analyze whether the organizational structure of corporate philanthropy is influential or even decisive for impact measurement of those activities.

Finally, we did not collect information on motives for corporate philanthropy. Several studies did collect information on the motives for corporate philanthropy (Fry et al., 1982; Godfrey, 2005; Meijer et al., 2006) but the link between motives and impact measurement of corporate philanthropy has not yet been analysed.

4.8 Conclusion

In sum, this study makes two contributions to management, business, and society literature. First, we extend previous research on corporate philanthropy by describing impact measurement of corporate philanthropy based on a large longitudinal, cross-national, cross-sectional data sample. Previous research indicated that, while no standards for social impact measurement exist, firms measure mainly business impact and financial results even when social goals are the primary driver for operational choices. However, the results in this study show that firms actually do measure impact of their corporate philanthropy, where social impact is most often measured. Nevertheless, we should keep in mind that our data sample includes DJSI companies who are among the sustainability leaders in their industries. These firms are often more involved in corporate philanthropy and in

impact measurement of corporate philanthropy. Secondly, by using information from institutional theory, legitimacy theory, and the accounting literature, this study expands frameworks previously used to explore impact measurement behavior. We explored the significance of several drivers on impact measurement of corporate philanthropy. Our results indicate that especially smaller firms and firms spending $< 0.2\%$ of EBIT measure relatively less often the impact of corporate philanthropy.

Measuring the impact of corporate philanthropy on several dimensions might enable companies to increase the efficiency of their money spend on philanthropy both for the bottom line as well as for society. This could inspire managers to actually measure their impact of corporate philanthropy, to incorporate the results into decisions and to realign their philanthropic strategy. Although our results show that in 2007 76 percent of the firms in the DJSI measure the impact of corporate philanthropy along one or more dimensions, still 24 percent of the DJSI firms do not measure for impact at all. Because DJSI firms are more or less committed to sustainability, we expect that the figures for companies not listed in sustainability indexes will be much smaller. Companies need to adapt their strategy as well as their accounting systems to measure for several types of impact of corporate philanthropy. It might be helpful for those firms to learn that some firms already do measure for impact of corporate philanthropy. The results are useful for researchers to build upon. However, future research focusing on motives, impact measurement and effects of corporate philanthropy is needed.

Chapter 5

Social Impact of the Netherlands Hearts Foundation: A Case Study

Abstract

Due to decreased public trust and increased demand for accountability, non-profit organisations have growing interest in demonstrating the actual impact of their work. A wide range of methodologies to measure social impact is developed by scientists and practitioners. Existing methodologies, although, mainly provide directions to *what* to measure and not *how* to measure impact. In this paper the focus is on actual social impact measurement; the social impact of the Netherlands Heart Foundations (NHF) is measured by using triangulation, a combination of qualitative and quantitative analysis. During interviews and discussion sessions the potential social impact of the NHF, in terms of indicators and amounts, is discussed. The impact categories are (1) impact on social costs, (2) impact of life expectation, and (3) impact on quality of life. All interviewees expected that there is a positive impact. The NHF however, wanted to sustain these results with quantitative data. A costs and benefit study is performed to assess the developments in the social burden of AMIs in the Netherlands for the period 1980-2005. The social costs are calculated by taking the sum of the direct health care costs, medical treatment, indirect non-health care costs, and the productivity losses. The social benefits related to increased quality of life and life expectancy after an AMI are calculated by using/ utilizing monetized DALYs. The social impact assessment of the NHF on AMI shows a positive result.

This chapter is based upon:

Maas, K.E.H., Booijink, P.E, Burger, P., Commandeur, H.R. (2009). De Maatschappelijke Impact van de Nederlandse Hartstichting, *ESB*, 94(4557), 212-215 (in Dutch)

Maas, K.E.H., Booijink, P.E, Burger, P., (2008) *Impact assessment of the NHS on the economic burden of AMI under the working population 1980-2005 in the Netherlands*, Rotterdam

5.1 Introduction

Public trust in non-profit organisation in general has decreased and a demand for increased accountability and transparency of these organisations has risen (Young et al. 1996; Hoefer, 2000; Ebrahim, 2003). Public scandals like excessive remunerations, inefficient expenditures of donations, usage of the money from governmental subsidies for trials against the same government are only a few examples of topics that caused public criticism and distrust, resulting in the loss of volunteers and donors.

Consequently, there is a growing interest in the development of tools that enable non-profit organisations to demonstrate the wider (social) impact of their work (Yates, 2004). Impact assessment cannot solely be used as a means to improve both internal and external accountability, but also as a marketing tool and strategy instrument. Until now, impact assessment has been mainly used in the field of Health Impact Assessment (HIA) and Environmental Impact Assessment (EIA) (Muttamara, 1996; Lewis, 2003; Wood, 2007). Within the field of HIA, the impact of governmental policies, programs and projects on public health are estimated. EIA measures the impact of governmental policies, programs and projects on the environment.

In this paper the social impact of a specific Dutch nonprofit organization, the Netherlands Heart Foundations (NHF), is measured¹⁸. The steps in the measurement process are based on five research questions:

1. What is social impact?
2. What is the potential social impact of the Netherlands Heart Foundation?
3. How can we translate this social impact into measurable indicators?
4. How can we quantify these indicators of social impact?
5. What is the social impact of the Netherlands Heart Foundation?

¹⁸ This paper describes the first results of an ongoing project “Social impact of the Netherlands Heart Foundation”. The time frame of the project is September 2006 – September 2010.

In this paper the developments in performance measurement in the nonprofit sector are firstly discussed. Secondly, the approach used and the steps, taken to measure the social impact of the NHF, are presented. The use of triangulation to assess the social impact of the NHF is explained. Thirdly, the results of our qualitative analysis are shown. Fourthly, the results of the quantitative analysis are presented. Finally, conclusions are drafted, limitations of the study are described and suggestions for future research are made.

5.2 Performance measurement in the non-profit sector

Performance measurement and reporting has always been important for for-profit organisations. However, during the last decades performance measurement has become a major issue in the nonprofit sector as well. One of the reasons of this increased interest in performance measurement in the non-profit sector stems from accountability. The most concise description of accountability would be: ‘the obligation to explain and justify conduct’ (Bovens, 2007, p. 450). Accountability is a process of public disclosure about results and the way the organization contributes to society. It is about reporting the real achievements instead of the intentions an organization has (Berman, 2006).

Literature provides a diversity of performance concepts that can be used for accountability purposes (Burger, 2008). Some of the concepts used as measures of performance are effectiveness, efficiency, activity and capacity (Herman & Renz, 1997; Sawhill & Williamson, 2001; Moxham & Boaden, 2007). Porter (1999) relates the concept of performance of philanthropic foundations to creating social value; activities that generate social benefits that go beyond the mere purchasing power of their required expenditures. Porter (1999) speaks about superior performance when a greater social value per dollar spend is achieved, as compared to any other organization with the same objective; in this way performance is related to effectiveness and value creation. Value is a relative and subjective term with different meanings for different people, who can all have different ideas about desirable results (e.g. Lepak, 2007). This makes actual measurement of value difficult (see also Chapter 2 of this dissertation).

Literature on organizational effectiveness reveals a diversity of models defining effectiveness in different ways and giving directions in assessing effectiveness (e.g. Zammuto, 1982; Seashore, 1983). Firstly, *the goal-attainment approach* is a frequently used approach. The goal-attainment approach is based on the assumption that organizations' goals are identifiable and unambiguous (Forbes, 1998). An organisations' effectiveness can then be represented by the attainment or progress towards the organizational goals. Nonprofit organisations however, often do not have clearly defined goals or have intangible goals. Next to this, data to assess whether the goals have been accomplished may be hard to collect. Secondly, *the system resource approach* defines effectiveness as viability or survival (Forbes, 1998). An organization is referred to as effective when it has the ability to exploit resources from its environment and to sustain its own functioning. Thirdly, there is *the multiple constituency model*, which is often regarded as a modification of the goal-attainment approach. The model focuses on constituent definitions of effectiveness. It recognizes that an organization comprises multiple stakeholders or constituents with different expectations and evaluation criteria (Herman & Renz, 1998). Different constituents have different goals and this should be taken into account when assessing and reporting on effectiveness.

All three models of assessing organizational effectiveness of nonprofit organisations solely give directions to *what* to measure and not *how* to measure effectiveness. Definitions of effectiveness vary for different stakeholders and therefore require a multitude of criteria. Empirical research commonly uses criteria of effectiveness such as adaptability, flexibility, (fundraising) efficiency, productivity, customer satisfaction and public support (Zammuto, 1982; Ritchie & Kolodinsky, 2003).

Among charitable nonprofits a growing interest can be observed in developing tools that enable them to demonstrate the wider social impact of their work (Yates, 2004). The focus of nonprofits is increasingly on extending performance measurement and reporting beyond the traditional exclusive focus on financial information. Assessing the social impact of nonprofits has been suggested as a meaningful measure, enabling the assessment of the aspects of performance tied to

their social missions. Impact assessment is therefore strongly related to mission accomplishment (Sheehan, 1996). One could argue that what really determines the effectiveness of nonprofits is the extent to which missions are being achieved, and an actual impact on society is created (Herman & Renz, 1998).

Impact refers to a long-term influence on the community and the state of the environment surrounding the organization and the consequences of an organization's actions or inactions (Moss Kanter & Summers, 1987; Seeley, 1998). Impact includes intended as well as unintended effects, negative as well as positive effects, and both long and short term effects (Wainwright, 2002). Impact can be assessed at various levels including the individual, organizational, neighborhood or community, and policy level (Yates, 2004). Next to this, impact can be measured on different dimensions; economic, environmental, and social.

Difficulties in measuring social impact are numerous. Identifying causality in the relationship between a particular activity and outcome is often difficult and sometimes impossible, because the activity might be only one of the many factors affecting the outcomes (Burger, 2008). Next to this, the time frame between activity and impact might be long term (Wainwright, 2002). Unintended or unanticipated social impact is often difficult to identify (Collis et al., 2003). Next to this, existing literature emphasizes the need to develop methods and adjust frameworks for individual nonprofit organisations, rather than for the sector as a whole (e.g. Clark 2004; Yates, 2004). There is a need for a wide range of methodologies to be tailored to the requirements of different types of organisations, depending on their type, size, activities, objectives and the aspects of impact they want to measure. No single tool or method can capture the whole range of impacts, nor can it be applied to the entire voluntary sector (Collis et al., 2003). Chapter 3 of this dissertation provides an overview of the existing social impact measurement methods. The literature emphasizes describing and explaining the difficulties, instead of showing empirical research that actually measures social impact. In this paper the focus is on actual social impact measurement.

5.3 Triangulation: the use of qualitative and quantitative methods

Collis et al. (2003) make a distinction between measuring and demonstrating impact, both aspects of an impact assessment. Measuring impact has a quantitative connotation, while demonstrating impact is more qualitative. Impact measurement gives an overview of quantifiable achievements but is considered less helpful in identifying the soft outcomes and unanticipated impact. However, impact demonstration does not address the central question of efficient resource allocation (Collis et al., 2003). In this research we use qualitative methods as well as quantitative methods to measure the impact of the Netherlands Heart Foundation. In figure 5-1, the approach and techniques used to measure the social impact of the NHF are shown.

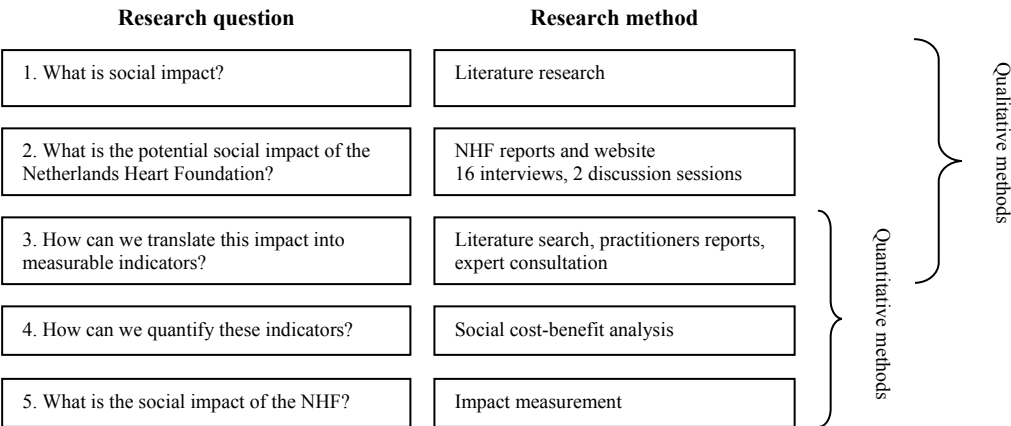


Figure 5-1: Research questions and research methods

The research questions will be answered in five steps. Different qualitative and quantitative research methods are used, such as interviews, literature research, and quantitative analysis. During the 16 interviews the potential social impact of the NHF was discussed, in terms of indicators and amounts. Based on the interview results qualitative data was gathered on the potential social impact of the NHF. The results pointed to the same direction, all the interviewees were convinced that there is a positive impact. The NHF however, wanted to sustain these results with quantitative data.

The use of multi-method research, in the form of qualitative research methods in combination with quantitative research methods, is referred to as triangulation (Campbell & Fiske, 1959 in Jick, 1979). Triangulation is defined as *the combination of methodologies in the study of the same phenomenon* (Denzin, 1978, p. 291). Denzin (1978) identifies two categories of triangulation: (a) ‘between-method’, i.e. the use of multiple methods to examine the same dimension of a research problem, and (b) ‘within-method’, i.e. the use of multiple methods to collect and interpret data. Whereas the ‘within-method’ triangulation essentially involves crosschecking for internal consistency or reliability, the between-method triangulation tests the degree of external validity (Jick, 1979, p. 603). Triangulation is not an end in itself but it can be a stimulation to improve the defining and analysis of research problems. The results of the analyses are described in the next paragraphs.

5.4 Qualitative analysis

The first step in this empirical research is to answer the question: what is social impact? Based on literature research we collected different definitions and descriptions of social impact and impact related terms¹⁹. It was decided to work with the definition from Clark et al. (2004):

“By impact we mean the portion of the total outcome that happened as a result of the activity of an organization, above and beyond what would have happened anyway”.

