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Date 31/10/2012

SURNAME	Lisi	NAME	Irene Eleonora
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Overview of the dissertation

Over the last decades, a lively debate on the role of corporations in society has been generated (Margolis, and Walsh 2003; Greening, and Turban 2000; Donaldson, and Preston 1995; Freeman 1984) and it has attracted ever growing interest, both from an academic and a practitioners' viewpoint. Confronted with ever escalating pressures from multiple sources (governments, social rating agencies, NGOs, public opinion and so on) to operate in a socially responsible fashion (Porter, and Kramer 2006), businesses have started to acknowledge the importance of Corporate Social Responsibility (CSR)¹ and a wide variety of initiatives have come to light (Basu, and Palazzo 2008; Zollo 2008). Among these initiatives, Social and Environmental Accounting (SEA)² has assumed a particularly relevant position. Indeed, over the last 20 years, several thousand companies have started to disclose information about their social and environmental performance and the number of published social, environmental or

¹ It was the Green Paper by the European Commission (2001a) that introduced the world to the concept of Corporate Social Responsibility (CSR), “a concept whereby companies integrate social and environmental concerns in their business operations and in their interaction with their stakeholders on a voluntary basis. It is about enterprises deciding to go beyond minimum legal requirements ... in order to address societal needs” (European Commission 2006a).

² According to Owen (2008), the task of providing a definition of social and environmental accounting is not an easy one, given that there appears to be no clear agreement yet as to what actually constitutes social and environmental accounting research. However, some guidance concerning themes coming under its ambit is provided by Deegan and Soltys (2007). Broadly, these are reviews of social, environmental and sustainability reporting, including analysis of motivations and determinants; stakeholder and “market” reactions to disclosure; the role of accounting in promoting, or undermining, the environment and society; social and environmental audits and theory development to explain or understand practice.

sustainability³ reports is rapidly growing (Spence 2007). For instance, KPMG (2011) indicates that 95% of the firms included into the Global Fortune 250 list are now issuing corporate responsibility reports, up from about 50% in 2005.

Academic research on the topic has also flourished (Durden 2008). This literature - variously named as social accounting, sustainability accounting or social and environmental accountability (Gray 2002; Deegan 2002) - has so far mainly focused on the external aspects of SEA, providing valuable insights on the determinants and managerial motivations underpinning social and environmental reporting initiatives (Contrafatto 2009; Owen 2008; Andreaus 2007; Rusconi 2006; Adams 2002; Adams, Hill, and Roberts 1998; Gray, Kouhy, and Lavers 1995). Only more recently SEA research started to consider also the internal aspects of social and environmental accounting. In particular, some case-studies have been conducted on the challenges and implications for Management Control Systems (MCS)⁴ of incorporating a social and environmental dimension (Durden 2008; Adams, and McNicholas 2007; Norris, and O'Dwyer 2004). Moreover, several conceptual frameworks have been proposed for the integration of social and environmental responsibility concerns into performance measurement systems (cf., for example, Bonacchi, and Rinaldi 2007; Cantele 2006; Pistoni 2003, and references therein). Being this stream of literature at its infancy, however, it suffers from a lack of empirical evidence. Thus, very little is still known

³ The sustainability concept came to particular prominence with the Brundtland Report of 1987 which defined it as “development that meets the needs of the present without compromising the ability of future generations to meet their own needs” (World Commission on Environment and Development 1987).

⁴ A MCS is seen to embrace processes “by which managers influence other members of the organization to implement the organization’s strategies” (Anthony, and Govindarajan 1998).

about how companies internally control, monitor and discipline their social and environmental initiatives (Durden 2008; Margolis et al. 2003; Ferreira, and Moulang 2010) and calls have been made to foster management accounting research in the area (Owen 2008; Gray 2002).

This gap is particularly unfortunate given the important role that properly designed MCS may play in helping firms better facing their social and environmental responsibilities. Indeed, providing social and environmental performance measures to external stakeholders in social reports is supposed to be ineffective if these data are not also used for internal decision-making and control purposes (Adams 2002; Sinclair-Desgagné, and Gabel 1997). These claims assume particular relevance in today's climate of heightened scrutiny toward corporate behaviour following the recent spate of corporate scandals, accounting frauds, and dubious business conduct (Basu et al. 2008). In particular, SEA practices have been variously described as impression management techniques (Neu, Warsame, and Pedwell 1998) or 'window dressing'/'greenwashing' phenomena (Laufer 2003) aimed at maximizing perceptions of legitimacy (Deegan 2002) but with little - if any - effects on the real work of organizations (Moerman, and Van Der Laan 2005; Adams 2004; O'Dwyer 2005, 2003; Larrinaga-Gonzalez, and Bebbington 2001). Starting from these premises, the broad aim of this dissertation is to enrich our understanding of the design and functioning of the MCS adopted by organizations in relation to their CSR strategies, an understanding which is – as noticed above - particularly limited. In addition, the dissertation aims at complementing the institutional-constructivist understanding of the SEA

phenomenon characterizing much of extant SEA research⁵ by focusing on the substantive roles MCS may play in helping firms better facing their social and environmental responsibilities.

Given the breadth and complexity of the topics under investigation, this dissertation applies both qualitative and quantitative approaches which contribute pursuing the above mentioned research objectives through both nuanced, in-depth insights emerged out of a multiple-case study and large-scale empirical analyses. Specifically, the first essay of the dissertation is devoted to the analysis of qualitative data collected across four Italian companies promoting a strong social responsibility image. The second and third essays are instead based upon a web-survey conducted across a sample of 76 Italian firms under the sponsorship of SDA Bocconi School of Management and of the Italian branches of two of the world's leading bodies in the field of management systems certification services, Bureau Veritas and DNV Business Assurance.

The three essays are outlined as follows.

The first essay - "*Exploring the integration of Management Control Systems for CSR: a strategic orientation approach*" - proposes a framework to explain 'how' and 'why' organizations that are attempting to operate in a socially responsible manner are also adopting ad hoc (i.e. CSR-related) MCS. Specifically, regarding the 'how' dimension, the spare literature on the topic consistently suggests that companies embracing the CSR agenda not only should adopt ad hoc (i.e. CSR-related) MCS, but also should strive to

⁵ Indeed, the insitutional-constructivist perspective has been fruitfully applied within SEA research (cf., for instance, O'Dwyer, Owen, and Unerman 2011; Bebbington, Higgins, and Frame 2009; Chen, and Roberts 2010; Larrinaga-Gonzalez 2007) to investigate the ceremonial and symbolic roles SEA initiatives may play in signalling ritual conformity to intitutionalized myths (Meyer, and Rowan 1977).

integrate them within their overall MCS (Durden 2008; Henri, and Journeault 2010), in order to make sure they are really effective in orienting decisions and actions across the whole organization. Indeed, by being incorporated within already existing, legitimate and enforced organizational processes, CSR-related MCS can be expected to be more promptly endorsed and to actually assume those decision-making and decision-influencing roles ascribed to planning and control systems (Luft, and Shields 2003). On the contrary, if CSR-related MCS remain disconnected from the company's overall MCS, they will be likely "marginalized" – i.e. confined to the specialized structures in charge of CSR strategies and activities – without any substantial impact on organizational everyday workings (Weaver, Trevino, and Cochran 1999). However, while there is considerable normative support for an integrative approach to the design of CSR-related MCS, there is little empirical research that examines the details of this integration dimension, the processes through which such integration can be actually achieved and the internal dynamics favoring or hindering it. Therefore, our understanding of the mechanisms through which such integration can be actually achieved remains particularly limited.

With respect to the 'why' issue, recent work in SEA research points to the need to shift the focus of empirical investigation from external to internal factors (Adams 2002) and in particular to managerial interpretations, beliefs and sensemaking processes with respect to CSR (O'Dwyer 2003; 2002). Also within CSR literature more in general several scholars hold that, when assessing a firm's decision-making with respect to social and/or environmental issues, it is particularly important to account for managerial individual beliefs and perceptions (Basu et al. 2008; Plaza-Úbeda et al. 2009;

Sharma 2000; Wood 1991)⁶. With respect to the environmental dimension of CSR, some studies by Sharma and colleagues (Sharma 2000; Sharma, Pablo, and Vredenburg 1999) illustrate the usefulness of such an approach by showing that companies which perceive environmental issues as opportunities are more likely to exhibit a voluntary environmental strategy in comparison with companies perceiving environmental issues as threats. Within SEA literature, however, the influence of managerial perceptions, predispositions and motivations with respect to CSR has been up to now largely unexplored as determinant of SEA initiatives. This gap is particularly surprising given that, within management accounting research, variables like top management commitment or support towards management accounting innovations (for example activity-based costing) are well recognized as main determinants of the success of management accounting implementation processes (cf. Luft et al. 2003, and references therein).

Starting from the above mentioned arguments, the first essay develops a conceptual framework of the design and functioning of CSR-related MCS which focuses specifically on a variable expressing managerial beliefs and motivations with respect to CSR, called CSR strategic orientation. In particular, the essay explores the way in which CSR strategic orientation affects the degree of integration of CSR-related MCS within companies' overall MCS.

⁶ Indeed, the CSR arena is a particularly complex domain, in which external, institutional pressures drive many corporate responses (Campbell 2007; Jennings, and Zandbergen 1995) but a clear understanding of the financial effects of such responses is still missing (McWilliams, and Siegel 2001; Margolis et al. 2003; Orlitzky, Schmidt, and Rynes 2003). Therefore, managers are left with little guidance to estimate the financial effects of their CSR strategies. In such a setting, there is inevitably still a large room for managerial interpretations (Sharma 2000; Jennings et al. 1995).