This definition is the only definition that actually differentiates impact from output and outcomes and is based on the so called Impact Value Chain (see figure 5-2). The impact value chain provides a framework for the measurement of the social impact of NHF. Two adaptations to the original impact value chain are made. An arrow is drawn from goal alignment back to input. While measurement in itself has no value, only when a manager uses the results for goal alignment and for strategic purposes measurement could lead to strategic maximisation of results.

¹⁹ For an overview of the definitions and terms see chapter 3 of this dissertation.

This implicates directly that this process must be iterative, and not singular. Although information is provided on what to measure, there are no guidelines about how to measure social impact. Therefore, the framework is also extended with five process steps to measure impact.

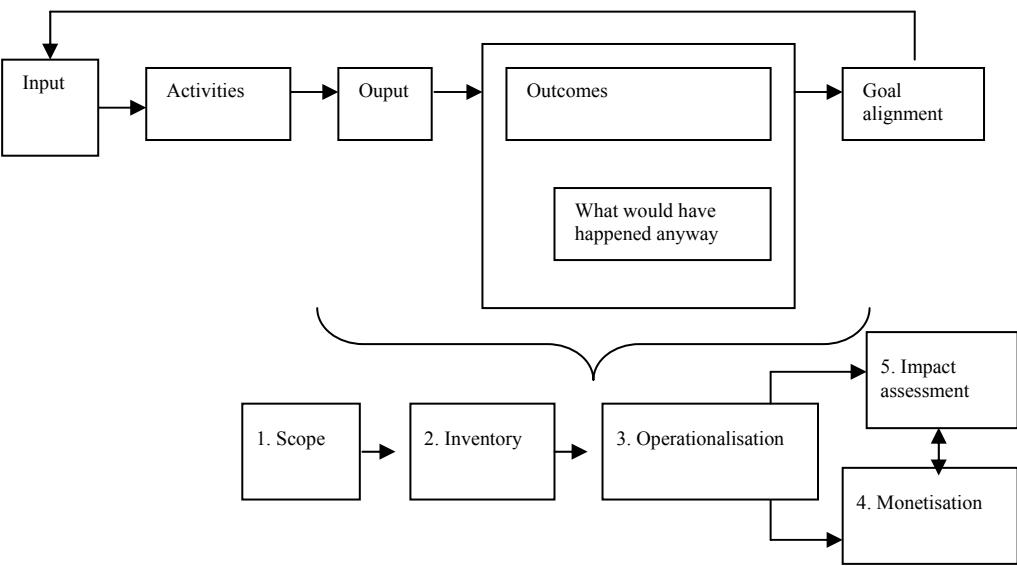


Figure 5-2: Impact value chain (adapted from Clark et al. 2004)

The second step in this empirical research is to grasp the potential social impact of the Netherlands Heart Foundation (NHF). Which activities are performed by the NHF, what are the inputs and what are the results and potential impacts of these activities? Firstly, NHF organization reports, documents and the web site are analysed. The NHF was founded in 1964 to fight against cardiovascular and heart diseases. From their total budget, 40 million Euros in 2008, the NHF invests on average 35% in research, 25% in patient care, 20% in prevention and information, and 20% in fund-raising. During the last decades, a lot of progress has been made and positive results have been achieved within the field of prevention and treatment of cardiovascular and heart diseases. Some examples of important new developments are coronary bypass surgery, thrombolytic therapy and statins. Despite these developments heart diseases are still one of the most important

causes of death in the Netherlands. In 2005 44.119 people died of cardiovascular diseases, 32% of the total deaths in the Netherlands in 2005.²⁰ Each day approximately 121 people in the Netherlands die of cardiovascular heart diseases. Within the category of cardiovascular heart diseases, stroke and the acute myocardial infarction are most prominent, causing respectively 10.326 and 9.502 deaths in 2005.

Secondly, the theory of change framework is used to draft a so-called “mind-map” that visualizes all action-reaction chains of the NHF. The theory of change framework, developed by Weiss (1972), is a tool to evaluate the effectiveness of projects or organisations by sketching the underlying assumptions about how they lead to social change. A theory of change refers to the causal processes through which change comes about as a result of a program’s strategies and actions (Weiss, 1972). It relates to how practitioners believe individual, inter-group and social systemic change happens, and how, specifically, their actions will produce (positive) results. As such, this model builds on perception and believes of how change happens and how specific actions will lead to result.

The construction of the mind-map is based on eight internal interviews of one and a half hours, six external interviews and two discussion sessions, one internal and one external.²¹ The mind-map is constructed in a few steps. In the first step, eight internal semi-structured interviews are conducted. From every single interview a mind-map is constructed. All individual mind-maps have been sent for validation to the interviewee. If necessary the mind-map is restructured and resend once again for validation to the interviewee. This process is continued until the interviewees validate their individual mind-map. This step resulted in eight validated individual mind-maps. In the second step, these eight individual mind-maps were combined into a so-called “common mind-map”. The vocabulary is generalized, by replacing building blocks with the same meaning but a different name with standardized building blocks. After this standardization hundred thirteen building blocks remained. Building blocks that were frequently used (>

²⁰ Since 2007 cancer is the first cause of death in the Netherlands.

²¹ For a complete list of interviewees, see appendix A.

four times, i.e. by more than half of the interviewees) are placed in the common mind-map. Building blocks that are used in three of four individual mind-maps are valued based on their relative importance (incoming and outgoing arrows). The more links between one building block and the other building blocks can be seen as an indication for their relative importance in the total structure of action-reaction chains. Finally, this resulted in a common-mind-map with forty building blocks resulting in three impact categories.

The common-mind map shows how the NHF managers believe social systemic change happens and how their own actions have an impact on these social changes. This model builds on individual perceptions and believes, therefore in the third project step the common mind-map was presented, explained and discussed with a group of twenty NHF employees. In the fourth step, the mind-map is presented, explained and discussed during eight external individual interviews and one discussion session with six external persons. Based on all results the mind-map was reconstructed and finalized.²² The arrows in the mind-map show the relations between the different building-blocks. The '+' or the '-' on the arrows show a positive or negative relationship. Positive means; more input will result in more output, negative means; lesser input will result in lesser output. To be sure, it does not mean that the effect in itself is positive or negative.

The mind-map shows three impact categories of the NHF: (1) impact on social costs, (2) impact on life expectancy, and (3) impact on quality of life. During the interviews and discussion sessions we also discussed the amount of the impact of the NHF. The results of the interviews all pointed towards the same direction while all interviewees expect a positive impact. However, none of the interviewees could make this more tangible by putting an amount (in Euros or percentages) to the impact.

The third step in the analysis is to translate the impact categories into measurable indicators. After conducting a literature study, especially in the field of health policies and studies, a first case study was performed to actually quantify the

²² The common mind-map is shown in appendix B.

impact of the NHF. The impact of the NHF on the costs and benefits of the developments of reintegration after an Acute Myocardial Infarction (AMI) in the period 1980 – 2005 is measured. The results of the fourth step are described in the next paragraphs.

5.5 Quantitative analysis

5.5.1 Introduction

Cardiovascular diseases (CDV) are, next to cancer, one of the most important causes of death for women, and the second cause of death for men in the Netherlands. CVD caused 32 % of all deaths in the Netherlands in 2005. In 2005 11.777 men and women of the ages 15-65 had to endure an acute myocardial infarction. 22 % of the cardiovascular diseases deaths were attributable to Acute Myocardial Infarction (AMI) (Statline, 2008). These numbers represent a large economic and emotional burden of AMI on society. This burden is recognized by the government, Dutch citizens and by health organisation like the NHF. In the policy of the Ministry of Health, Well-being and Sport, an important theme is prevention of chronic illnesses by creating awareness of the risk factors and the lifestyle of the Dutch population.

In this case study the economic burden and benefits related to the development in AMI under the working population are quantified for the Netherlands for the period 1980-2005. The costs are calculated by a so-called ‘cost of illness study’. In the Netherlands, no earlier studies exist that analyze and calculate the costs of illness of coronary heart diseases. In the literature there are costs of illness studies executed on coronary heart diseases in the UK, Finland and Japan (Maniadakis & Gray, 2000; Liu et al., 2006). Most of these studies focus only on the direct health care costs. In this study both the direct health care costs as well as the indirect non-health care costs are included. Next to the costs of illness, also the social benefits, in terms of quality of life and lifetime prolongation, are analysed.

Firstly, a short description of a cost of illness study is described. Secondly, the developments of AMI, incidence, resulting illness and deaths, in the period 1980 – 2005, are analysed. Thirdly, the economic burden of AMI under the working force

in the Netherlands for the period 1980-2005 is calculated. This is done by calculating both the direct health care costs and the indirect non-health care costs. Fourthly, the effect of these developments on life expectation and quality of life are calculated. Finally, the role of the NHS in the change of the economic burden and benefits will be examined and quantified.

5.5.2 Social costs: cost of illness study

Cost of illness studies are used to get an indication of the financial impact for society of illnesses (Hodgson & Meiners, 1982). In this study the cost of illness study describes all relevant societal costs²³ related to AMI. A cost or burden of illness study estimates the resources consumed in disease prevention, detection and treatment (Liu et al., 2002). Four categories of costs are distinguished and need to be considered in a comprehensive cost of illness study: direct health care costs, indirect health care costs, direct non-health care costs, and indirect non health care costs (Oostenbrink et al., 2004). An overview and examples of these types of costs are provided in table 5-1.

The cost of illness of AMI in the Netherlands is estimated, focusing on direct health care costs and the indirect non-health care costs. Indirect health care costs and direct non-health care costs are not taken into account at all. Indirect health care costs are costs occurring after treatment as a result of life years gained. These costs are also called survivor costs (Nyman, 2004). According to Gold et al. (1996) and Drummond et al. (1997) there is no consensus among economic analysts about whether survivor medical care costs should be included. In this study these costs are not included while the guidelines for cost of illness studies (CVZ, 2004) recommend not to include this cost category based on ethical²⁴ consideration. Several different methods are available to calculate the costs related

²³ Negative costs are benefits.

²⁴ Including this cost category would implicate that all health costs during the life years gained are taken into account. In this sense the cheapest situation would be when a patient would die immediately of an AMI.

to informal care²⁵. Direct non-health care costs are not included in this study because no data is available over the years on the costs of informal care.

Cost category	Examples
Direct health care costs	All medical costs related to treatment, e.g. costs of hospitalization, emergency transport, surgeries, medication.
Indirect health care costs	Costs occurring after treatment as a result of life years gained, e.g. lifelong use of cholesterol lowering drugs and periodical medical checkups.
Direct non-health care costs	Modifications at home because of permanent disability, travel expenses of patient and family, time loss.
Indirect non-health care costs	Mainly productivity losses because of absence or decreased productivity.

Table 5-1 Cost categories in a cost of illness study (Oostenbrink et al., 2004)

The cost of illness study is performed from a national, societal perspective, using a top-down approach. A bottom-up approach, using data at the individual patient level, was not possible because of a lack of available data²⁶. The top-down approach estimates the economic costs by using aggregate data from mortality, hospital admissions, duration of hospital stay and other indicators. The advantage of the top-down approach is that it uses national data that is often well structured and more readily available. A disadvantage of a top-down approach is that the research is based on average data. The data used to establish the economic burden of AMI is longitudinal (1980-2005) and sex- and age specific. In this research use is made of age categories of the working force with a ten year range. In the Netherlands the working force consists of 15-65 year old people. The incidence, mortality and recovery data are collected for the period 1980 – 2005. Cost of illness is assessed by multiplying the incidence data from 1980 with the cost level of 2005, and comparing these costs with the actual costs in 2005. In other words, both the direct health care costs and the indirect non-health care costs (i.e. productivity costs) during 1980-2005 are calculated using the 2005 price level. Because of this methodology used, no discounting was required. This

²⁵ For an overview of methods and applications to value informal care see Koopmanschap et al. (2008).

²⁶ Medical registration in the Netherlands is anonymous; therefore bottom-up analysis is not possible.

methodology implicates that we externalize technical progress, inflation rates and other external influences on medical costs per patient.

5.5.3 Epidemiology of AMI

The data used to establish the developments in AMI are longitudinal (1980-2005), sex and age specific. Because the focus of the case is reintegration after an AMI, only the people in the ages working force, 15- 65 years, are included in the analysis. In figure 5-3 an overview is given of the situation before and after having an AMI. To measure the economic burden of AMI, it is necessary to get insight into the activity of people before and after an AMI. After an AMI immediate death can follow or admission to the hospital.

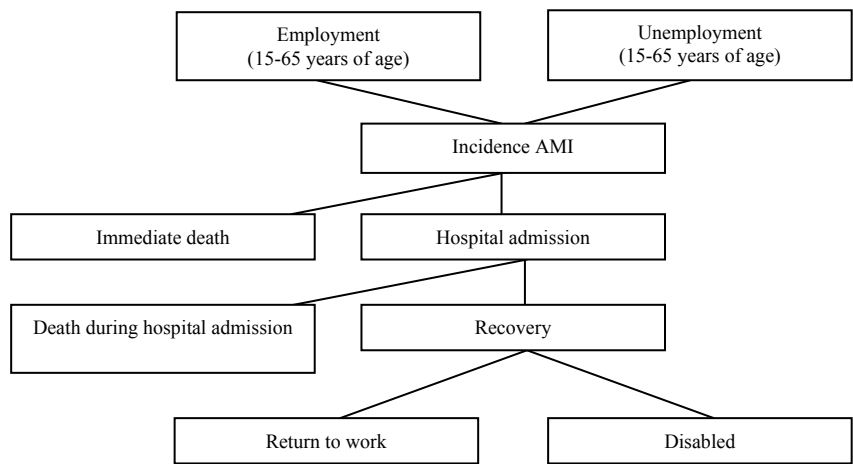


Figure 5-3: Situation before and after an AMI

Epidemiological data on AMI from the Central Bureau for Statistics (CBS) in the Netherlands and from the Dutch national Medical Registration (LMR) are used. The data necessary for this cost of illness study are records on labour participation, mortality and morbidity rates of AMI, hospital admissions and reintegration data. Due to data limitations several assumptions had to be made. All assumptions are based on existing literature or on expert opinion and will be explained throughout the analysis.

Labour force

National aggregated data from CBS is used to determine the average employment/unemployment status among the Dutch population. Individual information on employment status prior to the acute myocardial infarction is not available and therefore several assumptions are made. Firstly, it is assumed that (1) the distribution of patients with a myocardial infarction is evenly distributed among employed and unemployed people (Koopmanschap & Ineveld, 1992; Koopmanschap et al., 1995). This means that employment status does not influence the risk of getting a myocardial infarction (Koopmanschap et al., 1995); therefore we secondly (2) assume that the severity of the infarction, the risk of dying, and the recovery time after the infarction, is not influenced by a patient's employment status prior to the infarction.