Empirically, the essay is based on a comparative case study approach (Yin 1994) and in particular on what Keating (1995) refers to as “theory illustration” case, aimed at establishing the plausibility of a preliminary conceptual model developed based on a review of the literature. The cases were selected adopting a theoretical sampling approach (Patton 2002; Scapens 1990). In particular, given the purpose to explore CSR-related MCS, I selected four Italian companies promoting a strong social responsibility image and publicly adhering to CSR principles.

Findings from the fieldwork provide support for the proposed theoretical framework. Indeed, CSR strategic orientation emerges as relevant variable able to explain the observed variation in the configurations of CSR-related MCS. More specifically, this essay’s results suggest that, according to the nature of a company’s CSR strategic orientation (whether proactive or reactive), CSR-related MCS tend to be integrated within the overall MCS to a higher or lower extent, with resulting differential effectiveness as decision-making and decision-influencing tools.

This essay contributes to SEA and management accounting literature in several ways. Generally speaking, it provides new insights concerning how companies internally control their CSR initiatives, answering to a call for more management accounting research within SEA literature (Owen 2008; Gray 2002). In particular, by theoretically deriving and empirically validating a definition and measurement strategy for the degree of integration of CSR-related MCS within a company’s overall MCS, it offers a framework for distinguishing among the different approaches (more or less integrative) companies may adopt with respect to their CSR control mechanisms. In addition, by introducing CSR strategic orientation as new variable capable of explaining the observed variation in CSR-related MCS, it demonstrates the

usefulness of a focus on managerial interpretations, beliefs and sensemaking processes in studying companies' approaches to CSR (Basu et al. 2008; O'Dwyer 2003). Such a focus could be fruitfully applied to the examination of other SEA activities, for example SEA reporting.

The second and third essays contribute to the general purpose of this dissertation – i.e. enriching our understanding of the MCS adopted by organizations in relation to their CSR strategies - by focusing this time on a specific but particularly relevant subset of companies' overall MCS, the performance measurement systems. In particular, the two essays develop a conceptual framework on the determinants and performance effects of the performance measurement systems adopted by companies to manage their environmental (essay 2) and social (essay 3) responsibility activities. The proposed models are then empirically tested using data collected through a large-scale, web-based survey conducted across a sample of Italian firms.

Specifically, the second essay - “*Determinants and performance effects of Environmental Performance Measurement Systems*” – contributes to the emerging field of research in environmental management accounting, which is defined as “the management of environmental and economic performance through the development of appropriate environment-related accounting systems and practices” (IFAC 2005). Environmental management accounting is expected to play an important role in helping firms better facing their environmental responsibilities (Henri et al. 2010; Frost, and Wilmshurst 2000; Bartolomeo et al. 2000) and therefore attaining those economic benefits which have been said to derive from environmental strategies and initiatives, such as cost reductions through ecological efficiencies, the development of green markets and first-mover advantage, better community relations, and improved image (Ferreira et al. 2010; Henri et al. 2010;

Perego, and Hartmann 2009). However, research on environmental management accounting is still at its infancy; as noticed by Henri et al. (2010), most of this literature is either conceptual or descriptive and often based on a limited number of case studies. While this literature contributed to the further development of tools (for a review, cf. Bonacchi et al. 2007), there is a need for large-scale analyses empirically testing whether the expected or theoretically derived relationships are really present, in order to assist businesses in relation to resource allocation and decision-making (Ferreira et al. 2010).

The second essay of this dissertation goes specifically in this direction, by developing and testing a conceptual framework on the determinants and performance effects of an important part of environmental management accounting, i.e. environmental performance measurement systems. Environmental performance measurement systems refer to the extent to which environmental performance measures are used by managers for various purposes (Henri et al. 2010). In particular, this essay explores the extent to which environmental performance measures are used within an organization for both decision-making and control purposes, as an initial attempt to discriminate performance measurement systems that extensively rely upon environmental metrics from situations in which the role played by these indicators appears to be negligible.

Based on a broad review of different streams of literature relevant to the topic under investigation, the proposed theoretical model examines how the three main drivers of corporate environmentalism - i.e. expected competitive advantage (the 'business case' rationale), stakeholders' concern and top management environmental commitment (Banerjee, Iyer, and Kashyap 2003) - influence the use of environmental performance measures for internal

decision-making and control, and how such use impacts companies' environmental and economic performance (Henri et al. 2010).

The framework is tested by running Partial Least Squares (PLS) analyses (Chin, and Newsted 1999; Chin 1998) on 76 usable questionnaires collected through the above mentioned web-based survey.

Overall, the findings suggest the model has good predictability. Concerning the determinants of environmental performance measurement systems, expected competitive advantage is found to be significantly associated with the use of environmental performance measures for decision-making and control, as hypothesized. This result confirms the idea that the 'business case' for corporate environmentalism is the most influential motivation behind corporate adoption of environmental initiatives and strategies (Porter et al. 2006; Plaza-Úbeda et al. 2009). Similarly, top management environmental commitment is also significantly associated with the use of environmental performance measures for decision-making and control, in support of those claims emphasizing the paramount importance of a strong and committed leadership in bringing about social and environmental improvements (Hemingway, and Maclagan 2004; Agle, Mitchell, and Sonnenfeld 1999). Finally, a positive relationship between stakeholders' concern and the use of environmental performance measures is also supported by the data, even if the strength of this link appears lower as compared to the other two motivations. This result contrasts with the 'greenwashing' argument (Laufer 2003) according to which external pressures concerning the natural environment are mainly associated with legitimizing strategies aimed at restoring or enhancing corporate image – for example through external environmental disclosures - but without any real effect on companies' business operations (Larrinaga-Gonzalez et al. 2001; O'Dwyer 2003, 2005).

Coming to the performance effects of environmental performance measurement systems, the results show that, as expected, the use of environmental performance measures for decision-making and control is significantly associated with environmental performance and, through this, with economic performance. This finding confirms the important role played by environmental performance measurement and control systems in helping managers improving their companies' environmental footprint (Judge, and Douglas 1998; Klassen, and Whybark 1999) and, indirectly, also the bottom line (Henri et al. 2010).

This essay contributes to SEA and management accounting literature in several ways. Generally speaking, it contributes to the emerging field of environmental management accounting by advancing our – up to now particularly limited - understanding of one important component of environmental management accounting systems, namely environmental performance measurement systems. In particular, the study is among the first to investigate the motivations behind corporate adoption of such systems. In so doing, it also contributes to the 'greenwashing' debate in SEA research by showing that, contrary to diffused allegations, increasing external pressures towards corporate environmentalism are associated with substantive activities such as the use of environmental performance measures for internal decision-making and control. In addition, by showing that there is a positive relationship among a company's environmental performance and its bottom line, this investigation contributes to the so-called 'ecoefficiency' debate in environmental management literature (King, and Lenox 2002; Porter, and Van der Linde 1995a; Porter 1991; Porter, and Van der Linde 1995b) and more generally to that vast stream of studies in CSR literature concerning the relationship between corporate social performance and economic

performance (Margolis et al. 2003; Orlitzky et al. 2003). Finally, by including in the model also two criterion variables like environmental and economic performance, this study contributes also to management accounting research in general, in which the so-called selection/congruence models (Luft et al. 2003; Chenhall 2003) are generally based on the assumption that a proper fit among contextual variables and well designed measurement and control systems enhances firms' performance but then this assumption is often not explicitly tested (Gerdin 2005; Luft et al. 2003).

The third essay – *“Determinants and performance effects of Social Performance Measurement Systems”* - applies the second essay's theoretical model to investigate the determinants and performance effects of social performance measurement systems, by shifting the focus of analysis from the environmental to the social dimension of the CSR concept. This is a particularly interesting topic given that the above mentioned paucity of empirical research on the internal aspects of SEA - i.e. on the MCS adopted by organizations in relation to their CSR strategies - is even more evident as far as the social (as opposed to the environmental) dimension of CSR is concerned. Indeed, with respect to the environmental side, starting from the mid-Nineties the area of environmental management accounting has been introduced, as already noticed. On the contrary, the challenges and implications of integrating social responsibility concerns into a company's management accounting and control systems have been up to now almost completely neglected.

This is particularly unfortunate also in light of the peculiarities of the social domain, which is even broader, softer and less easily quantifiable than the environmental one. Indeed, under the label 'social' a wide range of specific topics are included, such as labor practices (i.e., occupational health and

safety), human rights (i.e., child labor), society (i.e., relations with local communities), product responsibility (i.e., customer health and safety). Moreover, social initiatives and performance tend also to be less easily quantifiable than environmental ones⁷. Therefore, empirical research focusing on the challenges and implications of integrating social responsibility – as opposed to environmental - concerns into a company's management accounting and control systems is particularly warranted.

The third essay of this dissertation goes specifically in this direction, by adapting to the social dimension under consideration the theoretical model developed by the second essay in order to investigate, this time, the determinants and performance effects of social performance measurement systems. In parallel with the second essay, social performance measurement systems refer to the extent to which social performance measures are used by managers for both decision-making and control purposes. More specifically, the theoretically derived framework posits that expected competitive advantage (the 'business case' rationale), stakeholders' concern and top management social commitment positively influence the use of social performance measures for internal decision-making and control, and that such use positively impacts companies' social and economic performance.

⁷ Indeed, corporate environmental activities (e.g. investments in state-of-the-art technologies to abate emissions) and performance (e.g., toxic emissions levels, materials consumption, waste produced) can be measured quite precisely. In this respect, several models and tools have been developed for computing the environmental footprint (the carbon footprint, water footprint and so on and so forth) of companies, some of which are even available for free on the web. The European Union Emissions Trading System is meant to quantify, in monetary terms, companies' environmental externalities. With respect to the social dimension of CSR, nothing similar is available.

Like in the second essay, the model is empirically tested by running Partial Least Squares (PLS) analyses (Chin et al. 1999; Chin 1998) on the 76 usable questionnaires collected through the same web-based survey.

Results parallel very closely those from the second essay as far as the performance effects of social performance measurement systems are concerned. Indeed, as expected, the use of social performance measures is significantly associated with social performance and, through this, with economic performance, in support of the view that proper performance measurement systems help managers improving their companies' social performance and, indirectly, also the bottom line. Concerning the determinants of social performance measurement systems, results also remind those of the second essay regarding expected competitive advantage and top management social commitment, both of which are significantly associated with the use of social performance measures. An interesting difference emerges instead with regard to the relationship among stakeholders' concern and social performance measures' use, which appears to be insignificant in the context of the present study, contrary to what expected. This result provides some support for the 'window dressing' argument according to which external pressures concerning firms' social responsibilities are mainly associated with façade, legitimizing activities (Deegan 2002) aimed at restoring or enhancing corporate image - for example the publication of a CSR report - but without any real effect on companies' business operations (Adams 2004; Moerman et al. 2005; O'Dwyer 2005). This unexpected finding opens up avenues for future research. In particular, it could be interesting to explore in details the motivations behind the differential influence that stakeholders' concern exerts on companies' performance measurement systems in the

environmental domain as opposed to the social responsibility one. The third essay advances a plausible explanation in this respect, which could be refined and verified by future work.

This essay contributes to SEA and management accounting literature in several ways. In general, it contributes to SEA research by shifting the focus of analysis: - from external reporting to internal decision-making and control; and - from the environmental to the social dimension of CSR. In particular, the study is the first to empirically investigate both the determinants of social performance measures' use for decision-making and control and the effects of such use on social and economic performance. In so doing, it also contributes to the 'window dressing' debate in SEA research (Adams 2004; Larrinaga-Gonzalez et al. 2001; O'Dwyer 2003, 2005; Moerman et al. 2005) by showing that, in the social responsibility domain, increasing external pressures concerning CSR are not sufficient in ensuring the integration of social and ethical concerns into companies' decision-making and control processes. Finally, by showing that there is a positive relationship among a company's social performance and its bottom line, this investigation contributes to that vast stream of studies in CSR literature concerning the relationship between corporate social performance and economic performance (Margolis et al. 2003; Orlitzky et al. 2003).

Finally, some general conclusions to the overall dissertation can also be drawn. The three essays, indeed, all contribute - from different perspectives and by applying different methodologies - to enrich our limited understanding of the design and functioning of the MCS adopted by organizations in relation to their CSR strategies. In particular, they provide us with both detailed, rich qualitative data and large scale empirical evidence on the phenomenon. In so doing, this dissertation has also important managerial

implications. Indeed, it provides accountants in business and other practitioners with interesting insights: - on the challenges of designing CSR-related MCS and of integrating them within their companies' overall MCS (essay 1); and - on the performance benefits associated with a specific but particularly relevant subset of such systems, namely social and environmental performance measurement systems (essays 2 and 3). These insights are particularly valuable given, on the one hand, the already noticed striking paucity of empirical evidence on the topic and, on the other hand, the ever escalating pressures companies are facing with respect to their social and environmental responsibilities.

Theoretically, the results coming out of this dissertation better qualify the diffused diffidence and criticisms towards companies' CSR public commitments and disclosures (the so-called 'window dressing' or 'greenwashing' concerns) by showing under what conditions and motivations CSR-related MCS substantively shape companies' internal decision-making and control processes and contribute to enhanced social, environmental and economic performance.

A single doctoral dissertation can only seek to scratch the surface of some of the complexities of MCS, particularly when these systems refer to such a multifaceted and debated arena as CSR (Campbell 2007; Margolis et al. 2003; McWilliams et al. 2001; Jennings et al. 1995). As research advances, certainly more fine-grained classifications, descriptions and dimensions of MCS for CSR can be developed. Future research can also enlarge the set of variables affecting the adoption and design of such systems and their effectiveness in substantively influencing organizational actions and, therefore, performance. In particular, interesting new insights could emerge

by adopting a longitudinal approach to investigate how such processes unfold over time.

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Exploring the integration of Management Control Systems for CSR: a strategic orientation approach

*Irene Eleonora Lisi*⁸

*Angelo Ditillo*⁹

Abstract

Little research in social and environmental accounting has focused specifically on management control issues. This paper aims to start considering such issues. It proposes a framework to explain how and why variation arises in the Management Control Systems (MCS) settled up by organizations in relation to their Corporate Social Responsibility (CSR) activities. In particular, we investigate the way in which a company's CSR strategic orientation affects the degree of integration of CSR control mechanisms within its overall MCS. A field research conducted in four companies promoting a strong social responsibility image supports the relevance of CSR strategic orientation in explaining the observed variation in CSR control mechanisms' configurations. The paper concludes by suggesting some avenues for future research opened up by this work.

1. Introduction

Over the last three decades, a lively debate on the role of corporations in society has been generated (Donaldson et al. 1995; Margolis et al. 2003; Greening et al. 2000; Freeman 1984) and it has attracted ever growing

⁸ PhD Candidate in Business Administration and Management, Università Bocconi, Accounting Department. E-mail: irene.lisi@phd.unibocconi.it.

⁹ Associate Professor of Management Accounting and Control, Università Bocconi, Accounting Department. E-mail: angelo.ditillo@unibocconi.it.

interest, both from an academic and a practitioners' viewpoint. Confronted with ever escalating pressures from multiple sources (governments, NGOs, public opinion and so on) to operate in a socially responsible fashion, businesses have started to acknowledge the importance of Corporate Social Responsibility (CSR)¹⁰ and a wide variety of initiatives have come to light (Basu et al. 2008). Among these initiatives, Social and Environmental Accounting (SEA)¹¹ has assumed a particularly relevant position. Indeed, over the last 20 years, several thousand companies have started to disclose information about their social and environmental performance and the number of published social, environmental or sustainability¹² reports is rapidly growing (KPMG 2011).

Academic research on the topic has also flourished (Durdin 2008). This literature, variously named as social accounting, sustainability accounting or social and environmental accountability (Gray 2002; Deegan 2002), has so far mainly focused on the external aspects of SEA, in particular on the

¹⁰ “Corporate Social Responsibility (CSR) is a concept whereby companies integrate social and environmental concerns in their business operations and in their interaction with their stakeholders on a voluntary basis. It is about enterprises deciding to go beyond minimum legal requirements...in order to address societal needs” (European Commission 2006a).

¹¹ According to Owen (2008), the task of providing a definition of social and environmental accounting is not an easy one, given that there appears to be no clear agreement yet as to what actually constitutes social and environmental accounting research. However, some guidance concerning themes coming under its ambit is provided by Deegan and Soltys (2007). Broadly, these are reviews of social, environmental and sustainability reporting, including analysis of motivations and determinants; stakeholder and “market” reactions to disclosure; the role of accounting in promoting, or undermining, the environment and society; social and environmental audits and theory development to explain or understand practice.

¹² The sustainability concept came to particular prominence with the Brundtland Report of 1987 which defined it as “development that meets the needs of the present without compromising the ability of future generations to meet their own needs” (World Commission on Environment and Development 1987).

determinants of social and environmental disclosures (Owen 2008; Adams 2002; Adams et al. 1998; Gray et al. 1995). There is, however, a general lack of research examining the internal aspects of SEA, i.e. the design and functioning of the Management Control Systems (MCS)¹³ settled up by organizations in relation to their CSR strategies and activities. Indeed, very little is still known about how companies internally control, monitor and discipline their social initiatives (Durden 2008; Margolis et al. 2003; Ferreira et al. 2010) and recent calls have been made to foster management accounting research in the area (Owen 2008; Gray 2002).

In particular, one area that has not been investigated in depth is ‘how’ and ‘why’ organizations that are attempting to operate in a socially responsible manner are also adopting ad hoc (i.e. CSR-related) MCS.

With respect to the ‘how’ dimension, the sparse literature on the topic consistently makes reference to the importance that companies embracing the CSR agenda integrate CSR-related MCS within their overall MCS, to regularly monitor whether their business operations are run in accordance with CSR goals (Durden 2008; Henri et al. 2010). Several conceptual frameworks have been also proposed for the integration of social and environmental responsibility concerns into performance measurement systems (for a review, cf. Bonacchi et al. 2007). However, given the mainly prescriptive stance of this (scarce) literature, our understanding of the mechanisms through which such integration can be actually achieved remains particularly limited. Interestingly, this gap extends also to CSR literature

¹³ A MCS is seen to embrace processes “by which managers influence other members of the organization to implement the organization’s strategies” (Anthony et al. 1998).

more in general which, according to Maon and colleagues (2009), has left largely unexplored CSR design and implementation processes.