These assumptions contradict with existing research results finding that job pressure and job strain are positively associated with cardiovascular disease morbidity and mortality (Hellerstedt & Jeffery, 1997; Price, 2004). Although the relationship between work related stress and AMI seems to be positive, this relationship has not always been found and has not been proven to be causal (Chandola et al., 2008). Next to this, existing research shows that other risk factors, such as high cholesterol level, obesity and lack of exercise, are more important factors explaining trends in incidence of acute myocardial infarction (Ades, 2001; Unal et al., 2004; Unal et al., 2005).

Incidence

To make a comparison of the amount of AMI over the years, an incidence-based²⁷ approach is used. Next to this, only new AMI cases in a single year are considered, hereby including the moment of disease occurrence. In the recent literature, the incidence of AMI is identified using hospital discharges, or first hospital submission records and primary cause of death records (Alfredsson et al., 1982; Hammar et al., 1994; Linnarsjo et al., 2000; Hämäläinen et al., 2004). In this study the incidence of AMI is identified using the records of hospital admissions and the

²⁷ In contrast with a prevalence-based approach. The prevalence of a disease in a statistical population is defined as the total number of cases of the disease in the population at a given time.

records of primary cause of death²⁸. In the Netherlands, medical registration systems are based on anonymity; therefore we do not know whether the AMI is a first or a repetitive AMI. As a consequence the incidence numbers may be biased and overestimated; one person can have several AMIs during his/her working life. In addition to this, there is a potential overlap in hospital admittance and records of primary cause of death. When one person is admitted to the hospital and dies some time after he left the hospital, this is counted double in the incidence data.

Only recently, hospital admissions/records are combined with personal information. In commission of the NHF a cohort study has been executed in which records of several National medical registration systems are combined²⁹. The research follows patients who are admitted in the hospital in 2000 for the first time. From these patients the available data is used to see whether these patients were submitted earlier in the period 1995-2000. An estimation of total incidence in 2000 is made by looking at the number of deaths caused by AMI outside the hospital and seeing whether these persons were admitted to the hospital in the years 1994-2000. This cohort study creates a valid manner to follow AMI patients longitudinal in the Netherlands, enabling the provision of nationwide incidence estimates of first AMI in the Dutch population in the future. Because of the limited group of patients involved in the cohort study and the limited time frame of the cohort study, these results are not taken into account.

Mortality

A difference is made between immediately death caused by AMI and death during hospital admission. Data indicating mortality within one year of the first AMI is only available from 2000 onwards. From 2000 onwards data from CBS shows mortality rates within a year after hospital admission with an average of 5% for patients between 25-49 and an average of 8% for the people between 50-65 years old. Because of the lack of data on mortality rates after hospital discharge, the assumption is made that all mortalities within the first months after discharge

²⁸ ICD 10 I20.0 – I25.0

²⁹ National medical registration for hospital admission (LMR), Central Bureau of Statistics (CBS), and the administration records of municipalities (Gemeentelijke Basisadministratie).

belong to the category of patients that do not return to work. As a consequence the category that does return to work is not affected by mortalities during their recovery period and this does not influence the productivity costs of this category.

Hospital admissions

Hospital admissions include all hospital admissions of the AMI patients. Due to the anonymity of the aggregated data, it is not possible to indicate whether patients are admitted to the hospital several times. This has the implication that the number of hospital admissions may be biased upwards.

Recovery and return to work

It is assumed that all patients who were employed prior to the AMI will start rehabilitation in order to return to work. Research on return to work after heart diseases, and AMI specifically, shows a wide range in reintegration rates (Perk & Alexanderson, 2004). In table 5-2 an overview is given of the existing research estimations regarding reintegration after an AMI.

Author(s) and year	Country	Period	% return to work
Soejima et al. (1999)	Japan	1992-2006	83%
Herlitz et al. (1994)	Sweden	1986-1987	49%
Boudrez et al. (1994)	Belgium	1983-1988	85%
Dennis et al. (1988)	USA	1978-1980	52%
Smith and O'Rourke (1988)	USA	1987-1989	72%
Hedbäck and Perk (1987)	Sweden	1978-1980	60%
Maeland and Havik (1987)	Norway	1978-1980	73%
Wiklund et al.(1985)	Sweden	1978-1980	75%
Bengtsson (1983)	Sweden	1973-1975	85%

Table 5-2: Reintegration rates after an AMI

Important limitations of these studies are that most of them are conducted among a small group of patients, and often only among male patients (Perk & Alexanderson, 2004). The results of European studies show reintegration rates, within a year after AMI, between 62% - 92% (Hall et al., 2002). Based on guidelines from the Health Council of the Netherlands we use a reintegration rate of 75% (Gezondheidsraad, 2005).

AMI is one of the most important causes for long-term sickness absence, accounting for high numbers of disability pensions and sickness absence (Perk & Alexanderson, 2004). Research on reintegration after heart diseases, AMI specifically, shows a wide divergence in recovery time. There are no clear guidelines regarding the optimal duration and degree of sick leave for patients that suffered from AMI. Many factors influence the recovery period; physical characteristics, psychosocial, demographic and social factors (Perk & Alexanderson, 2004). This makes it difficult to determine the average recovery time. Reliable (longitudinal) data on recovery time of Dutch AMI patients is lacking. Work resumption often requires adjustments regarding the content of their jobs and the amount of hours to start with. However, in the case of no specific complications, patients should be able to return to work within six to eight weeks after hospital discharge. Nowadays, full resumption of work should be possible after ten to twelve weeks (Gezondheidsraad, 2005). The average length of recovery until reintegration is estimated to be 2,5 months in 2005.

Developments since the 1980s

Trends in incidence show that the incidence of AMI has decreased significantly for both men and women. The decline has been strong for patients of 55-65 years old, a decrease of 34% between 1980 and 2005. More specifically, within the age category 60-65, incidence decreased with 44%. In younger age categories the decline is also significant. The data showed a decline of 31% in registered incidence between 1980 and 2005 for men in the working population, against a decline of 10% for women. An overview of the age- and sex-specific trends in incidence can be found in table 5-3.

	1980		1990		2000		2005	
	M	F	M	F	M	F	M	F
15-24	21	3	5	2	13	7	13	2
25-34	224	57	182	35	213	59	161	57
35-44	1.272	184	1.437	199	1.270	344	1.152	287
45-54	4.500	708	3.843	637	3.887	909	3.125	820
55-64	7.510	1.819	6.888	1.846	5.020	1.391	4.833	1.327
15-64	13.526	2.771	12.355	2.719	10.403	2.710	9.284	2.493

Source: CBS

Table 5-3: Trends in incidence AMI 1980 – 2005, in persons

The mortality rates of myocardial infarction between 1980 and 2005 show a decline of 65% for men and 57% for women in the working population.

Also immediate death (Table 5-4) and death after admission in a hospital (Table 5-5) have declined with approximately 65% for men and 57% for women.

	1980		1990		2000		2005	
	M	F	M	F	M	F	M	F
15-24	4	1	3	0	2	1	1	0
25-34	39	6	14	8	18	12	12	3
35-44	193	47	140	27	120	39	87	24
45-54	723	135	419	88	388	97	259	59
55-64	1.613	363	1.071	242	738	188	544	151
15-64	2.572	552	1.647	365	1.266	337	903	237

Source: CBS

Table 5-4: Trends in AMI mortality (immediate death) 1980 – 2005, in persons

	1980		1990		2000		2005	
	M	F	M	F	M	F	M	F
15-24	1	0	1	0	0	0	1	0
25-34	9	8	15	6	5	4	5	4
35-44	89	17	88	17	68	16	47	15
45-54	375	65	255	52	235	53	133	45
55-64	952	276	675	217	356	174	327	98
15-64	1.426	366	1.034	292	664	247	513	162

Source: CBS

Table 5-5: Trends in AMI mortality (Death during hospital admission) 1980 – 2005, in persons

Between 1980 and 2005 hospital admissions of patients with AMI have declined with approximately 19% (Table 5-6). This decline is especially strong for men, in all age categories the admissions of men declined. For women the decline is smaller and, especially for women aged 45-54, the data even shows a rise in admissions of 33%. For both men and women the data show a strong decline in hospital admissions for patients between 55-64 years, respectively 27% and 19%.

	1980		1990		2000		2005	
	M	F	M	F	M	F	M	F
15-24	17	2	2	2	11	6	12	2
25-34	185	51	168	27	195	47	149	54
35-44	1.079	137	1.297	172	1.150	305	1.065	263
45-54	3.777	573	3.424	549	3.499	812	2.866	761
55-64	5.897	1.456	5.817	1.604	4.282	1.203	4.289	1.176
15-64	10.954	2.219	10.708	2.254	9.137	2.373	8.381	2.256

Source: CBS

Table 5-6: Trends in hospital admissions 1980 – 2005, in persons

The length of hospital admissions has steadily decreased since 1980. The average hospital duration in 1980 was 17 days for men and 18,1 day for women (Table 5-7). In 2005 the average length of the hospital admission was 6,8 days for both men and women, this is a 60% decrease for men and 63% decrease for women. This decline in the length of the hospital stay is the strongest for the age category 25-34 year olds. The age of patients does not seem to exert a substantial influence on the length of the admission. The length of the admissions for patients in the different age categories is approximately the same.

	1980		1990		2000		2005	
	M	F	M	F	M	F	M	F
15-24	13	10	6	11	6	6	7	37
25-34	16	17	11	9	8	8	5	6
35-44	17	16	12	12	13	9	6	6
45-54	17	18	12	12	8	10	6	6
55-64	17	18	12	13	9	10	7	7
15-64	17	18	12	13	9	10	7	7

Source: CBS

Table 5-7: Trends in length of hospital admission 1980 -2005, in days

5.5.4. Direct health care costs

Direct health care costs estimates are obtained by assessing the resources used across the different health care providers to prevent, detect and treat AMI patients (Liu et al., 2002). Main resources used for estimating the direct health care costs in this study are aggregate data from Central Bureau for Statistics (CBS) and the

National Institute for Public Health and Environment (RIVM). In a RIVM study ‘Costs of illness in the Netherlands 2003’ (Poos et al., 2008), the total health care costs in the Netherlands are analysed. In the Netherlands a total of 68,5 billion Euros was spend on total health care costs in 2005³⁰.

The diagnosis coronary heart disease (ICD10 I20.0-25.0)³¹ is a diagnosis used by the RIVM to which the total health care costs are attributed. In table 5-8 the resources used for coronary heart disease care by the different providers are shown. A total of 534,7 million Euros (399 million for men and 135,7 million for women) was spend on the prevention, detection, treatment and recovery of coronary heart diseases. The services provided by the hospital and the use of medical goods attribute substantially to the total health care costs (320 million Euros on hospital care and 152 million on medical goods).

Sector	M	F	Total
Hospital care	250,9	69,1	319,9
Elderly care	2,1	0,9	2,9
Ambulance care	8,8	4,2	12,9
Care for the disabled	0,0	0,0	0,0
GGZ+MO	0,0	0,0	0,0
Medical goods	102,9	49,1	151,9
Transportation	8,6	3,8	12,5
OV-providers	7,1	2,4	9,6
Administration	18,8	6,4	25,1
Nursing care	0,0	0,0	0,0
Total	399,0	135,7	534,7

Source: RIVM (2008)

Table 5-8: Sectors health care costs coronary heart diseases 2005 (million Euros)

In the RIVM report (2008) there are no specific costs attributed to AMI. Based on the data on duration of the hospital stays from LMR and CBS the assumption is made that 32% of the direct health care costs of coronary heart disease are

³⁰ This implies an increase in costs of 19,1% compared to 2003. In 2003 the total health care costs summed up to 57,5 billion Euros.

³¹ Acute Myocardial Infarction (ICD 10 I21.0) belongs to this category.

accounted for by care of AMI patients³². By using average hospital duration data we incorporate the burden of the disease in our weighting. The total health care costs for AMI patients (Table 5-9), sum up to 178,2 million euros in 2005 (133,1 million by men, 45,2 million by women), 60% of these costs are made within the age category 60-65 years, while only 10% of the total costs are made within the age category 15-44 years.

	1980		2005	
	M	F	M	F
15-24	0,40	0,20	0,20	0,10
25-34	1,90	0,60	1,30	0,60
35-44	12,40	2,10	11,20	3,30
45-54	57,80	11,20	40,20	12,90
55-64	124,50	38,60	80,10	28,20
15-64	193,90	50,20	133,10	45,20

Table 5-9: Direct health costs AMI (million Euros)

Results

Dividing the total costs of direct health care for AMI by the incidence of every age and sex specific category leads to the average costs per incidence of an AMI. It is with using this incidence based approach that the direct health care costs for the 1980 are calculated (table 5-9). This calculation shows how much the cost for direct health care working would be in 2005 if the same incidence level of 1980 would occur. In 1980 the incidence of AMI was 38% higher than in 2005. Based on today’s costs this means that the costs of direct health care of AMI would be 246,6 million (193,9 million by men, 50,2 million by women). The direct health costs for AMI have decreased by 28% since the 1980s.

Sensitivity analysis

Sensitivity analysis was used to explore the effects of altering the assumptions used in the estimation of the direct health costs (see table 5-10). Based on the length of hospital stay it was calculated that the segment of AMI in coronary heart diseases is 32%. The segment of direct health care costs for AMI in total costs of

³² In 2005 596.889 days were spent by coronary heart patients in hospitals. AMI patients have spend 189.653 days in the hospital. This leads to a segment of 32% of AMI in the coronary heart diseases.

coronary heart diseases was varied to 27%, based on a comparison of number of hospital admissions, and to 28%, based on a comparison of incidence. In this sensitivity analysis the results of a segment in total direct health care costs based on a comparison of number of hospital admissions (27%) led to the strongest decline in costs. Based on this assumption total direct health care costs were estimated to be 199,8 million Euros in 1980 and 144,4 million Euros in 2005; a decrease of respectively 18% and 20%.