With respect to the ‘why’ dimension, recent contributions in SEA literature point to the need to shift the focus of empirical investigation from external to internal factors (Adams 2002) and in particular to managerial interpretations, beliefs and sensemaking processes with respect to CSR (O’Dwyer 2002; O’Dwyer 2003). Similar claims characterize also CSR literature more in general, with several scholars holding that, when assessing a firm’s decision-making with respect to social and/or environmental issues, it is particularly important to account for managerial individual beliefs and perceptions (Basu et al. 2008; Plaza-Úbeda et al. 2009; Sharma 2000; Wood 1991)¹⁴. With respect to the environmental dimension of CSR - work by Sharma and colleagues (Sharma 2000; Sharma et al. 1999) illustrate the usefulness of such an approach by showing that companies which perceive environmental issues as opportunities are more likely to exhibit a voluntary environmental strategy in comparison with companies perceiving environmental issues as threats. Within SEA literature, however, the influence of managerial perceptions, predispositions and motivations with respect to CSR has been up to now largely unexplored as determinant of SEA initiatives. This gap is particularly surprising given that, within management accounting research, variables like top management commitment or support towards management accounting innovations (for example activity-based costing) are well

¹⁴ Indeed, the CSR arena is a particularly complex domain, in which external, institutional pressures drive many corporate responses (Campbell 2007; Jennings et al. 1995) but a clear understanding of the financial effects of such responses is still missing (McWilliams et al. 2001; Margolis et al. 2003; Orlitzky et al. 2003). Therefore, managers are left with little guidance to estimate the financial effects of their CSR strategies. In such a setting, there is inevitably still a large room for managerial interpretations (Sharma 2000; Jennings et al. 1995).

recognized as main determinants of the success of management accounting implementation processes (cf. Luft et al. 2003, and references therein).

Starting from these premises, the objective of this paper is to develop a conceptual framework of the design and functioning of CSR-related MCS by focusing specifically on a variable that expresses managerial beliefs and motivations with respect to CSR, called CSR strategic orientation. In particular, the aim is to analyze the way in which CSR strategic orientation affects the degree of integration of CSR-related MCS within companies' overall MCS.

Thus, the main research questions orienting our investigation are: How do companies design and implement CSR-related MCS and, in particular, how and to what extent do they integrate them within their overall MCS? How does CSR strategic orientation affect these design choices?

From an empirical point of view, we conducted in-depth, comparative case studies to establish the plausibility of the preliminary conceptual model developed based on a review of the literature. The cases were selected adopting a theoretical sampling approach (Patton 2002; Scapens 1990). In particular, given our original purpose to explore CSR-related MCS, we selected four Italian companies promoting a strong social responsibility image and publicly adhering to CSR principles.

Findings from the fieldwork provide support for our theoretical framework. Indeed, CSR strategic orientation emerged as relevant variable able to explain the observed variation in the configurations of CSR-related MCS, while other variables more traditionally investigated within SEA and CSR literature - such as size (Ferreira et al. 2010; Durden 2008; Adams et al. 1998; Sharma 2000; Aragòn-Correa 1998), industry membership (Ferreira et al. 2010; Adams et al. 1998; Banerjee et al. 2003) or business strategy

(Aragòn-Correa 1998) - were not useful in making sense of our empirical evidence.

This work contributes to SEA and management accounting literature in several ways. In general, it advances our understanding of the internal control mechanisms associated with the - much more investigated - social and environmental external reporting initiatives, thus answering to the call for more management accounting research in the area (Owen 2008; Gray 2002). In particular, it proposes and empirically applies a way to distinguish the different approaches (i.e., more or less integrative) companies may adopt when designing and implementing their CSR-related MCS. Finally, by introducing CSR strategic orientation as determinant of the observed variation in CSR control systems, it confirms the fruitfulness of a focus on managerial interpretations, beliefs and sensemaking processes in studying companies' approaches to CSR (Basu et al. 2008; O'Dwyer 2003).

The remainder of the paper is organized as follows. Section 2, by means of a brief review of relevant prior research in SEA, CSR and management accounting literature, sets down the conceptual basis we use to develop a preliminary proposition linking CSR strategic orientation and the degree of integration of CSR-related MCS. Section 3 clarifies the research methods. Section 4 describes the within-case analysis and section 5 presents the between-case analysis and discussion of the findings. The final section raises implications for theory and practice, acknowledges limitations of the study, and offers directions for further research.

2. Theoretical background

2.1 Social and environmental accounting research and MCS design: the quest for integration

Starting from the early 1970s, SEA research became established as a substantial discipline in its own right and started attracting increasing scholarly attention, as the number of review papers appearing in recent years demonstrates (cf, for example, Owen 2008; Gray 2002; Deegan et al. 2007; Gray et al. 1995). According to the conceptual classification provided by Durden (2008), SEA research appears to follow two main themes. The first theme adopts a normative perspective and is concerned with the obligations of organizations in relation to the provision and disclosure of social and environmental information (Gray, Owen, and Maunders 1991). The second theme adopts a managerial perspective and explores issues concerned with the information organizations choose to produce and disclose to stakeholders and how this may be used to legitimize the existence of the organization (Deegan 2002). Independently of the normative or managerial perspective employed, the context of analysis of SEA literature tends to be external reporting, whereas there is only limited consideration of social responsibility issues and social accounting from the perspective of how it should fit or align with an organization's MCS (Norris et al. 2004; Ferreira et al. 2010).

However, from a normative perspective, organizations that attempt to operate in a socially responsible manner should have control systems in place enabling them to regularly monitor whether the business is operating in accordance with CSR goals (Durden 2008). Indeed, MCS have been defined as “the formal, information-based routines and procedures managers use to maintain or alter patterns in organizational activities” (Simons 2000, page 4) or the “processes by which managers influence other members of the

organization to implement the organization's strategies" (Anthony et al. 1998, page 6). Notwithstanding such important role for MCS in organizations adhering to CSR principles, extant accounting research on the topic is scarce, mainly descriptive or prescriptive and nearly exclusively focused on the environmental side of social responsibility (for a review, cf. Bonacchi et al. 2007). As interesting exceptions, we can refer to the work of Durden (2008) and Henri and Journeault (2010). Durden (2008) analysed the performance measurement systems (as important subset of the overall MCS) of an organization publicly committed to CSR, finding that the case study organization did not measure or monitor social responsibility. The paper thus concludes by proposing a framework that "provides for the *integration* of the MCS with social accounting and social responsibility aspects" (Durden 2008, page 672, emphasis added). On the environmental side, Henri and Journeault (2010) used survey data from a large sample of manufacturing firms to examine the performance outcomes of eco-control, defined as "the *integration* of environmental matters within MCS" (page 65, emphasis added).

Limitations similar to those described with respect to SEA research (i.e. scant attention to the internal processes dimension, descriptive or prescriptive approach) characterize also much of CSR literature in general (Basu et al. 2008); indeed, such literature has contributed "to the definition and characterization of the CSR phenomenon, as well as discussions of best CSR practice, yet CSR design and implementation processes remain largely unexplored" (Maon et al. 2009, page 71). In order to fill this gap, Maon and colleagues (2009) review existing models for designing and implementing CSR and propose a more comprehensive framework for the integration of CSR into the organizations' strategy, structure and culture. By having a quick

glance through these frameworks, it appears that all of them include, as necessary step in the CSR implementation process, the *embedding* of CSR into the company's processes and management systems.

Thus, a common theme underlying the (scarce) literature on the implications of CSR for organizational internal processes and MCS seems to be the integration dimension. In other words, an organization attempting to operate in a socially responsible manner not only should develop suitable ad hoc (i.e. CSR-related) MCS, but also should strive to integrate them within its overall MCS, in order to make sure they are really effective in orienting decisions and actions across the whole organization. Indeed, by being incorporated within already existing, legitimate and enforced organizational processes, CSR-related MCS can be expected to be more promptly endorsed and to actually assume those decision-making and decision-influencing roles ascribed to planning and control systems (Luft et al. 2003). On the contrary, if CSR-related MCS remain disconnected from the company's overall MCS, they will be likely "marginalized" – i.e. confined to the specialized structures in charge of CSR strategies and activities – without any substantial impact on organizational everyday workings (Weaver et al. 1999)^{15, 16}.

¹⁵ The distinction among integrated and disintegrated structures has long been recognized as relevant conceptual dichotomy in organizational theory research, since the seminal contributions by Thompson (1967) and Pfeffer & Salancik (1978). More recently, Weaver et al. (1999) noticed: "Integrated structures and policies affect everyday decisions and actions; decisions are made in light of these policies, and people occupying these specialized structures have the confidence of and regular interaction with other departments and their managers. An integrated structure or policy is likely to be supported by other organizational policies and programs. Thus, managers and employees are held accountable to it, take note of it, and see it as having a valued role in the organization's operations. But not every structure or policy developed in an organization in response to external pressures will be integrated into everyday decisions and actions. Some structures can be decoupled easily. Structures that might, with the proper supports, have an impact on the

While there is considerable normative support for an integrative approach to the design of CSR-related MCS, there is little empirical research that examines the details of this integration dimension, the processes through which such integration can be actually achieved and the internal dynamics favoring or hindering it. In order to start filling this relevant gap, in the next section we develop a workable definition and a measurement strategy, based on extant management accounting research, for this key concept.

2.2 The integration of CSR-related MCS within a company's overall MCS: a conceptualization

In this study, we are interested in exploring the design and functioning of the MCS settled up by organizations in relation to their CSR strategies and initiatives. In particular, by extending to the CSR domain the classical definition of MCS by Anthony and Govindarajan (1998), we define CSR-related MCS as the processes by which managers influence other members of the organization to implement the organization's CSR strategies¹⁷. Theory offers several alternatives to further classify these systems (Anthony et al. 1998; Simons 2000; Merchant, and Van Der Stede 2003). In this research, we

organization can also be marginalized or disconnected from its everyday workings" (page 540).

¹⁶ The dichotomy among integrated and decoupled structures is also central to neoinstitutional theories (Meyer et al. 1977; DiMaggio, and Powell 1983; Powell, and DiMaggio 1991). Indeed, the institutional-constructivist perspective has been fruitfully applied within SEA research (cf., for instance, O'Dwyer et al. 2011; Bebbington et al. 2009; Chen et al. 2010; Larrinaga-Gonzalez 2007) to investigate the ceremonial and symbolic roles SEA initiatives may play in signalling ritual conformity to institutionalized myths (Meyer et al. 1977). In this paper, we aim at complementing the institutional-constructivist understanding of the SEA phenomenon by focusing on the substantive roles it may play. Therefore, we adopt a functionalist approach that considers the utility of management control systems in achieving purposeful outcomes (Ditillo 2004).

¹⁷ This way of defining CSR-related MCS is consistent with the approach followed by Henri and Journeault (2010) to develop a definition for eco-control.

use the influential typology proposed by Merchant (1998; Merchant et al. 2003), as it embraces a wide range of formal and social controls, is operationally well defined, has informed or is consistent with MCS models in previous research, and is not confined to large organisations (Efferin, and Hopper 2007; Davila 2005). The typology identifies three different control mechanisms labeled as result, action and personnel/cultural controls¹⁸. Result controls influence organizational actors by defining outputs expected from them and by measuring the result of their actions. Examples include establishing performance measures, setting performance targets, monitoring performance through measurement and rewarding performance through salary increases, bonuses and/or promotions (Merchant et al. 2003). Action controls monitors means (behavior) rather than ends (results) by prescribing the actions organizational actors should take. Examples include work rules, policies and procedures (Merchant et al. 2003). Finally, personnel/cultural controls (hereafter called cultural control) influence organizational actors by aligning their personal objectives with those of the organization. In other word, they focus upon promoting shared norms and values to induce employee self-control (Merchant et al. 2003).

Moreover - as explained in the previous section – in analyzing CSR-related MCS we are particularly interested in the extent to which such systems are integrated within a company's overall, enterprise-wide MCS. Specifically, with respect to the first of the three control mechanisms described by Merchant (1998; Merchant et al. 2003), CSR-related result controls are integrated within a company's overall MCS to the extent that CSR

¹⁸ By analyzing CSR-related MCS along these three dimensions, we also adopt a broader focus of analysis as compared with previous work – such as the contributions by Durden (2008) and Henri and Journeault (2010) – which focused on result controls only.

performance measures are included (together with more traditional financial or operational indicators): - within a company's overall strategic plan and, consequently, among the strategic priorities of its various departments; - within the internal reporting and monitoring systems used by top managers to regularly track performance attainment against strategic targets; and - within the rewarding systems used to incentivize managers from different departments. Thus, the integration of CSR performance measures within organization-wide planning, monitoring and rewarding systems is a first, fundamental way for achieving that *embedding* of CSR into the company's processes so much theoretically debated (Maon et al. 2009) but empirically unexplored.

Coming to the second control mechanism of Merchant (1998; Merchant et al. 2003)'s typology, CSR-related action controls refer to those rules, policies and procedures - generally developed by CSR experts - aimed at governing the CSR implications of organizational activities. However, such CSR-related rules and procedures can also vary in the degree to which they are integrated within other organizational procedures. For example, the last few years have witnessed a lot of companies formally adopting documents variously termed as ethics policies, ethics codes and the like (Weaver et al. 1999; Stevens et al. 2005). However, such documents tend to be framed in very general terms, providing organizational members with only very broad guidance on how they are expected to comply with several ethical principles (for example, conformity with law, confidentiality, conflict of interests, human rights, anti-corruption and so on); thus they can be easily "marginalized" and disconnected from organizational everyday workings (Weaver et al. 1999). On the contrary, a company may introduce more detailed, operating procedures which integrate specific CSR considerations

into other departments' processes and functioning. Indeed, the implementation of CSR activities directly impacts, in most of the cases, on the activities that are already managed by existing departments (Pedrini, and Ferri 2011). For instance, the introduction of social and environmental concerns in supply chain impacts on procurement department activities, or the implementation of a social and environmental packaging could involve the operational activities. Thus, implementing CSR asks a broad number of firm's departments to rethink processes to be aligned with CSR goals (Elkington, Emerson, and Beloe 2006). The more CSR-related operating procedures are intertwined with other departments' standard operating procedures, the higher a company is positioned on our integration continuum. Finally, with respect to the last type of MCS described by Merchant (1998; Merchant et al. 2003), CSR-related cultural controls refer to those mechanisms aimed at facilitating the diffusion of CSR values and at enhancing CSR awareness across organizational decision makers and members. In this respect, a particularly relevant role can be expected to be played by integrative liaison devices (Grafton, Abernethy, and Lillis 2011; Abernethy, and Lillis 1995), i.e. those structural arrangements - such as committees, meetings and individual contact - designed by an organization to allow CSR unit's members to interact with other departments' members for coordinating their highly interdependent activities. Specifically, the more integrative liaison devices are effective in allowing regular, personal and intensive contact among members of the CSR unit and other departments' decision makers, the more they are functional in furthering the integration of CSR concerns into a company's culture, the higher such a company is positioned on our integration continuum.

In the next section, by means of a review of relevant work in both strategic management and management accounting literature, we introduce our CSR strategic orientation construct and we develop expectations concerning its likely impact on the degree of integration of CSR-related MCS.

2.3 CSR strategic orientation and the integration of CSR-related MCS

The concept of strategic orientation has been widely studied within that stream of strategic management literature focusing on the determinants of the strategic development process (Hambrick 1984; Coda 1989). The construct - encompassing managerial key beliefs and cognitive frameworks that inform decision-making (Coda, and Mollona 2010) - has been conceptualized in a variety of ways and employing different terms. By means of a broad review of management and marketing literature addressing this concept, Wood and Robertson (1997) define strategic orientation as “the specific managerial perceptions, predispositions, tendencies, motivations and desires that precede and guide the strategic planning and development process, and, ultimately, the direction of the organization” (page 426). As the authors notice, strategic orientation has been examined along several theoretical continuums. However, the most recurring terms used to anchor the strategic orientation continuum are “reactive” and “proactive”. What is particularly interesting of Wood and Robertson (1997)’s work, is that it details the subtle distinctions that are important to grasp when considering the nature of proaction versus reaction as a strategic orientation. In particular, they identify three key dimensions, all well grounded in theoretical constructs (Snow, and Hrebiniak 1980; Hambrick 1983; Miller 1986; White 1986), along which assessing strategic orientation: locus of control, cues for action, and management aggressiveness.

Locus of control (external/internal) refers to management's perceived control over the competitive environment. In particular, under a reactive strategic orientation the organization is characterized by an external locus of control, i.e. management perceives that it has little ability to affect the competitive environment meaningfully and to control the destiny of the organization. Therefore, the ultimate destiny of the organization lies with external forces. At best, the organization can only attempt to "buffer" (Thompson 1967) itself from the external environment. On the contrary, under a proactive strategic orientation the organization is characterized by an internal locus of control, i.e. management perceives that it can meaningfully affect the competitive environment. By aggressively pursuing an understanding of its environment, a competitive advantage is gained that leads management to perceive that it can master the organization's destiny.

Cues for action (problem/opportunity orientation) refer to the primary prompt of organizational action. In particular, under a reactive strategic orientation management is primarily problem oriented: unanticipated external and internal events impel the organization to react in order to survive. Under a proactive strategic orientation, instead, management is primarily opportunity oriented: thanks to a systematic monitoring of the environment, the organization is able to timely anticipate external and internal events, turning them into valuable opportunities to seize.

Management aggressiveness (low/high) refers to the fortitude of management's urge to make their organization a leader. In particular, under a reactive strategic orientation the organization tends to be a follower. Changes occur because of the need to change rather than the desire or drive to change. The "buffering" mentality associated with perceptions of external locus of control results in lowered expectations of success. On the contrary, under a

proactive strategic orientation the organization is characterized by a strong aspiration to be a leader. Management is driven to create favorable conditions in order to beat competition. Innovativeness is valued by the organization, and an internal locus of control leads to high expectations of success.

In sum, the Wood and Robertson (1997)'s conceptual framework distinguishes among purely reactive strategic orientations - characterized by external locus of control, problem orientation and low management aggressiveness – as opposed to purely proactive strategic orientations - characterized by internal locus of control, opportunity orientation and high management aggressiveness. As the authors explicitly recognize, in practice few organizations are purely proactive or reactive. They may, however, have a general tendency, or propensity towards one orientation or the other. This is particularly likely also because, in theory, the three dimensions of strategic orientation build on one another (Miller, and Friesen 1983), that is, they interact in a cyclical fashion (Wood et al. 1997). For instance, a reactive orientation - exhibiting an external locus of control (with characteristic low levels of research and analysis) - will have a higher likelihood that destabilizing events will be unanticipated. Unanticipated events - particularly threats - cause problems that result in the adaptation of a short-term perspective as the organization reacts to one crisis after another (problem orientation). Crises reaction leaves little time for long-term planning and leads to low expectations of success (low management aggressiveness). Ultimately, the cycle of problem-reaction perpetuates the perception that the ultimate destiny of the organization lies with external forces¹⁹.