	1980	1985	1990	1995	2000	2005
Segment AMI 27% (Based on hospital admission)	199,8	210,9	184,8	173,7	160,7	144,4
Segment AMI 28% (Based on incidence)	207,2	218,7	191,6	180,1	166,7	149,7

Table 5-10: Sensitivity analysis; direct health care cost (million Euros)

5.5.5 Indirect non-health care costs

The indirect non-health care costs of disease are defined as “costs associated with production loss and replacement costs due to illness, disability and death of productive persons” (Brouwer et al., 1997). Production losses can be the consequence of temporary absence from work, permanent disability and (premature) death. The production losses due to a lower productivity of people who return to work at a suboptimal level are not taken into account due to a lack of data. Also, for the calculation of the total productivity losses no distinction is made between people returning to work at 100% or with adapted working hours.

Traditionally the human capital method was used for calculations of productivity losses due to illness. This method estimates the value of potentially lost production or income as a consequence of disease (Koopmanschap et al., 1995). The potential loss of productivity is quantified in terms of forgone earnings, this assuming full productivity (Hodgson, 1994). In case of permanent disablement or premature death at a specific age, the total productive value or earnings from that age until the age of retirement is counted as indirect costs. The concept underlying the human capital method is that the value of a person’s labour activity is equal to the earnings of that person for work delivered (Hutubessy et al., 1999).

In the literature the human capital method has been criticized because it may overestimate the actual production loss to a considerable extent (Koopmanschap & Ineveld, 1992; Koopmanschap et al., 1995; Brouwer et al., 1997). An alternative approach is the friction cost method. The essence of the friction cost method is the idea that absent workers can be replaced after an adaptation period (the friction period), thereby preventing further production loss. The friction cost method distinguishes between a friction period, in which productivity loss occurs and a further period when the sick employee has been replaced (Brouwer et al., 1997). The only period that productivity costs occur is within the friction period, the time between the absenteeism and the replacement. The friction cost method limits the costs of production loss to the friction period. According to the friction cost method, a friction period exist/develops when immediate death of an employee occurs and at absence of work. The length of the friction period is dependent on the average vacancy duration. Factors determining the average vacancy duration are the level of unemployment within society, the education level necessary for the vacancy and the efficiency of the labour market matching labour demand and supply (Koopmanschap et al., 1995). The production loss costs are calculated for the days of absence from work when these days are shorter than the friction period. When the absence from work exceeds the friction period, the production loss is limited to the length of the friction period. Thus, after the friction period there are no additional productivity costs except longer term macro-economic costs (Brouwer et al., 2002). The value of the lost production during (part of) the friction period is measured by multiplying the number of sick days due to absenteeism by income and elasticity of annual labour time versus labour productivity (Hutubessy et al., 1999).

The calculated production losses based on the friction-cost method are substantially lower than when the human capital approach is used. The friction cost method restricts the costs to the friction period, while the human capital approach calculates all the costs regarding the remaining years/days of the productive life (until retirement age of 65 year). In this study the friction cost method is used to calculate the production loss.

A friction period occurs in case of immediate death and in case of absence because of AMI. Premature death while one is absent from work does not induce an additional friction period if the work absence is longer than the friction period. The length of the friction period was estimated on the basis of the average vacancy duration, which depends on the level of unemployment and the efficiency of the labour market (Koopmanschap et al., 1995). The friction period is generally longer than the vacancy duration, because time may elapse between the emergence of a productivity loss and the creation of a vacancy. In addition, time passes between filling a vacancy and the moment the new employee starts working. Due to lack of data, the necessity exists to assume a homogeneous labour market. Therefore no distinction is made between the different segments of the labour market, for example according to education level. Furthermore, differences in unemployment levels for high and low educated people and differences between sectors are not taken into account. Based on existing research the friction period in this research is estimated at a period of three months (Luengo et al., 2006; Allender et al., 2008).

Short-term absence may lead to production loss or extra costs to continue production at preceding level. Insights in the consequences for indirect costs would require firm specific information. Absence from work reduces the effective labour time. However, a reduction of annual labour time causes a less than proportional decrease in labour productivity per year. In this study the estimated elasticity for annual labour time versus labour productivity was estimated to be 0,8, indicating that when labour time decreases with 10% productivity will decrease with 8% (Koopmanschap et al., 1995). The average value of production per employee is approximated by using age- and sex-specific average gross national wages including overtime and before deduction of employee insurance- and pension contributions. The costs of absence shorter than the friction period were calculated as being 80% of the production value during the period of absence. The costs of absence equal to or longer than the friction period were calculated as being 80% of the production value during the friction period.

Results

Costs due to productivity loss related to AMI have decreased during the timeframe of 1980-2005. In 2005 total productivity losses counted up to about 56 million

compared to an amount of about 87 million for the 1980 situation (table 5-11). This 36% cost decrease is mostly accounted for by men, 96% compared to 4% by women. However, men still cause most productivity losses, over the years their share in total cost has only slightly decreased from 90% to 87%. Men account for this high share in total costs because of higher incidence, higher rates of employment and higher wages compared to women.

	<i>1980</i>		<i>2005</i>	
	M	F	M	F
15-24	0,04	0,005	0,02	0,003
25-34	1,20	0,20	0,70	0,20
35-44	8,60	0,60	6,90	0,90
45-54	33,00	2,60	20,30	2,70
55-64	52,30	6,40	30,20	4,30
15-64	78,10	8,80	48,40	7,50

Table 5-11: Productivity losses AMI (million Euros)

Both for 1980 and 2005 the share of total costs of productivity are highest due to temporary absenteeism of patients that returned to work after a recovery period (Table 5-12).

	<i>1980</i>		<i>2005</i>	
	Men	Women	Men	Women
15-24	0,02	0,002	0,013	0,002
25-34	0,67	0,12	0,47	0,12
35-44	5,00	0,31	4,27	0,56
45-54	18,70	1,39	12,45	1,67
55-64	25,80	3,12	17,23	2,40
15-64	41,30	4,43	28,64	4,37

Table 5-12: Productivity losses due to temporary absenteeism 1980 -2005 (million Euros)

However, this share in total costs increased for 2005. This increase is related to the strong decline in the share of costs related to losses because of premature death (see Table 5-13).

	<i>1980</i>		<i>2005</i>	
	M	F	M	F
15-24	0,01	0,002	0,004	0
25-34	0,25	0,05	0,09	0,03
35-44	1,91	0,22	0,90	0,14
45-54	8,05	0,73	2,86	0,39
55-64	17,86	2,25	6,06	0,89
15-64	23,09	2,92	8,25	1,33

Table 5-13: Productivity losses due to (premature) death 1980 - 2005 (million Euros)

In 1980 premature death accounted for about 33% of total productivity costs, in 2005 this is only 17%. The 31,2 million decrease in cost between 1980 and 2005 exists for 53% of a decline in costs related to mortality, 41% of a decline in temporarily absence, and for 6% of a decline in costs related to patients that not return to work (table 5-14). This indicates that the steep decline of AMI mortality has accounted for the largest part of the decrease in productivity losses.

	<i>1980</i>		<i>2005</i>	
	M	F	M	F
15-24	0,008	0,0008	0,005	0,0008
25-34	0,23	0,04	0,19	0,05
35-44	1,67	0,10	1,71	0,23
45-54	6,23	0,46	4,98	0,67
55-64	8,61	1,04	6,89	0,96
15-64	13,76	1,48	11,46	1,75

Table 5-14: Productivity losses due to inability to return to work 1980/2005 (million Euros)

Sensitivity analysis

A sensitivity analysis was conducted to explore the effects of altering the assumptions used in the estimation of the productivity costs (see table 5-15). The effects of changes in estimated recovery periods of half a month decrease and increase and friction periods varying from 2 to 5 months were evaluated. Because of the divergence in rates of return found in recent research the return to work rate was varied from 62-92%. The elasticity for labour time versus labour productivity

was evaluated for values ranging from 0,6-0,9. In these sensitivity analyses the results were most sensitive to changes in friction period length. These results estimated total productivity costs to range between 58 - 145 million Euros in 1985 and 48,2 - 71 million Euros in 2005.

	1980	2005
Recovery time -0.5 months*	86.960.252*	49.199.389
Recovery time +0.5 months*	86.960.252	62.405.577
Friction period 2 months	57.973.501	48.206.812
Friction period 5 months	144.933.753	70.993.824
Rate of return 62%	86.960.252	56.947.019
Rate of return 92%	86.960.252	54.305.782
Elasticity 0.6	65.220.189	41.851.862
Elasticity 0.9	97.830.283	62.777.793

* The recovery periods after 1980 are estimated to decrease linearly until 2005

Table 5-15: Sensitivity analysis; productivity losses (Euros)

5.5.6 Social benefits: quality of life and life expectation

An AMI result in several possible health outcomes, ranging from temporarily disability to chronic disabilities or even death. These different outcomes, related to quality of life and life expectation, can be captured by one single composite measure; the Disability Adjusted Life Years (DALYs).

The concept of Disability adjusted life years (DALYs) is developed by the World Bank and backed by the World Health Organisation (WHO) as a measure of the global burden of disease (World Bank, 1993; Murray & Lopez, 1996). Just like quality adjusted life years (QALYs), DALYs combine information about morbidity and mortality in numbers of healthy years lost (Arnesen & Nord, 1999). While morbidity is an incidence of ill health, mortality is incidence of death in a population. In the DALY approach, each state of health is assigned a disability weighting on a scale from zero (perfect health) to one (death) by an expert panel. As such the DALY is a measure that extends the concept of potential years of life lost due to premature death to include equivalent years of “healthy” life lost in states of less than full health, broadly termed disability. One DALY is thus one lost year of healthy life (WHO definition).

The DALY methodology can be described by the following equation (Murray & Acharya, 1997; Murray & Lopez, 1997):

$$DALY = YLL + YLD.$$

YLL is the number of years of life lost due to mortality and *YLD* is the number of years lived with a disability, weighted with a factor between 0 and 1 for the severity of the disability.

The *YLL* due to a specific disease in a specified population is calculated by summation of all fatal cases (*d*) due to the health outcomes (*l*) of a specific disease, each case multiplied by the expected individual life span (*e*) at the age of death:

$$YLL = \sum_l d_l \times e_l$$

YLD is calculated by the product of the duration of the illness (*t*) and the severity weight (*w*) of a specific disease, accumulated over all cases (*n*) and all health outcomes (*l*):

$$YLD = \sum_l n_l \times t_l \times w_l$$

The WHO developed a list of standard severity weights (*w*) for specific diseases. The Dutch National Institute for Public Health and the Environment (RIVM) used this list as a starting point for their study “Dutch Disability Weights³³” (Stouthard et al. 1997; Stouthard et al., 2000). In this study disability weights for 56 diseases were developed. Table 5-16 shows some examples.

³³ This study is a cooperation between RIVM, Erasmus Medical Centre (Erasmus MC), Academic Medical Centre Amsterdam (AMC), and TNO-PG.

Disease	Weighting factor
Epilepsy	0,11
Heart failure	0,15
Diabetes Mellitus	0,20
Tuberculoses	0,23
Coronary Heart Disease	0,29
Rheumatoid arthritis	0,53
Multiple Scleroses	0,53
Stroke	0,61
Schizophrenia	0,66

Table 5-16: Examples of “Dutch Disability Weights” for specific diseases
(Stouthard et al. 1997; Stouthard et al., 2000).

When the DALY methodology is used several choices on the detail of study have to be made. This includes choice on incidence or prevalence based, life expectancy, discounting, and age weighting (van Lier & Havelaar, 2007). As all the data in this study is incidence based we apply an incidence based approach for this DALY calculation. In the incidence-based approach to disease burden calculations, all new cases are counted and all health outcomes (including those in future years) are assigned to AMI. This approach contrasts with the prevalence approach, in which the health status of a population at a specific point of time is assessed. Assuming a steady state situation there should be no difference between both approaches. Due to lack of data we assume that after an AMI, the disability related to the AMI will remain in all future life years. Life expectancy is derived from Dutch life tables. As we know the age distribution of fatalities we can calculate the lost life years due to AMI for male and female patients. When discounting is applied, it would mean that future life years are assigned less value than those lived today. This is based on the economic concept that one prefers benefits now rather than in the future. Discounting is often disputed because its application results in a lower efficiency of prevention programmes (Bonneux & Birnie, 1994), but also based on ethical value. In this study no discounting has been applied. Individuals have different roles and changing levels of dependency and productivity related to age, one might use age-weighting to count for these differences. Age-weighting is highly debated and the exact quantitative

implementation is controversial (Anand & Hanson, 1997). Therefore, in this study, age-weighting is not applied.

Results

To calculate the burden of AMI, the disability weighting is multiplied by the number of years lost due to AMI and is added to the number of years lived in that health state (see table 5-17). The mortality rates of AMI declined strongly between 1980 and 2005. In 1980, in the ages 15 to 65, 4.916 people died of an AMI, while in 2005 1.815 people died of an AMI. This is a decline of 3.121 deaths (63%). The numbers of years lost (YLL) due to AMI can be calculated by summation of all fatal cases, each case multiplied by the expected individual life span at the age of death. For example, if a male of 45 years died in 2005 due to an AMI, and the life expectancy for a male in 2005 is 78³⁴ years, this person lost 33 life years. In total in 1980 91.416 life years were lost due to AMI, in 2005, 43.486 life years were lost. In the period 1980 and 2005, life years lost decreased with 47.930 on a yearly basis.

	1980	2005	Δ 1980 – 2005
YLL			
Mortality	4.916	1.815	- 3.121
YLL	91.416	43.486	- 47.930
YLD			
Morbidity	16.297	11.777	- 4.520
Morbidity - mortality	11.381	9.962	- 1.419
Years lived with disability	395.038	297.328	- 97.710
Disability Weight	0,29	0,29	0,29
YLD	114.561	86.225	- 28.336
DALYs			
DALYs (YLL + YLD)	205.977	129.711	- 76.266
Value of DALY			€ 80.000,-
Monetized DALYs (million Euros)			- € 6.101,-

Table 5-17: DALYs calculation, 1980 – 2005, ages 15-65.

³⁴ Source CBS.

The morbidity rates of AMI also declined between 1980 and 2005. In 1980, in the ages 15 to 65, 16.297 people had an AMI, while in 2005 11.777 people had an AMI. This is a decline of 4.520 incidents (28%). The numbers of years lived with a disability (YLD) due to AMI can be calculated by summation of all incidents, each case multiplied by the expected duration of the illness and the severity weight of an AMI. For example, if a female of 63 years had an AMI in 2005, and the life expectancy for a female in 2005 is 82³⁵ years, this person lived 19 life years with the disabilities related of an AMI. The disability weight for AMI is 0,29³⁶ (see table 5-16), therefore the years lived with a disability are 8,41. Because the morbidity rates include mortality rates we have to subtract mortality from morbidity before we can calculate the YLD. YLD in 1980 was 114.561, in 2005 86.225, a decline of 28.336 (25%). DALYs are calculated by combining the YLL and YLD figures. In 1980 105.977 Disability Adjusted Life Years were due to AMI, in 2005 this was 129.711, a decline of 76.266 (37%). In other words, in the period 1980 – 2005 76.266 DALYs are gained on a yearly basis.

To include these gained DALYs in our cost-benefit analysis, the DALYs have to be translated into monetary figures. DALYs are more and more used for, among others, health care policy calculations. In the Netherlands DALYs are monetised and used for health care policy decisions on the introduction of new treatment methods and prevention programmes. In these calculation decision makers value one DALY with € 80.000,- in case of new treatment methods³⁷. For example, if a new treatment for a certain disease comes available and with this treatment a patient has a change of 50% to live 10 years longer. The treatment method may costs € 400.000,- (50% x 10 years x € 80.000,-) to be included in the Dutch health care policy programmes. If the treatment would cost > € 400.000,- it would be rejected³⁸. The DALYs are monetized using this value, € 80.000,-, for a DALY. In the period 1980-2005, the DALYs decreased with 76.266 resulting in a social benefit of more than 6 billion Euros.

³⁵ Source: CBS.

³⁶ This is the average disability weight for coronary heart diseases, which includes AMI.

³⁷ € 20.000,- in case of prevention programmes.

³⁸ This example is a simplification of actual policy decisions.

5.5.7 Cost-benefit results

The total health care costs for AMI patients sum up to 178 million Euros in 2005. The costs of direct health care of AMI would have been 244 million if the incidence rate of 1980 had not decreased in time. However, because of declines in incidence, hospital admissions and hospital duration due to improvements in medical treatment, higher awareness of the risk factors of AMI and overall better care of AMI, the actual health care costs related to AMI in 2005 decreased with 66 million euros, 27% (see table 5-18).

	Δ 1980 – 2005
Costs	
Direct health care costs	- 66
Indirect non-health care costs	- 31
Benefits	
DALYs	6.101
Total result	6.198

Table 5-18: Cost-benefit results (in million Euros)

The costs related to productivity losses due to AMI also decreased significantly during the 25 years timeframe. Men account for most part for this decline, specifically the decline in mortality rates of men in the working age population. Women account for only a small portion of the costs decrease, however women’s share in total costs is still much smaller compared to men. The total productivity losses sum up to 56 million Euros in 2005, compared to 87 million Euros in 2003, this is a decrease of 31 million Euros, 36%.

The benefits related to increased quality of life and life expectation after an AMI are calculated by monetized DALYs. In the period 1980 – 2005 the DALYs related to AMI decreased with 76.266 resulting in a social benefit of about 6 billion Euros. These benefits can be explained by decreased mortality (63%) and decreased morbidity (27%).

The total result of the social cost-benefit analyses is a benefit of 6,2 billion Euros on a yearly basis. These results are calculated based on the social costs and benefits in the situation that in 2005 the same amount of people would get an AMI

and would die of an AMI as in 1980 compared to the actual situation in 2005. In this way all technological developments, developments in population and inflation rates are excluded from the calculation.

5.5.8 Impact of the NHS

Before something can be said about the impact of the NHF on the social benefits related to the decline in morbidity and mortality of AMI the reasons of the decline in mortality and morbidity have to be identified. Some studies are found analysing the changes in mortality and morbidity of coronary heart diseases resulting in the identification of two main factors responsible for the change; developments in risk factors and developments in medical treatment (Vartianen et al., 1994; Bots & Grobbee, 1996; Unal et al., 2004; Laatikainen et al., 2005; Unal et al., 2005; Bennett et al., 2006; Ford et al., 2007; Capewell et al., 2008). Risk factors for AMI are e.g. blood pressure, smoking, cholesterol, obesity, physical inactivity and diabetes. Risk factors are constructed by genes, lifestyle and preventive medicines. From the 1980s major breakthroughs in cardiology have changed and substantially improved the care and treatment, including the use of thrombolyse, coronary-artery bypass grafting, coronary angioplasty, angiotensin-converting enzyme inhibitors and other medications for secondary prevention (Laatikainen et al., 2005; Ford et al., 2008).

Estimations of the extent to which risk factors and medical developments are accountable for this decline differ strongly within the literature (see table 5-19). Risk factors account for 44% up to 72% of the decline, while medical treatments account for 23% up to 47%. Approximately 5-10% of the decreased mortality stays unexplained.

<i>Author(s) and year</i>	<i>Country</i>	<i>Period</i>	<i>% explained by risk factors</i>	<i>% explained by medical treatment</i>
Ford et al. (2007)	USA	1980-2000	44%	47%
Bennett et al. (2006)	Ireland	1985-2000	48,1%	43,6%
Laatikainen et al. (2005)	Finland	1982-1997	53-72%	23%
Unal et al. (2004)	England Wales	1981-1990	58%	42%
Capewell et al. (2000)	New Zealand	1982-1993	54%	46%
Capewell et al. (1999)	Scotland	1975-1994	51%	40%
Huinink et al. (1997)	USA	1980-1990	54%	43%
Bots & Grobbee (1996)	The Netherlands	1978-1985	44%	46%

Table 5-19: Explanatory power of factors for the decline in mortality and morbidity of coronary heart diseases

All of these researches focus on coronary heart diseases in general instead of AMI specifically. The assumption is made that the explanatory power of the factors for the decline in mortality and morbidity of coronary heart diseases are the same for AMI. In this paper we assume that 45% of the decline in mortality can be explained by the improvement in medical treatments and 50% to the changes in risk factors, 5% remains unexplained. Of the total benefit of 6.2 billion Euros, 3.1 billion Euros of the decrease in the economic burden between 1980 and 2005 calculated before is attributed to improved risk factors and 2,8 billion Euros to developments in medical treatments, 309 million Euros remains unexplained.

To quantify the impact of the NHF it is necessary to determine how medical treatment and risk factors improved. Based on literature research and expert interviews several assumptions are made. Firstly, it is assumed that the improvements in medical treatment are fully due to scientific research. Secondly, it is assumed that developments in the risk factors are due to prevention and education efforts. Thirdly, both scientific research and prevention and education are measured by countrywide investment (input measurement). This implies that it is assumed every investment has the same effectiveness. Fourthly, we have a national scope and focus on the Netherlands. The investments of the NHF in

prevention and education are compared to national investments in prevention and education. Also scientific research is compared to national investments in scientific research. This is contrary to the fact that scientific research in coronary heart diseases and AMI is mainly performed at an international level. Research results are publicized and accessible to other scientists; knowledge about improved medical treatments is exchanged to other countries. Data on aggregated international research expenditures is not available. In this paper the expenditures of the NHF are assessed against national expenditures on research. The quality of Dutch research to coronary heart diseases is in general above the average world wide level. Based on citation index we can also state that research founded by NHF show better results than national average. Between 1993 and 2007 the research projects financed by the NHS published 1.399 articles in various research areas. The main attention of the NHS is within the area of cardiac and cardiovascular systems (22.5% of the publications (NHS, 2008)). The CPP/FCSm citation indicator³⁹ shows that the impact of the research financed by the NHS in the field of cardiac and cardiovascular systems in the period of 1993-2007 is classified as 'above average' (1,85).

Prevention and education

In the assessment of the expenditures of the NHS on prevention and education the definition of prevention used is: *'the total number of measures, both inside and outside the health care, with the goal to guard, stimulate and improve healthiness by preventing sickness and health problems'* (de Bekker-Grob et al., 2006). This definition includes the measures of prevention aimed at preventing new cases of a disease, thus aiming at the reduction and/or decrease of the causes of the disease. It also includes the expenditures on discovering a disease in the earliest stages upon early treatment with a better prognosis for the patient. There are different methods of prevention; aiming at the reduction of exposure to dangerous environmental aspects by means of law, regulation, control and action; aiming at the prevention or early discovery of disease by means of medication, vaccination and screening. The last prevention method includes education; stimulating a

³⁹ This indicator, This CPP/FCSm indicator measures the relative impact of the published papers as compared to the mean of citations in the field. It is calculated as the number of citations per publication (CPP), divided by the mean number of citations per publication in the field to which the publication belongs (FCSm). Outcomes above 1,2 are classified as above average.

healthy life style and healthy life by means of education, information and personal advice (de Bekker-Grob et al., 2006).

In 2006 RIVM published a study on the expenditures in Dutch society in 2003 on prevention measures, both inside and outside the health sector, broken down to broadly defined diseases, including coronary heart diseases (de Bekker-Grob et al., 2006). This study provides data on prevention and education in 2003 in the Netherlands. The study shows that in 2003 940,8 million Euros were spend on prevention measures for coronary heart diseases. The expenditures on health prevention by means of medication and vaccination (blood pressure reducers and cholesterol medication) are 902 million euro, about 96 % of total expenditures. Only about 4% is spend on education and information provision.

The NHF invested 9,56 million euros in 2003 on prevention and education, of which 3,2 million euros was spend on education, 1,3 million in general prevention projects and 1,8 million euros on prevention focused on the risk factors of AMI. The NHF does not spend any money on preventive medication and vaccination. Making the comparison this means that the NHF contributes 1%⁴⁰ of the Dutch investments and expenditures on prevention and education.

Scientific research

A comparison of research expenditures is made on a national level. Only scientific research is taken into account. Industrial research is not included in the analysis, whilst scientific research is at the foundation of developments of new treatments. The total Dutch expenditures on scientific research in 2005 are roughly 65 million Euros⁴¹. The expenditures of the NHS on scientific research in 2005 were 11 million Euros, 17% of the total expenditure in the Netherlands.

⁴⁰ The prevention and education expenditures of the NHF are not specified to age, therefore the percentage is not only targeting at the working population.

⁴¹ Estimation of NHF expert is that the Dutch expenditure on research to heart diseases is between 60 and 70 million Euros in 2005. Specific data on research expenditure in the Netherlands is not available.

Results

The NHF attributed 1% to the improvements related to the risk factors for AMI under the Dutch population by investing in prevention and education. Whilst 50% of the total benefit, 3,2 billion Euros, is attributed to improved risk factors, the NHF contributed 31 million Euros (1%) to this benefit. The NHF contributed 17% to the Dutch investments in research into heart diseases. Whereas 45% of the total benefit, 2,8 billion Euros, is attributed to scientific research, the NHF contributed 474 million Euros (17%) to this benefit. The total contribution of the NHF to the total benefits in the period 1980-2005 related to the decline in mortality and morbidity caused by AMI is estimated to be 505 million Euros on a yearly basis (see table 5-20).

	% of total	Total	Impact NHF
Social benefit by decreased risk factors	50%	3.100	31
Social benefits by improved medical treatment	45%	2.800	474
Unexplained	5%	300	-
Total benefit	100%	6.200	505

Table 5-20: Overview of impact measurement results (in million Euros)

5.5.9 Conclusion quantitative analysis

In the quantitative analysis the economic burden of AMI is estimated for the Netherlands for the period 1980-2005. In our analysis we focussed on the working force, people in the ages 15-65. By analysing factors behind the decline in economic burden - reduced risk factors and improved medical treatment - the impact of the NHF is assessed. The impact assessment of the NHF shows a result of approximately 505 million Euros. No study has evaluated the economic burden of AMI in the Netherlands in a comprehensive cost study before, neither has the impact of a non-profit organization on disease specific costs of illness been calculated before.

There are many data limitations related to longitudinal and sex- and age specific data, therefore, several assumptions are made. The estimated costs and benefits and thereby the impact of the NHF are likely to be underestimated in this analysis. Firstly, the friction cost method is used to assess productivity losses instead of the

traditional human capital approach. By using the friction cost method productivity losses are reduced to a maximum of three months of productivity losses. This might be an underestimation of the real costs incurred when an employee dies. Secondly, several costs related to AMI, e.g. patient travel expenses and informal care, are not included in this study. It was chosen, based on Dutch national guidelines for pharmacoeconomic research, not to include the indirect health care costs in the analysis. Although there is still no consensus about whether or not to conclude this cost category in economic evaluation (Nyman, 2004), the inclusion of unrelated medical costs in life-years gained appears to be gaining support in the literature (Rappange et al., 2008). Van Baal et al. (2007) conclude that for primary prevention both the costs and effects of unrelated medical care should be included in economic evaluation, even if the data requirements may be substantial. Finally, the costs associated with patients returning to work but whose productivity has diminished because of (temporary) part time employment or because of deteriorated physical or emotional condition have not been taken into account.

Despite the assumptions made, analysing the economic burden of AMI, is of interest for several reasons. It depicts the costs related to AMI, creates awareness of the economic impact of this specific cardiovascular disease and makes it possible to make informed decisions on how to distribute research efforts. From this research it can be seen that the development in the costs of illness of AMI are positive, the social costs decreased significantly in the period 1980-2005. Even though AMI is still an important cause of death, the survival chances and future perspectives for the patients are substantially improved.

However, the quantitative analysis also shows that it is not straightforward to determine the quantitative impact of a non-profit organization. Within the literature on impact assessment there is no agreement on how to actually assess the impact of a specific organization. No practical guidelines how to quantify the impact into specific indicators are provided. The method used within this rapport is a possible way to quantify the impact of NHS at the community level. The results of the impact analysis of the NHF have to be interpreted with caution; this quantitative impact assessment should be seen as a first attempt to assess the social impact of a non-profit organization on a community wide goal.

5.6 Conclusion

Cardiovascular diseases are one of the most important causes of death in the Netherlands. Both patients surviving an AMI and patients dying from an AMI cause a large economic and emotional burden on the Dutch society. Dutch citizens, politicians, and health organisations increasingly recognized this burden. The NHF has been working on its mission to fight cardiovascular diseases since 1964. Although it has never been debated whether the efforts of the NHF are useful and important for the Dutch society, the actual social impact of the NHF has never been assessed before.

In the literature, social impact assessment is often mentioned as an accountability mechanism for non-profits (Ebrahim, 2003; Yates, 2004). The impact assessment can serve both as an internal and external accountability mechanism, providing information to the donors, founders, volunteers, board and staff. In today's society characterized by high competition, the stakeholders of non-profit organisations ask for result-based accountability. The stakeholders want the assurance that the donated resources are spend on designated purposes. The social impact assessment performed in this research is a social impact assessment at the community level, analyzing how much the NHF contributed to the decline in economic burden of AMI. In the literature, several theoretical frameworks are developed for social impact assessment. None of these frameworks, however, offer a practical guideline or step by step plan how to actually qualify and quantify the impact.