¹⁹ In a similar way, a cycle of events can be envisioned for an organization characterized by a proactive orientation. An organization that anticipates threats and opportunities in a timely manner (opportunity orientation) may be more likely to

While the Wood and Robertson (1997)'s conceptual framework was originally derived with respect to an organization's competitive environment and business strategy, its application to our CSR domain appears particularly appropriate and fruitful. Indeed, as already noticed, several contributions both in CSR literature (Basu et al. 2008; Plaza-Úbeda et al. 2009; Sharma 2000; Wood 1991) and in SEA research (O'Dwyer 2003; 2002) point to the need to shift the focus of empirical investigation from "a largely content-driven analysis of CSR activities" (Basu et al. 2008, page 124) to the underlying managerial interpretations, beliefs and sensemaking processes, which are expected to provide potentially richer descriptions of CSR and a more reliable basis for inferring its nature (Basu et al. 2008). Indeed, decisions regarding CSR activities are made by managers and stem from their mental models regarding their sense of who they are in their world. With respect to the environmental dimension of CSR - work by Sharma (Sharma 2000; Sharma et al. 1999) and by Banerjee (Banerjee 2002; Banerjee et al. 2003) empirically demonstrate the relevance of managerial interpretations and orientations towards the natural environment in shaping corporate environmental strategies. A focus on managerial perceptions and interpretations is also particularly pertinent to our domain given that the CSR concept has been often described as complex and ambiguous concept, without any universal agreement on a particular definition (O'Dwyer 2003). Indeed, as explicitly noted by Wood (1991), the principles of CSR "...leave substantial room for managerial discretion in determining what social problems and issues are relevant and how they should be addressed" (page

perceive that it can control its environment and "master" its destiny (internal locus of control). Management in this case is also more likely to be aggressive in its actions and driven to be an industry leader.

698). In this direction, O'Dwyer (2003) furnishes a narrative reflecting an in-depth examination of managerial conceptions of CSR in the Irish context, based on interviews with 29 senior executives. In particular, the author identifies two main (and somewhat overlapping) rationales for managerial acceptance of "social" responsibilities, named proactive enlightened self-interest and reactive enlightened self-interest. The first, "proactive" rationale entails an active response on the part of companies, whereby social issues impacting on business are purposefully selected and managed to the extent this enhances (or at least fails to inhibit) corporate economic welfare. The latter, "reactive" rationale involves a more passive response on the part of companies, whereby the acceptance of social responsibilities is perceived as being imposed by external pressures deriving from several sources such as legislation, local communities, pressure groups and the media.

Building on O'Dwyer (2003)'s initial insights, and complementing them with the Wood and Robertson (1997)'s conceptual framework described above, in this paper we investigate a company's "CSR strategic orientation" as influential determinant of its CSR-related MCS configuration. Specifically, by applying the Wood and Robertson (1997)'s definition of strategic orientation to the CSR context, we define CSR strategic orientation as the perceptions, predispositions, tendencies, motivations and desires held by managers about CSR and guiding the organization's planning and development processes with respect to its social responsibilities. In addition, by analyzing such managerial beliefs and motivations regarding CSR along the three key dimensions of locus of control, cues for action and management aggressiveness, we are able to distinguish among reactive or proactive CSR strategic orientations. In so doing, we refine and add considerable theoretical

depth to the different CSR conceptions (proactive/reactive enlightened self-interest) empirically derived by O'Dwyer (2003).

As it emerges clearly from our definition of CSR strategic orientation, the construct is here conceptualized at the organizational level of analysis. In other words, we are interested in those perceptions, predispositions, tendencies, motivations and desires towards CSR which are widely shared by managers across different organizational levels and departments, so that they end up in characterizing the organization's overall strategic approach to the issue. The organizational level of analysis, in addition to being consistent with the original framework by Wood and Robertson (1997), is also coherent with our firm-level conceptualization of the MCS variable, described in the previous section²⁰.

As already anticipated, we expect a company's CSR strategic orientation to influence the design and functioning of its CSR-related MCS. This general expectation is consistent with the conventional contingency-based argument according to which MCS are adopted to assist managers achieve some desired organizational outcomes and that the appropriate design of MCS will be influenced by specific aspects of the company's strategy (Chenhall 2003; Langfield-Smith 2007). Previous findings support the evidence of a direct relationship between advanced operational strategies such as total quality management (Ittner, and Larcker 1995, 1997; Chenhall 1997) and flexible manufacturing systems (Abernethy et al. 1995; Perera, Harrison, and Poole 1997) and control mechanisms design choices. In general, empirical evidence

²⁰ Notice also that the case-study approach employed is particularly suitable to the purpose of investigating the extent to which managers' CSR strategic orientation is actually homogeneous across hierarchical levels and interest groups, thus supporting or contradicting the appropriateness of our firm-level conceptualization of the construct.

from these studies confirmed that organizations following advanced manufacturing strategies are positively associated with the provision of non-financial measures and goals as well as greater emphasis on non-financial measures in reward systems (Chenhall 2003; Langfield-Smith 2007). By extending the findings from existing literature on quality management to the environmental management setting, Perego and Hartmann (2009) theoretically develop and empirically verify some expectations concerning the relationship among a company's strategic approach towards the natural environment and the extent to which it relies upon environmental performance measures for management planning and control. In particular, the authors find that companies characterized by a more proactive environmental strategy use environmental performance measures to a greater extent than companies with more reactive strategic approaches to the environment. Indeed, "as organizations adapt to incorporate environmental-related aspects in their business strategy, performance measures are crucial to ensure that the implementation of an environmental strategy is effectively executed" (Perego et al. 2009, page 402). By applying this line of reasoning from environmental strategy to CSR strategy more in general and from performance measurement systems to a company's overall MCS, we expect a proactive CSR strategic orientation to be associated with a highly integrative approach to the design of CSR-related MCS. Indeed, the emphasis on social and environmental objectives should be reflected in changes of the overall MCS in order to align decisions and motivate employees' effort towards the attainment of CSR strategy. In other words, a company characterized by a proactive strategic orientation towards CSR (i.e. by internal locus of control, opportunity orientation and high management aggressiveness) should incorporate CSR control mechanisms within its overall MCS in order to

make sure they are effective in orienting decisions and actions across the whole organization and are seen “as having a valued role in the organization's operations” (Weaver et al. 1999, page 540). On the contrary, we expect that companies characterized by a reactive CSR strategic orientation will adopt a lowly integrative approach to the design of their CSR-related MCS. Indeed, if management perceives that it has little or no ability to meaningfully affect the company's CSR performance (external locus of control), that CSR represents mainly an external pressure impelling the organization to react in order to survive (problem orientation) and that the organization's expectation of success in the CSR arena are low (low management aggressiveness), the organization will at best try to “buffer” itself from the CSR pressures of the external environment (Thompson 1967). As such, it will adopt CSR-related MCS as façade, buffering mechanisms separated from the technical core (and thus disconnected from the overall control mechanisms) of the organization (Weaver et al. 1999).

Based on the preceding discussion, we advance the following tentative theoretical proposition:

Proposition: A reactive CSR strategic orientation, characterized by external locus of control, problem orientation and low management aggressiveness, will tend to be associated with a low degree of integration of CSR-related MCS within a company's overall MCS. On the contrary, a proactive CSR strategic orientation, characterized by internal locus of control, opportunity orientation and high management aggressiveness, will tend to be associated with a high degree of integration of CSR-related MCS within a company's overall MCS.

This proposition will be explored and subjected to eventual refinement during the fieldwork, aimed at establishing the plausibility of the proposed framework. As a result of our empirical analysis, the above presented proposition can be confirmed, be subject to revision, disconfirmed or thrown out for insufficient evidence (Ahrens, and Chapman 2006).

It is important to mention here that, in practice, the causality is likely to work in both directions: CSR strategic orientation (whether reactive or proactive) will influence the degree of integration of CSR-related MCS within a company's overall MCS, but this variable may itself reinforce managers in their original perceptions, predispositions, tendencies, motivations and desires about CSR, especially over the long run²¹.

3. Research methods

3.1 Research design

To explore the tentative research proposition discussed above and, more generally, the whole area of CSR-related control mechanisms, we solicited the cooperation of four Italian companies²². In particular, our approach to the field represents what Keating (1995) refers to as “theory illustration” case, aimed at establishing the plausibility of the preliminary conceptual model developed in the previous sections. Given the early stage of research on the topic, the above presented proposition can be confirmed, be subject to revision, disconfirmed or thrown out for insufficient evidence, guaranteeing

²¹ Indeed, it is reasonable to expect that a company's management, facing the problem of designing and implementing CSR-related MCS for the very first time, will do it influenced by its pre-determined perceptions and motivations about CSR. Yet, over time, these same control systems will likely influence managers' strategic orientation towards CSR, in a cyclical sense that is often apparent in constructs of this nature.

²² The companies' names have been disguised to maintain confidentiality.

the necessary flexibility to respond to new insights deriving from the field (Ahrens et al. 2006).

Specifically, we used a comparative case study approach (Yin 1994). The comparative method adopted allowed us to observe enough variation in the constructs of interests; this in turn enables a replication logic that is designed to confirm or disconfirm inferences, thus increasing their validity (Eisenhardt 1989).

In addition, the case study approach is particularly suitable to our work because it provides rich description and data on how CSR-related controls are used and integrated within the companies' overall MCS under different strategic approaches to CSR. In particular, qualitative interviews with managers represent the most appropriate strategy to really grasp those managerial perceptions, motivations and desires towards CSR which are at the basis of our CSR strategic orientation construct.