In this study we used both a qualitative approach and a quantitative approach to analyse the impact of the NHF. This combination of different methods used to examine the same research problem is called triangulation. By using triangulation we strengthened the research results. Different qualitative and quantitative research methods are used, such as interviews, literature research, and quantitative analysis. During 14 interviews, 8 internal and 6 external, and two discussion sessions, one internal and one external, we discussed the potential social impact of the NHF, in terms of indicators and in terms of amounts. Based on the interview results we gathered qualitative data on the potential social impact of the NHF. The indicated potential impact categories are (1) impact on social costs, (2) impact of

life expectation, and (3) impact on quality of life. The discussions during the interviews about the amount of the impact of the NHF pointed to the same direction, all the interviewees expected that there is a positive impact. The NHF however, wanted to sustain these results with quantitative data.

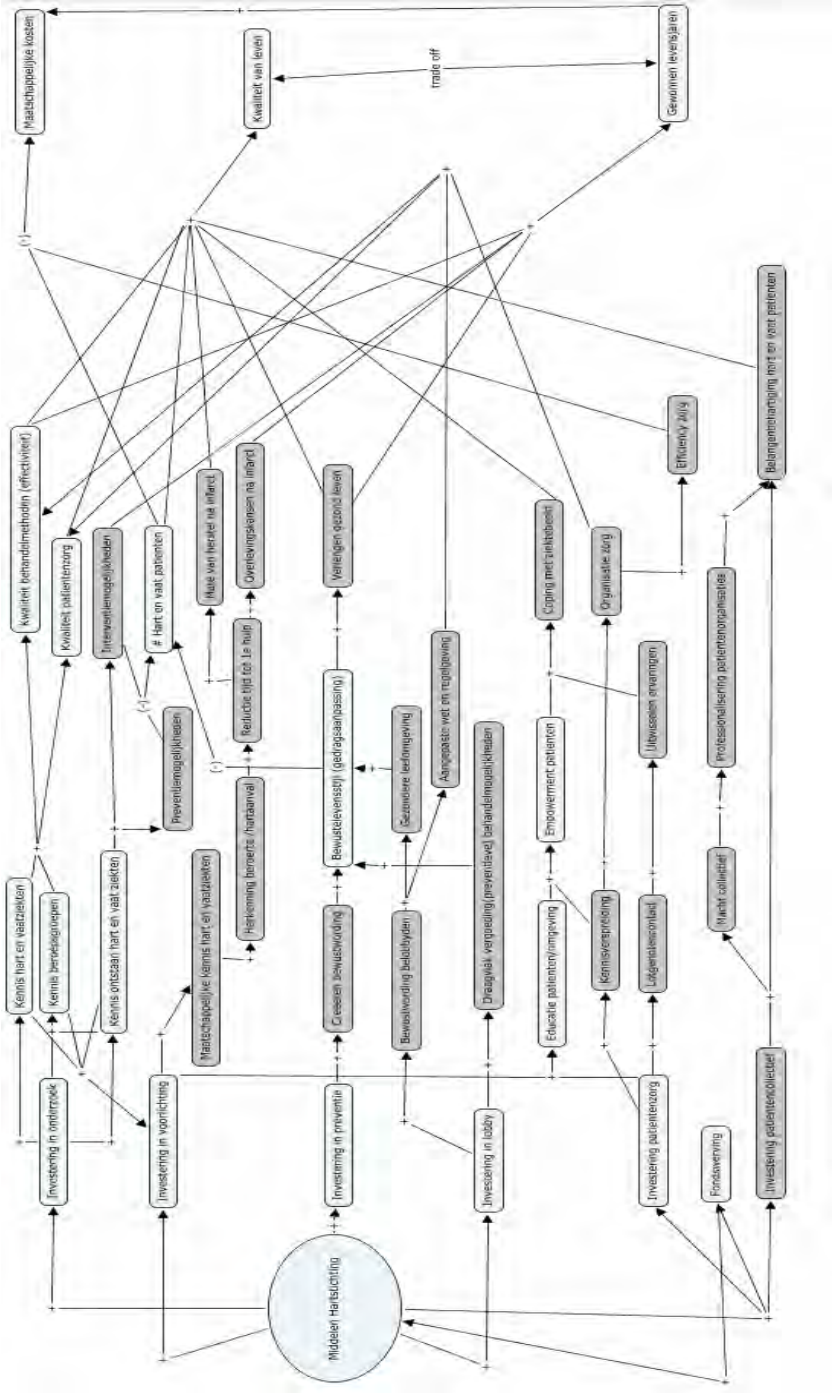
The quantitative analysis shows that it is not straightforward to actually quantify the impact of a non-profit organisation. Many assumptions are needed to come to a quantification of the social costs and benefits and to quantify the impact of the NHF. The quantitative impact assessment should be seen as a first attempt to assess the role of a non-profit organization on a community wide goal. Nevertheless, the result of the impact assessment of the NHF showed a positive result and sustained thereby the results of our qualitative approach. The results of this study can be used by the NHF for internal and external accountability. The NHF now gained information when the strategies followed in the past led to the positive consequences and the stakeholders of the NHF can see what results are achieved with their donated money and resources. Besides this, the NHF can use the result for long-term strategy decisions. The results showed clearly that money invested in scientific research provides more value to society than money invested in prevention and education.

In future research the quantitative analysis can be strengthened by executing more case studies on other cardiovascular diseases, for example strokes. In future case studies the consistency of our methodology on different cardiovascular diseases can be checked and further developed. The indirect health care costs might be assessed and if possible included in future economic evaluations. Executing more in-depth interviews with stakeholders of the NHF can strengthen the qualitative analysis. Next to this, the methodology could be used for other, non-health related, cases. Also the social impact of other organisations, non-profit, governmental or for-profit, can be assessed in future research.

APPENDIX A LIST INTERVIEWEES

Name	Workplace/company
Internal	
Corinne Hinlopen	Netherlands Heart Foundation
Elsbeth Steenland	Netherlands Heart Foundation
Raymond Wimmers	Netherlands Heart Foundation
Marina Senten	Netherlands Heart Foundation
Marc Tijhuis	Netherlands Heart Foundation
Marcel Vergeer	Netherlands Heart Foundation
Désirée Stolker	Netherlands Heart Foundation
Sabine de Potter	Netherlands Heart Foundation
External	
Prof. dr. H.A.J. Struijker Boudier	Maastricht University
Prof. dr. M.L. Simoons	Erasmus MC
Dr. H.W.M. Plokker	St. Antonius Hospital
Mw. Mr. M.J.M. Weerts	Dutch society for Cardiovascular Accidents
Drs. L.E.H. Vredevoogd	Chairman supervisory board NHF
Prof. dr. D.E. Grobbee	UMC Utrecht
Friends of the NHF (discussion session)	Divers

APPENDIX B COMMON MIND



Chapter 6

Conclusions

6.1 Introduction

In this dissertation concepts and tools to measure social impact are studied. As argued in Chapter 1, the research about what impact, as distinct from output and outcomes, corporate actions have upon the society is underdeveloped in existing management and business & society research. Therefore, the objectives of this dissertation are to contribute to the understanding of social impact measurement of organisations and to propose a framework and methodology that facilitates social impact measurement. Seven research questions are addressed to meet these objectives. The two central research questions: “What is social impact and how can it be measured?” are discussed throughout all chapters in this dissertation. The five other research questions are discussed in the individual chapters 2–5.

This dissertation builds on the so-called impact value chain of Clark et al. (2004), and differentiates impact from outputs and outcomes. The impact value chain as developed by Clark et al., is adapted in two ways (see figure 6-1). An arrow is drawn from goal alignment directing back at inputs. While measurement in itself has no value, it can lead to optimisation of results when a manager actually uses the results for goal alignment and strategic purposes. This implicates that measurement is an iterative and not a singular process. Although the impact value chain provides useful information on *what* to measure, no guidelines are provided on *how* to measure social impact. Therefore, the framework is extended here with five process steps to measure social impact.

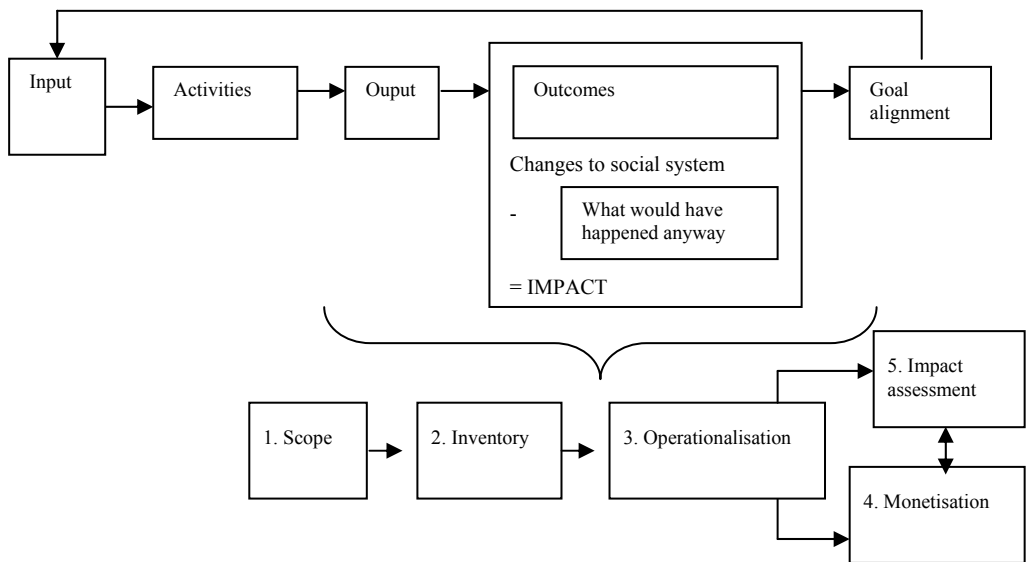


Figure 6-1: Impact value chain (adapted from Clark et al. 2004)

The integration of impact on multiple dimensions into the processes of decision making, planning, and problem solving, requires an innovative and interdisciplinary approach. New measurement approaches and methods are needed to move from input/output orientation focusing on a single dimensional organisational perspective towards an impact orientation at a societal level of analysis, including multiple dimensions. This extension is captured in Figure 6-2.

Performance can be measured (1) with different perspectives, a micro – organisational – perspective or a macro – societal - perspective; (2) on different dimensions, single dimension to multiple dimensions; (3) with different orientations, on input/output or on impact. Conventional measurement methods focus on the inner circle (1:1:1) of Figure 6-2, while there is a shift needed toward more innovative approaches to measurement (2:2:2), captured by the outer 3-dimensionale line of Figure 6-2.

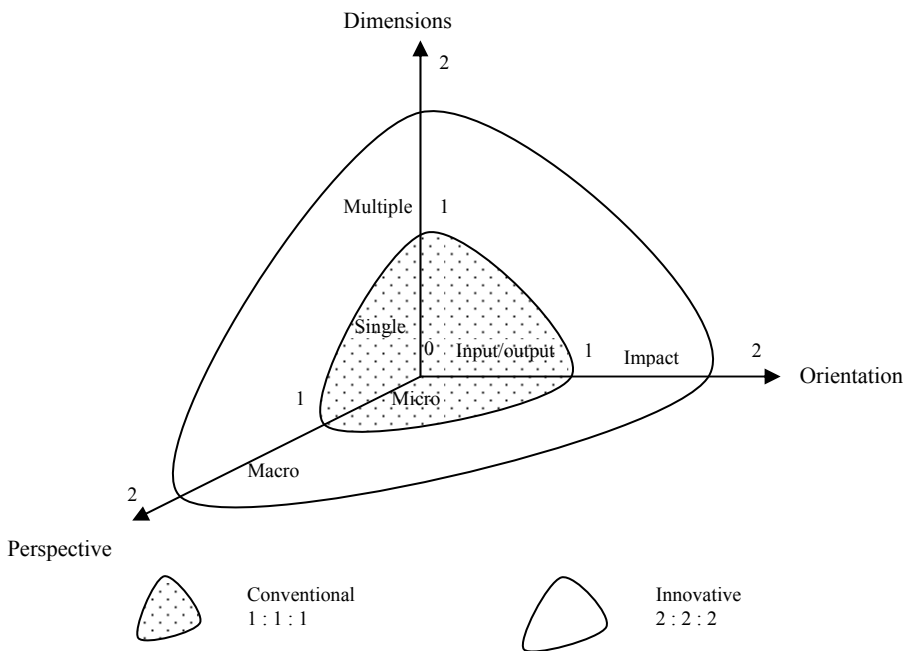


Figure 6-2: Characteristics of Corporate Social Performance measurement methods.

The studies in this dissertation contribute in several ways to the existing theory, methods and techniques, and to their application. In table 6-1 it is specified whether the contribution is a replication, an extension or an innovation to existing research.

	Replication	Extension	Innovation
Theory	X	X	x ⁴²
Methods and techniques	X		
Application	X	X	X

Table 6-1: Contributions of the dissertation

The existing theory that forms the basis for this dissertation is complemented by two contributions. The first contribution is the classification of existing

⁴² However, it concerns a rather modest contribution.

contemporary impact measurement methods (Ch 3). A second contribution is the analysis of potential drivers for the impact measurement behaviour of organisations (Ch 4). A modest theoretical innovation is the conceptualization of the potential for organisations to optimize the impact of their activities on different dimensions (Ch 2). However, the main innovation of this dissertation can be found in the application of a newly developed social impact measurement method which is subsequently applied to a case study (Ch 5).

In the following paragraph the results of the individual chapters are summarized. Then, conclusions are drawn, which build on the set of chapters that constitute the core of this dissertation. Moreover, the implications for management, academia and society are discussed.

6.2 Conclusions of individual chapters

The social impact of different organizational activities is studied throughout this dissertation. Chapter 2 focuses on the impact of Corporate Social Responsibility (CSR). Chapter 4 focuses on strategic philanthropy while Chapter 5 focuses on the activities of an individual foundation, the Netherlands Heart Foundation. This diversity of activities with social impact was deliberately chosen to illustrate that impact measurement is relevant for both the profit (Ch 2 and 4) and the non-profit sector (Ch5), and is applicable to all kinds of organisational activities.

In Chapter 2, two conditions that enable organisations to optimize the impact of their activities on different dimensions are defined. The first condition is to integrate CSR in the strategy of the firm, instead of supplementing existing strategies with add-on CSR activities. The second condition is to measure and monitor the impact and incorporate those impacts into management decisions. We distinguished three typologies in which CSR may provide impact on different levels (organizational level and societal level) and on different dimensions (economic, environmental and social); value creation, value integration and value distribution. From our research we concluded that the different types of CSR have consequences for the measurement of the social impact of these activities. Based on the results of this study we define several further research question, such as; “Which measurement methods are available to measure social impact and what are

the characteristics of these methods?” (Ch 3); “What is the actual impact measurement behavior of firms?” (Ch 4); How can social impact be measured in practice?” (Ch 5). In this sense Chapter 2 can be seen as the foundation for this dissertation.

In Chapter 3, based on the characteristics of thirty existing social impact measurement methods, the methods are classified. The characteristics of the methods used are: *focus* which can be either prospective, ongoing or retrospective; *orientation*, methods can be input or output oriented; *time frame*, methods can address a short term or a long term time frame; *perspective*, methods can use an individual, organizational or community or societal perspective; *approach*, methods can use different approaches to measure impact, i.e. process methods, impact methods, monetarisation methods; and *purposes*, methods can be used for screening, monitoring, reporting, and evaluation. Although in the literature several other frameworks, classification schemes and system of concepts exist, for social impact measurement methods a framework or classification scheme has not been developed yet. In view of the rising interest in (social) impact measurement the development of this classification of social impact measurement methods offers a way forward for managers seeking to adopt social impact measurement.

Chapter 4 researches whether or not firms measure the impact of corporate philanthropy along three dimensions – business, social, and reputation. Potential drivers - the amount of philanthropic expenditure, company size, region, and sector - for measuring impact are explored by using logistic regression. The analysis is based on longitudinal cross-sectional and cross-national data of over 500 firms listed in the Dow Jones Sustainability Index. The results show that sixty-two up to seventy-six percent of the DJSI firms measure the impact of their corporate philanthropy. Mostly measured are social impact and impact on reputation and stakeholder satisfactions. Descriptive statistics show that relatively large financial firms from Europe and North America more often measure the impact of their corporate philanthropy. The results from our analysis show that especially Mid Cap firms, firms with a market value in the \$1 billion and the \$8 billion range, and firms spending less than 0.2% of their earning before interest and taxes measure impact of their corporate philanthropy relatively less often.

From these results we conclude that firm size has a significant positive influence on impact measurement, while the amount of philanthropic expenditure also significantly contribute to the explanation whether or not firms measure the impact of corporate philanthropy.

Chapter 5 describes the results of a case study that analyses the social impact of the Netherlands Heart Foundation (NHF). A combination of a qualitative and quantitative approach to analyse the impact of the NHF is used. During 16 interviews, 8 internal and 8 external, and two discussion sessions, one internal and one external, we discussed the potential social impact of the NHF, in terms of both indicators and in terms of amounts. Based on the interview results we gathered qualitative data on the potential social impact of the NHF. The indicated potential impact categories are (1) impact on social costs, (2) impact on life expectation, and (3) impact on quality of life. The discussions during the interviews about the amount of the impact of the NHF all pointed to the same direction where the interviewees expected that there is a positive impact. However none of the interviewees could make this perception more tangible by putting an amount (in Euros or percentages) to the impact. The NHF however, wanted to extend these qualitative results with quantitative data. The quantitative analysis shows that quantifying the impact of a non-profit organisation is not a straightforward process. Many assumptions are needed to come to a quantification of the social costs and benefits and to quantify the impact of the NHF. The quantitative impact assessment should be seen as a first attempt to assess the role of a non-profit organization on a community wide goal. The result of the impact assessment of the NHF was positive and reconfirms the results of our qualitative approach. The results of this study can be used by the NHF to improve transparency, legitimacy, and their internal and external accountability. The results show clearly that the money invested in scientific research provides more value to society than the money invested in prevention and education. The NHF can also use these results for their longer term strategic decisions.

6.3 Main conclusions and discussion

Next to the results of the individual chapters some more general conclusions can be drafted.

Firstly it was found that the conceptual development, as well as the practice, of social impact measurement is still in its infancy stage. Although many methods have been developed, especially in the last ten years, with the aim of measuring the impact of an organisation upon the society, only few are actually helpful for measuring social impact as defined in this dissertation (i.e. more than outcomes). The methods explain what has to be measured but generally provide limited guidance on how to measure social impact. Although the concept of social impact is widely spread, many researchers and practitioners use the term impact while they actually refer to intentions or outputs. Taking the impact value chain as a starting point, a wide range of social impact measurement methods ought to be developed. No single tool or method can capture the whole range of social impacts, nor can it be applied for all types and sizes of organisations. Methods and frameworks should be adjusted for individual organisations, rather than for a whole sector (see also Chapter 3 and 5). This is because the activities of organisations, the objectives of social impact measurement and the impacts to be included in measurement will be different for each single organisation.

Impact measurement is not an end in itself, therefore only when managers know what they want to do with the measurement results, they can select a set of impact measures with the characteristics necessary to help them achieve these purposes. In the end, successful selection of a suitable measurement method depends on the purpose of measurement. However, without a thorough analysis of the methods it is hard to see through the features and characteristics of the existing methods. Most managers lack the overview to make such an analysis. In this dissertation an overview of methods and their characteristics is developed. In addition, as described before, the available methods do explain what to measure but not how to measure. This confronts the manager with many remaining questions related to impact measurement and restrains managers with starting the measurements of their (social) impacts.

Finally, impact measurement is still under debate. Science puts more emphasis on the difficulties and problems of impact measurement rather than to solve these problems and to work towards solutions.

Secondly it was found that measurement is often perceived as providing an objective reflection of how things are, often based on progress made relative to predetermined objectives. Current practices of performance measurement tend to focus on measuring only a part of the total impact of organisations. There is an almost exclusive focus on financial impact from an organisational perspective (Margolish & Walsh, 2003). When organisations want to take impacts into account, including unintended impact, they firstly have to identify these impacts. While input, output and outcomes are related to the organization, impact is associated with stakeholders (see figure 6-3). Therefore, stakeholders should be included in the measurement process.

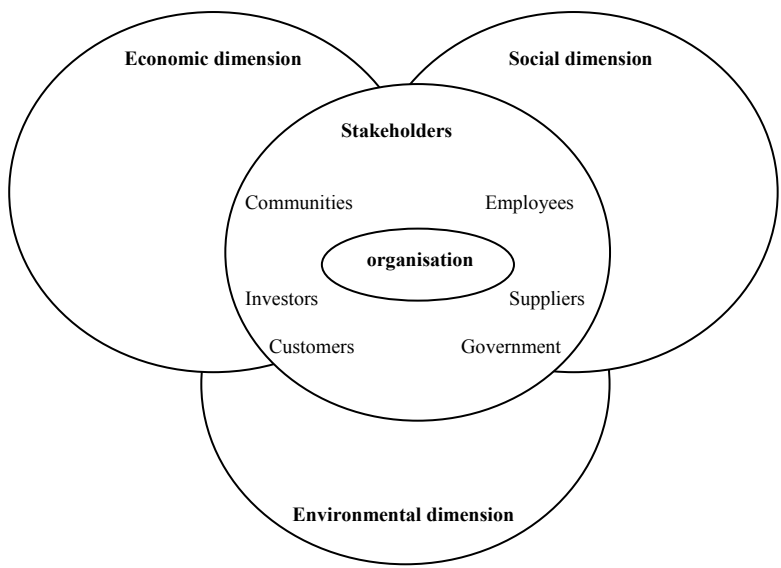


Figure 6-3: Organisations, stakeholders and the different dimensions of social impact.

There are different ways to take stakeholder perceptions into account, potentially resulting in different measurement indicators. Stakeholders can be directly

consulted, alternatively, existing certification standards, rating schemes or guidelines for sustainability reporting can be used to identify impact indicators. As only the direct stakeholder consultation approach helps to identify unintended impacts this approach is preferred. In Chapter 5 the direct stakeholder approach is used; 16 interviews and two discussion sessions were organised to identify the impact categories to be included in the impact assessment. Including the perception of different stakeholders will lead to the necessity of considering a wide range of diverse perceptions.

Taking stakeholder views as a basis for social impact measurement connects to the position that measurement is a social activity, and thus measurement criteria are socially constructed (e.g. Roberts & Scapens, 1985). Based on the experience gained through studying the theme of this dissertation, it can be concluded that they are right. The perception of what has to be measured determines the indicators to be included in the measurement. When the perception of different stakeholders is included in performance measurement, this will lead to subjective measurements.

Thirdly, it was found that the blurring boundary between intended and unintended impacts, effects activities of organisations as well as performance measurements. Organisations are often not aware of their unintended impacts. When the boundaries are blurring and organisations incorporate unintended impacts in management decisions (see for example paragraph 2.2.2) these impacts lie within the power of the organisation to deliberately keep them the way they are or change them. In this way the impacts become intended and will hopefully lead to prevention or a reduction of negative impacts. However, recognition of unintended impacts does not automatically lead organisations to solve these issues directly and make investments to prevent or reduce all negative impacts. Despite the good intentions of many organisations, still, also many examples of intended negative impact on society can be found. The boundaries are not fixed and changes over time, this also effect the need for measurement methods; measurement methods have to be flexible and adaptable over time.

It is often claimed that when impacts have to be incorporated into management decisions, the impacts should be translated into monetary units (Elkington, 1999). Theory on Health Impact Assessment (HIA) and Environmental Impact Assessment (EIA) provide several methods to translate non-monetary indicators into monetary units. Concepts like Willingness to Pay (WTP), Willingness to Accept (WTA), and Travel Cost Method (TCM) are some examples⁴³. In Chapter 5 we translated the impact categories ‘life expectation’ and ‘quality of life’ into monetary units by using a monetarised value of DALYs. Results show that this is indeed useful for internal and external communication, mainly because value in monetary terms is easily understood. The question remains however, what the actual value of this kind of monetarised impact is when this value cannot be captured by the market. While nobody actually receives or has to pay this amount of money, the monetary value does not consist of ‘real’ money. It is important to accept that absolute values of monetarised impacts, which are not directly captured by the market, may be of limited significance. It is mainly their relative values that are important for indicating and guiding strategy decisions and action. Nevertheless, monetary valuation might have an effect on the reputation of an organization. If, for example, an organization uses a value of 80.000 Euro or Dollar for a human life year, it can be perceived that they actually make a statement about the value of a life year. Fourthly it is found that organizations have to think carefully about the significance of indirectly monetarised impacts and about the potential consequences on their reputation of using these values.

Finally, it is found that triangulation is useful to strengthen the results of impact assessment. A combination of qualitative and quantitative analysis should form the basis of social impact measurements. Quantifying impact requires a lot of data and is very time and resource consuming. Qualifying impact does not provide actual data on the impact but can be used to show if there is a positive (or negative) impact. Unintended impacts can only be identified by qualitative impact analysis, e.g. interviews with stakeholders. It should be decided on a case to case basis whether a full quantification of social impact is worthwhile, which depends mostly on the purpose of the results.

⁴³ For an extensive description of these monetary valuation methods see Pearce et al. (1994, 2006).

6.4 Implications and directions for future research

Although this dissertation show many limitations and difficulties of social impact measurement, the results of this dissertation may be useful for management. First, without measuring their social impact, managers will have a limited view of their social impact. Second, as social impact will directly or indirectly contribute to the organisations bottom line, information on social impact helps managers to include this issue into their strategic decision-making. Managers not yet involved in social impact measurement, should be informed about the relevance and benefits of social impact measurement. The same holds for stakeholders who can use their power to stimulate organisations to shift from conventional measurement methods to more innovative methods that capture the holistic range of impacts. Scientific publications as well as popular and practical publications could contribute to this pressure.

As all organisation have an impact on society on several dimensions, it would be beneficial for the society when more organisations would measure their social impact. When organisations take unintended impacts into account, they will aim to increase their positive impacts and to prevent or reduce their negative impacts. Stakeholders involved in the measurement process may influence this process by using their power.

As described in the previous paragraphs, this dissertation contributed in several ways to existing research. Nevertheless, the dissertation is also accompanied by several limitations. Firstly, the only case study in this dissertation is a study on issue level. A greater variety of case studies, including different levels of analysis, are needed to verify the developed methodology. Working on social impact on an organisational level can contribute to the question whether it is actually possible to quantify social impact on an organisational level. Next to this, case studies measuring different social impacts are needed. As the NHF case is about health issues, it will be beneficial for theoretical and empirical development to perform cases on different issues such as, for example, environmental protection, culture issues or well-being issues, such as loneliness.

More interdisciplinary research into theoretical issues and problems related to social impact measurement is needed. Existing information should be collected by researching the social-economic literature extensively, as well as the environmental economic literature and by information from governmental policies. All these fields might provide small pieces of information, for example, information about how to quantify and monetize intangible results, which could be helpful when combined. New cases will also provide new opportunities to think about the theoretical problems.

Research into real social impact measurement behaviour, not only researching what companies measure - as has been done in Chapter 4 - but also how they measure social impact, would provide new insights. What kind of methods organisations use, whether they adapted a standard method to better fit their own needs, or whether they developed their own measurement method by combining several approaches, as has been done in the NHF case?

Finally, it will be interesting to research the motives behind social actions of companies. It could be expected that when a company explicitly wants to contribute to specific social issues, which is for example the case with philanthropy, these organisations will measure the impact of their activities on these specific social issues. On the other hand, when an organisation uses philanthropy for self-enlightened interest, actually aiming to enforce their own bottom-line, they will only measure the business impact of these activities. In other words, do different motives result in different levels of impact? When an organisation is genuinely motivated to contribute to society does this result in a greater positive social impact than when an organisation is solely motivated to make a profit and the contribution to society is only a by-product? Knowledge of the relation between motivation, action and impact measurement behaviour and actual impact will contribute to existing theory, because it will give insight into the workings and effects of social impact measurement.