The case study organizations were identified based on a theoretical sampling approach (Patton 2002; Scapens 1990), with the aim of purposefully selecting organizations that would have provided a rich source of data for the study. In particular, given our broad purpose to explore CSR-related control mechanisms, we selected four Italian companies promoting a strong social responsibility image and publicly adhering to CSR principles, and as such with some CSR-related control systems in place. In addition, in order to maximize variation in the constructs of interest, we selected organizations of different sizes and across different industries²³.

Within the case study organizations, the gatekeepers were the CSR Managers or, where such a formal role was absent, the highest-level managers in charge

²³ More details on the case study organizations are provided in the 4th section.

of the companies' CSR strategies and initiatives. Subsequent interviewees were identified following a snowball sampling approach (Patton 2002) in order to listen to the most relevant actors taking part in the CSR management process, across different departments and hierarchical levels.

3.2 Data collection and analysis

In order to strengthen the validity of our results, we explicitly relied on triangulation of investigators, informants and data sources (Patton 2002; Flick 2002; Yin 1994). Specifically, data were collected using a variety of evidential sources: archival documents, informal and semi-structured interviews, and direct observation carried out during site visits. The analysis of documents spanned from the financial and CSR reports, to budget and reporting statements, to internal manuals and operating procedures concerning CSR topics. Interviews were administered to managers and other organizational members at different hierarchical levels and across different departments. In total, 26 interviews were conducted across the four case study organizations, with a minimum of 5 and a maximum of 8 interviews for each company. Interviews lasted on average 80 minutes, for a total of 35 hours. All interviews were tape-recorded with the exception of three. When the interviewee refused to be recorded, extensive notes were taken during the interview and reviewed immediately after. Interviews followed a semi-structured format in each of the four case study organizations; the use of a uniform interview guide was helpful in ensuring that all questions of interest were covered in all interviews, and in minimizing the potential for interviewer-induced bias (Grafton et al. 2011). Specifically, interviews were structured around a set of questions about the management control systems settled up in relation to CSR and their relationships with the company's overall control mechanisms. In addition, managers' personal beliefs,

interpretations and motivations regarding the company's commitment towards CSR were probed. The questions were open-ended in order to adapt the interview to the expertise of each interviewee without losing the overall direction. For details about all the interviews conducted see Appendix A. Finally, thick descriptions (Patton 2002; Miles, and Huberman 1994) were produced as a result of direct observation carried out during site visits.

The transcribed interviews were analyzed using three sub processes: data reduction; data display; and conclusion drawing/verification (Huberman, and Miles 1994; O'Dwyer et al. 2011). A detailed reading of all transcripts and accompanying notes was undertaken independently by the two co-authors and led to the identification of numerous key themes. A summary table was then prepared for each transcript which named

these themes and explained their nature. Subsequent readings of the transcripts added to these themes and further reading was undertaken until some sense of saturation of the issues identified by interviewees was reached and a pattern began to emerge. A coding scheme was then developed intuitively for each theme (Miles et al. 1994) and used to systematically code transcripts, with the help of the software package ATLAS.ti. With transcript coding complete, ATLAS provides a powerful means to access the data through its search and retrieval tools. These tools permit the text in the transcripts to be reorganised and reported back under the various themes of interest identified in the coding scheme. The researcher can thus systematically analyze the reorganized transcripts. At this stage, we created summaries of the key themes for each interviewee including quotations from the interview transcripts as well as memos created by the author that reflect some data interpretation and analysis. We then combined interviewee level analyses to create a case-based summary of each of the constructs of interest.

We also assessed documentary evidence for its consistency, or lack thereof, with interview data. These case-based summaries form the basis of the within-case descriptions provided in next section of the paper.

4. Findings

In this section, we discuss each of the four organizations studied in relation to the theoretical constructs established in the proposed framework. We then undertake a between-case analysis to consolidate and elaborate the findings. In presenting each of the individual companies (the within-case analysis) we firstly analyze the evidence for each of the three CSR strategic orientation's dimensions (locus of control, cues for action and management aggressiveness) in turn. We then describe the companies' CSR-related MCS, with particular attention being paid to their integration within overall MCS. The findings presented result from a systematic analysis of multiple sources of data. In particular, interview data are a significant source of data for many of the relations under investigation, and quotations from interviews reflect the content of that evidence. However, to enhance the 'readability' of the findings and ensure the following discussion remains parsimonious, we include few quotes from interviews and other supportive data in the main text. Instead, we summarize 'typical' quotes that reflect the constructs of interest in a more comprehensive and structured form in Appendix C (for the three CSR strategic orientation's dimensions) and in Appendix D (for CSR-related MCS).

4.1 Coy A

Coy A is a large, multinational company, listed on the Italian Stock Exchange and operating in the auto parts and tyre industry. In particular, it is among the world's five biggest tyre makers as measured by its turnover and it is leader in the high-end and high technology content segments. Its

headquarters are in a highly developed area of Northern Italy, where it was founded toward the end of nineteenth century. Coy A now operates in 19 industrial areas on four continents and sells its products in over 160 countries. Operating revenues in 2010 totaled Euro 5,048 million, with a profit margin of 7.24%. Around 40% of 2010 turnover was generated in Europe (10% in Italy), and nearly 34% in Central and Southern America. At the end of 2010, it employed about 30,329 people worldwide. The cornerstones of its strategic approach have always been innovation²⁴, product quality and a very strong brand image. Appendix B includes some key operating and financial statistics for the last three years.

Concerning the history of Coy A commitment to CSR²⁵, this can be traced back to the mid 1990s, when the company started dedicating more explicit and structured attention to social and environmental themes by adopting a formal Environmental Policy and a Policy for Safety at Work. In 1998 an Environmental Management System, conformed to the ISO 14001 standard, was inaugurated, while in 2000 the first Environmental Report was published. Starting from 2001, Safety Management Systems, in accordance with the OHSAS 18001 standard, began to be progressively introduced. In 2003 the company's board approved the Values and Ethical Code of the group and in the same year the company was for the first time included in

²⁴ The group R&D costs represented 3.1% of total sales with reference to fiscal year 2010, one of the highest levels in the industry.

²⁵ Notice that Coy P privileges the term "Sustainability", instead of "CSR", as "expression of the company's corporate culture based on the integration of the economic choices together with the environmental and social choices" (2010 Sustainability Report, page 9). Throughout this paper, the two terms are used interchangeably.

sustainability indexes²⁶ like the Dow Jones Sustainability index and the FTSE4Good Sustainability Indexes. In 2004 Coy A signed up to the Global Compact²⁷. The same year witnessed also the appointment of a Corporate Social Responsibility Steering Committee, enforced by the Chairman and established at the top manager level, with the responsibility for guidance and supervision of CSR evolution within the group. In 2006 Coy A launched its first Sustainability Report, as an integral part of the Annual Report for 2005 fiscal year. In the same year, the company adopted a formal CSR organizational structure by introducing a Group CSR and Risk Governance Department, directly reporting to the Group General Counsel. This department comprises, at the central level, a Group CSR Director, a Group CSR Manager and her assistant and, at the local level, several CSR Country Managers (one for each affiliated company). In 2008, SAM "Sustainability Yearbook"²⁸ awarded for the first time Coy A the title of worldwide sector leader in the "Auto Parts and Tyres" sector. In 2010, Coy A is confirmed this title for the third consecutive year.

From this brief account of Coy A's CSR history (available on the company's web-site), it can be argued that Coy A is conveying to the public the image of a strong CSR commitment, also reinforced by prestigious international recognitions and awards. With this background information, the paper now turns more specifically to the analysis of Coy A's CSR strategic orientation.

²⁶ Sustainability indexes are stock indexes in which securities are selected not only on the basis of economic-financial parameters but also in the light of social and environmental criteria.

²⁷ A global pact which was launched by the UN to promote the protection of the environment, respect for human rights and working standards, and anti-corruption initiatives.

²⁸ The Sustainability Yearbook, realized by SAM (Sustainable Asset Management) Group, is one the most influential publications, on a worldwide level, on company trends and performances in terms of sustainability.

We then analyze the company's CSR-related MCS, with particular attention being paid to their integration within the company's overall MCS.

4.1.1 CSR strategic orientation

The perceptions, predispositions, tendencies, motivations and desires expressed by Coy A's management with respect to CSR are highly representative of what we called a proactive CSR strategic orientation. All interviewed managers, when describing Coy A's commitment and approach to CSR, clearly expressed beliefs and motivations consistent with the three key dimensions (internal locus of control, opportunity orientation, high management aggressiveness) characterizing a proactive CSR strategic orientation.