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Nederlandse Samenvatting (Dutch Summary)

Alle organisaties hebben een sociale, ecologische en economische impact die van invloed is op mensen, hun gemeenschappen en het natuurlijke milieu. Impact omvat zowel bedoelde als onbedoelde effecten en zowel negatieve als positieve effecten. De huidige praktijk van prestatie en effectenmeting richt zich op het meten van slechts een deel van de totale impact die organisaties hebben op de maatschappij. Onderzoek naar welke impact, waarbij impact wordt onderscheiden van output en resultaten, organisatorische activiteiten hebben op de maatschappij is onderontwikkeld in de bestaande management literatuur en bedrijf & maatschappij onderzoek.

De doelstellingen van dit proefschrift zijn om een bijdrage te leveren aan het begrip van de maatschappelijke impact van organisaties, en om een kader en methodiek te bieden die maatschappelijke impact meting mogelijk maakt. Dit wordt bereikt door de volgende zeven onderzoeksvragen te beantwoorden:

1. Wat is de maatschappelijke impact van organisaties? (H1-6)
2. Hoe kan de maatschappelijke impact van organisaties worden gemeten? (H1-6)
3. Hoe kunnen bedrijfsactiviteiten waarde creëren voor het bedrijf, de maatschappij en ecosystemen? (H2)
4. Welke meetmethodieken zijn er beschikbaar om de maatschappelijke impact van organisaties te meten? (H3)
5. Wat zijn de verschillende karakteristieken van deze methodieken om maatschappelijk impact te meten? (H3)
6. Meten organisaties in de praktijk de impact van hun filantropische activiteiten en welke factoren zijn van invloed op dit meetgedrag? (H4)
7. Wat is de maatschappelijke impact van de Nederlandse Hartstichting? (H5)

De eerste twee vragen staan centraal in dit proefschrift: ze worden in alle hoofdstukken besproken. Dit proefschrift bestaat uit zes hoofdstukken: een

inleiding (H1), vier afzonderlijke artikelen (H2-H5), en conclusies (H6) (zie figuur 1-1).

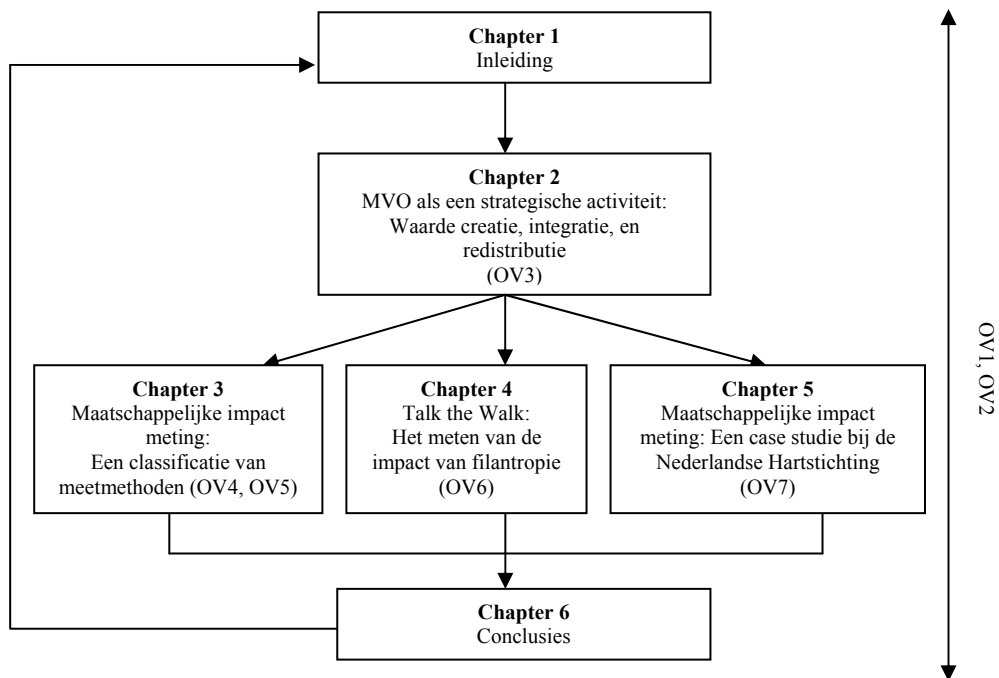


Figure A: Structuur van dit proefschrift

De maatschappelijke impact van verschillende activiteiten van organisaties wordt bestudeerd in dit proefschrift. Het eerste onderzoek (H2) richt zich op de maatschappelijke impact van Maatschappelijk Verantwoord Ondernemen (MVO). Het tweede onderzoek richt zich op strategische filantropie (H4) en het derde onderzoek richt zich op de maatschappelijke impact van een individuele stichting (H5). Er is bewust gekozen voor deze diversiteit van de activiteiten om te illustreren dat maatschappelijke impact meting van belang is voor zowel de profit als de non-profit sector, en van toepassing is op allerlei soorten activiteiten. In een vierde onderzoek zijn verschillende bestaande methoden om maatschappelijke impact te meten verzameld, geanalyseerd en geclassificeerd (H3). Dit proefschrift draagt bij aan de huidige wetenschappelijke literatuur die zich richt op maatschappelijke impact en maatschappelijke impact meting. Hiernaast worden

managers in dit proefschrift geïnformeerd over de mogelijkheden en beperkingen van maatschappelijke impact meting. De resultaten van de individuele hoofdstukken worden hieronder samengevat.

Hoofdstuk 2: MVO als een strategische activiteit: Waarde creatie, integratie, en redistributie

In de afgelopen jaren is Maatschappelijk Verantwoord Ondernemen (MVO) een steeds belangrijker concept geworden. Dit concept beschrijft de mogelijke bijdrage van bedrijven aan duurzame ontwikkeling. MVO heeft de potentie een strategische activiteit te worden dat waarde toevoegt op verschillende dimensies – het bedrijf, de maatschappij en ecosystemen- als aan twee voorwaarden wordt voldaan. De eerste voorwaarde is dat MVO moet worden geïntegreerd in de bedrijfsstrategie. De tweede voorwaarde voor strategische MVO is dat de impact van de MVO activiteit moet worden gemeten, gemonitord en geïncorporeerd in management beslissingen. Drie typen MVO worden onderscheiden waarbij MVO waarde kan leveren voor een bedrijf, de maatschappij en ecosystemen, te weten waarde creatie, waarde integratie en waarde redistributie. Voortbouwend op deze driedeling wordt onderzocht wat de consequenties van de drie verschillende typen MVO zijn voor het meten van de impact van activiteiten. Het onderzoek laat zien dat de verschillende typen MVO activiteiten een verschillende aanpak nodig hebben om de impact van de betreffende activiteiten te meten. Het hoofdstuk wordt afgesloten met conclusies, een discussie over de consequenties van de resultaten, de beperkingen van het onderzoek en suggesties voor verder onderzoek.

Hoofdstuk 3: Maatschappelijke impact meting: classificatie van meetmethoden

In dit hoofdstuk worden maatschappelijke impact meetmethoden geanalyseerd. Deze methoden zijn ontwikkelde in lijn met de veranderende behoefte aan management informatie als gevolg van de ontwikkelingen in MVO. Bestaande maatschappelijke impact meetmethoden verschillen onder andere in het gebruikte *perspectief*, de *doelstelling* en de gebruikte *benadering*. Deze verschillen maken het lastig voor een organisatie om een toepasbare meetmethodiek te selecteren. In dit hoofdstuk worden de ontwikkelingen in performance meting en het waarde denken kort geschetst. Een overzicht van bestaande maatschappelijk impact definities wordt gegeven en een lijst met maatschappelijke impact meetmethoden

is ontwikkeld. De verschillen tussen de meetmethodieken zijn geanalyseerd en de karakteristieken van de methodieken zijn gedefinieerd. Het doel van deze karakterisering is om managers te helpen een toepasbare methode te kiezen uit het brede spectrum van bestaande methodieken. Het hoofdstuk wordt afgesloten met een discussie over de theoretische en praktische resultaten en conclusies.

Hoofdstuk 4: Talk the Walk: Het meten van de impact van filantropie

Dit onderzoek beschrijft of bedrijven wel of niet de impact van hun filantropische activiteiten op drie dimensies – bedrijf, maatschappij, en reputatie en stakeholder tevredenheid - meten. Mogelijke drijfveren voor bedrijven voor het meten van de impact van filantropische activiteiten worden onderzocht. De analyse is gebaseerd op longitudinale crosssectorale en crossnationale data van meer dan 500 bedrijven die zijn geregistreerd in de Dow Jones Sustainability Index (DJSI). Een raamwerk is ontwikkeld gebaseerd op institutionele theorie, legitimiteittheorie, en concepten uit de accounting literatuur. Verwacht wordt dat de hoogte van de uitgaven aan filantropie, de bedrijfsgrootte, de locatie, en de sector van invloed zijn of bedrijven de impact van hun filantropische activiteiten wel of niet meten. Logistische regressie is gebruik om het raamwerk te testen. De resultaten laten zien dat 62% tot 76% van de DJSI bedrijven de impact van hun filantropische activiteiten meten. Met name de maatschappelijke impact en de impact op reputatie en stakeholder tevredenheid wordt gemeten door de bedrijven. De beschrijvende statistieken laten zien dat vooral grote financiële bedrijven uit Europa en Noord Amerika de impact van hun filantropische activiteiten relatief veel meten ten opzichten van kleinere bedrijven, en bedrijven uit andere regio's en sectoren. De resultaten van de logistische regressie analyse laten zien dat in het bijzonder middelgrote bedrijven en bedrijven die $< 0.2\%$ van hun winst voor rente en belasting spenderen aan filantropische activiteiten relatief weinig de impact van deze activiteiten meten. Op basis van deze uitkomsten kan worden geconcludeerd dat zowel bedrijfsgrootte als uitgaven aan filantropische activiteiten bijdragen aan de voorspelling of bedrijven wel of niet de impact van deze activiteiten meten. Het hoofdstuk wordt afgesloten met een beschrijving van de resultaten voor de theorie en praktijk.

Hoofdstuk 5: Maatschappelijke impact meting: Een case studie bij de Nederlandse Hartstichting

Non-profit organisaties zijn in toenemende mate geïnteresseerd om de impact van hun werk in kaart te brengen. De toegenomen druk voor alle organisaties om verantwoordelijkheid te nemen voor de impact van hun activiteiten en de afname van het publieke vertrouwen zijn hier mede debet aan. Een breed scala aan methodieken om maatschappelijke impact te meten is door wetenschappers, bedrijven en adviseurs ontwikkeld. De beschikbare methodieken geven vooral richting aan *wat* moet worden gemeten en niet *hoe* moet worden gemeten. Dit hoofdstuk richt zich op het daadwerkelijk meten van maatschappelijke impact; de maatschappelijke impact van de Nederlandse Hartstichting (NHS) is gemeten met behulp van een combinatie van kwalitatieve analyse en kwantitatieve analyse. Dit wordt ook wel triangulatie genoemd. Tijdens verschillende interviews en discussie sessies is de potentiële maatschappelijke impact van de NHS bediscussieerd. De impact categorieën zijn (1) impact op maatschappelijke kosten, (2) impact op levensverwachting, en (3) impact op de kwaliteit van leven. Alle geïnterviewde verwachten dat er sprake is van een positieve maatschappelijke impact van de NHS. De NHS wil echter deze kwalitatieve indicatie onderbouwen met kwantitatieve data. De ontwikkelingen in de maatschappelijke last van een acuut hartinfarct in Nederland voor de periode van 1980 tot 2005 zijn in kaart gebracht met een maatschappelijke kosten-baten studie. De maatschappelijke kosten zijn berekend op basis van de directe gezondheidskosten (o.a. behandelingskosten) en de indirecte niet-gezondheidsgerelateerde kosten (productiviteitsverliezen). De maatschappelijke baten gerelateerd aan de verbeterde kwaliteit van leven en levensduurverlenging na een acuut hartinfarct zijn berekend met behulp van gemonetariseerde DALYs⁴⁴. De resultaten van de studie tonen dat de impact van de NHS op de maatschappelijke last van een acuut hartinfarct positief is.

Chapter 6: Conclusies

Tenslotte, wordt in Hoofdstuk 6 een korte samenvatting gegevens van de algemene conclusies in relatie tot de onderzoeksvragen en doelstellingen van dit proefschrift. De beperkingen van het onderzoek worden beschreven en een

⁴⁴ Disability Adjusted Life Years

bijbehorende onderzoeksagenda voor de komende jaren wordt geschetst. Hiernaast worden de resultaten van het onderzoek en de implicaties ervan voor de wetenschap, het bedrijfsleven en de maatschappij beschreven.

Curriculum Vitae



Karen Maas (1970) finished her studies, Master of Science in Economics at the Erasmus University, in 1995. After her graduation she worked for 12 years as a (senior) consultant and project leader in the field of environmental economics, sustainability and Corporate Social Responsibility. From 2003 – 2005 she also worked part-time as scientific researcher at the Erasmus Centre for Sustainability and Management (ESM). Since September 2007 she started working at the department of Applied Economics of the Erasmus School of Economics. She is involved with the Erasmus Center for Strategic Philanthropy and is the coordinator of the minor Strategic Philanthropy. In her research she focuses on the social impact of organizations, CSR activities and philanthropy and on Corporate Social Performance.

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CORPORATE SOCIAL PERFORMANCE FROM OUTPUT MEASUREMENT TO IMPACT MEASUREMENT

All organisations have social, environmental and economic impacts on people, their communities and the natural environment. These impacts include both intended and unintended, negative and positive, effects. Current practice in performance measurement tends to focus on measuring only a part of the total impact that organisations have on society. The research about the impact, as distinct from output and outcomes, organisational activities have upon the society, is underdeveloped in existing management and business & society research. Therefore, the objectives of this dissertation are to contribute to the understanding of the social impact of organisations, and to propose a framework and methodology that facilitates social impact measurement. The social impacts of different organizations, both for profit and non-profit, and different organisational activities, are studied throughout this dissertation. Where the first study focuses on the social impact of Corporate Social Responsibility (CSR), the second study focuses on Strategic Philanthropy. The third study focuses on the social impact of an individual foundation. Studying this variety of organisations and organizational activities allows for a rigorous analysis of social impact, while illustrating that social impact measurement is relevant for both the profit and the non-profit sector, and is applicable to all kinds of organisational activities. Moreover, in a fourth study, different existing social impact measurement methods are collected, analysed and classified. This dissertation complements the existing body of research that focuses on Corporate Social Performance and social impact measurement. Additionally, it informs practitioners and managers about the possibilities and limitations of social impact measurement.

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