Locus of control

Concerning locus of control, among Coy A's managers is strongly diffused the belief that they are able to meaningfully and effectively control the organization's CSR performance, which depends primarily on their will, abilities and actions (internal locus of control). Several managers expressed feelings of satisfaction concerning the extent to which they were able to assure CSR principles permeate the company's working across all departments and hierarchical levels, as the following quote exemplifies:

That is, sustainability can be articulated in different ways, both in terms of functions and in terms of country, region and site levels. Then there is Eleonora [*Group CSR Manager*] that is very good at getting them all involved. On every issue, she is capable of immediately identifying who are the right persons who may, within each area, pursue it, and she really manages to spread the sustainability message to everyone (Environmental Specialist - HSE department)

Interestingly, this sense of complete controllability over the CSR domain expressed by Coy A's management is not limited to the company's internal functioning, but it extends beyond its boundaries to cover also the external, institutional setting in which the company operates. Exemplary in this respect is the case of the Turkish subsidiary, which activated several cooperation activities with national institutions (such as the Turkish Chamber of Commerce and the Global Compact Office in Istanbul) aimed at improving Turkey's regulatory environment:

Our Turkish colleagues have difficulties in implementing sustainability due to the country conditions. This situation is so real that they are actually supported by the national institutions. Yes, by the Chamber of Commerce, by the Global Compact Office in Istanbul, by a lot of things. [...] So in Turkey there is really a mobilization, say, a national mobilization which was activated by us, at the local level (Group CSR Manager)

Cues for action

Together with an internal locus of control, Coy A's management clearly embraces an opportunity orientation towards CSR. Indeed, managers are widely convinced that CSR represents a valuable opportunity to strengthen the company's competitive position. In particular, the theme of a strong link among the company's CSR performance and competitive advantage emerged repeatedly across the interviews. Interestingly, Coy A's managers were able to elaborate on a plethora of both tangible and intangible value drivers through which CSR commitment is believed to enhance the company's competitive position:

Sustainable management brings to the company both a tangible value - if we look at it in terms of increased sales of green products, for example, every year (but then many are the examples) - and an

intangible value - in terms of risk reduction, for example, which is a critical issue if we think of supply chain management, rather than in terms of brand value, reputation, access to credit, license to operate if there are new markets to penetrate and so on and so forth. [...] And here we arrive to another key element that is engagement. These are definitely elements of engagement. And engagement in a company, especially in times of crisis, is all (Group CSR Manager)

The most evident manifestation of this perceived strict relationship among CSR and competitive advantage is probably represented by the “Green Performance” concept, the new philosophy orienting the company’s product development process:

Indeed our products, even at the level of the business plan, are by now declined as Green Products. But we didn’t focus exclusively on the Green axis. Indeed, sustainability for us also means driving safely, so there is also this safety aspect. So, we strived for the right balance between all the safety performances – by the way safety has to do with the social dimension, so it's one of the axes of sustainability (Project Planning Manager)

Management aggressiveness

Finally, with respect to the third dimension of CSR strategic orientation, recurring themes across all interviews were “leadership”, “leader”, “innovativeness”, “success”, all of which clearly relate to a particularly high management aggressiveness. Coy A’s managers appear well aware of (and satisfied with) the results already obtained with respect to CSR:

We have now been walking that road for several years. And we are doing it, I think, extremely successfully. I think Dr Pessina [*Group CSR Manager*] showed you the sustainability indexes identifying us as industry leader (Project Planning Manager)

However, these widespread feelings of satisfaction do not appear to hamper managerial urge to additionally improve the company's CSR performance and to beat competitors also on this terrain. Indeed, a tension towards continuous progress and advance clearly underlies management's description of the company's CSR programs and initiatives. The strength of this leadership aspiration is perhaps best described by the following passage, in which the Group CSR Manager explains the logic behind their benchmarking activities:

Our actions derive from benchmarking, that we always do not against our peers but against best practices. [...] If I have to look at diversity, I will look at L'Oreal. And I do not care if I'm better than my peer in the auto parts and tyre, because he does not care about diversity. Because in this way I do not grow (Group CSR Manager)

Taken in total, the evidence for Coy A is strongly evocative of a proactive CSR strategic orientation, characterised by internal locus of control, opportunity orientation and high management aggressiveness.

4.1.2 CSR-related MCS

The evidence consistently suggests that, in Coy A, CSR-related MCS are extensively integrated within the company's overall MCS. The descriptions of CSR-related MCS design and functioning, collected from interviewees from different departments and at different hierarchical levels and inferred from documentary evidence, clearly reflect that such MCS overcome the boundaries of the CSR unit to actually affect decisions and actions across the whole organization, and are viewed as having a valued and fundamental role in the organization's operations (Weaver et al. 1999). All of the three types of control choices described in section 2.2 (result, action and cultural controls) significantly contribute to the achievement of this high degree of integration.

Result controls

Concerning result controls, over the years Coy A developed an ample, organization wide internal reporting system aimed at regularly collecting, through a dedicated IT system (HSE²⁹ Data Management), an extensive set of CSR KPIs. What is interesting to note is that such information, in addition to being used for external reporting purposes through the publication of the Sustainability Report, also feed Coy A's strategic planning process. As several interviewees noticed explicitly when asked about their CSR targets and the CSR planning process in general, Coy A's CSR plan is indeed part of the industrial plan:

Sustainability is part of the strategic plan. So we set targets not only in terms of revenues or financial results. But we set targets also in terms of environmental sustainability, like for example a certain reduction of carbon dioxide emissions, rather than energy saving energy, and so on. And targets for social sustainability, like an appropriate use of the supply chain rather than equal opportunities between men and women (Group Risk Officer)

More specifically, the main 2015 CSR targets contained in the industrial plan refer to reductions in water and energy consumption, in CO₂ emission and to an increase in total sales from green products. Stemming from these macro CSR targets there is then a wide set of more micro targets (composing the "CSR section of the industrial plan", i.e. the CSR plan) that are meant at regulating, across the whole organization, the broad array of processes and specific activities involved in those targets' attainment. Since CSR targets, even if they are primarily defined by the CSR organizational structure, are then endorsed by the Board of Directors and formally integrated within Coy

²⁹ The acronym HSE stands for Health, Safety and Environment.

A's industrial plan, they are able to overcome the boundaries of the CSR unit to affect decisions and actions across the whole organization. Indeed, several interviewees reported that it is responsibility of the various departments' directors to decline CSR targets from the industrial plan into their units' functioning and activities:

When we receive the indications from the industrial plan, similarly to any implementation of the industrial plan, it is then up to the various functional managers to translate these requirements into the corresponding functions' workings. [...] With respect to R&D, the target of developing increasingly eco-friendly products [...] this is something which is then immediately translated into technological road maps (Project Planning Manager)

Thus, CSR-related targets are taken into consideration by the various functional departments when establishing their budgets (the so called Management Plans). Centrally, the CSR function is able to consolidate CSR-related figures and thus to verify the respect of the overall CSR plan through the CSR Management Plan process, as described by the following passage:

Every year our company prepares its Management Plans, in autumn, for the following year [...] There is the HSE Management Plan that will include his pro-rata [*of CSR-related expenses*]. The HR Management Plan of HR, which must implement certain aspects with respect to diversity, will have its pro-rata. The Sustainability Management Plan brings together all these elements, to put them together and see if sustainability globally holds. Because there is also the Sustainability Management Plan (Group CSR Manager)

From our data it also emerged repeatedly that, in addition to being integrated within the company's planning and budgeting processes, CSR performance measures are similarly integrated within the internal reporting and monitoring

systems used by top managers to regularly track performance attainment against those key indicators considered fundamental for the achievement of three-year strategic targets (the so called Master Plans). Indeed, a subset of CSR KPI is monthly (qualitatively) and quarterly (quantitatively) collected by the CSR unit and communicated to Coy A's top management through the Sustainability Master Plan:

With respect to sustainability we have included [*in the Master Plan*] the following - we should have put a lot, but it is not possible to send the President twenty sustainability indicators, every month, you know - and then we included: CO2, energy, water, diversity ... it has been a win, I did it, it's been tough, sending to the top management a monthly indicator on diversity, trust me, it is not easy (Group CSR Manager)

Concerning rewarding, we also found some evidence on the inclusion of CSR-related targets among the MBOs used to incentivize high level management³⁰.

Action controls

With respect to the second type of control choices described in section 2.2, Coy A has also developed a fairly extensive set of rules, policies and operating procedures aimed at governing several CSR implications of organizational activities. A functional area in which the integration of such procedures within other organizational procedures is particularly evident is procurement. In this area, from our evidence emerged a particularly close cooperation among the Group CSR Manager and the Group Global Purchasing Manager, who are working side by side to integrate CSR considerations into procurement management systems. In particular, they are

³⁰ However, we weren't able to collect more detailed information or documentary evidence on MBO and other incentive systems, which tend to be considered highly confidential matters.

defining and implementing a new suppliers' selection and evaluation procedure, based on a revolutionary web portal, which requires the acceptance of CSR clauses of contract as mandatory criteria for inclusion in vendor list and which incorporates CSR criteria among the assessment criteria for suppliers' selection³¹. Moreover, they are also working on the development of an operational manual for sustainable supply chain management:

Well, we have these unwritten rules ... Yes, written in slides, coming from the training that we do to all buyers. And which, among other things now, in addition to the slides that everyone has, we would like to collect in a small manual for the sustainable management of the supply chain. Indeed, manuals of this kind, operational, so not fantasies, philosophies, etc ... there is none around (Group CSR Manager)

Concerning capital expenditures approval procedures, one interviewee reported that there is some priority granted to HSE investment; this priority, however, depends at the moment on the subjective assessment made by top managers in charge of authorizing such investments. While there are still no formal rules in this respect, Coy A is undertaking a project to enrich the company's environmental accounting as basis for the formal introduction of environmental criteria within capital expenditures approval procedures.

Cultural controls

Finally, the high degree of integration of CSR-related MCS within Coy A's overall MCS is also evident in the extensive reliance on cultural controls aimed at facilitating the diffusion of CSR values and at enhancing CSR awareness across organizational key decision makers and members. In this

³¹ In particular, the weight of CSR score is 33% on final selection rate.

respect, the role played by various integrative liaison devices at different hierarchical levels is particularly noteworthy.

The highest level integrative liaison device is represented by the CSR Steering Committee³², which was formed by the Chairman & CEO at the beginning of 2004 and is chaired personally by him. The composition of this body is highly representative of the integrative approach of Coy A. Indeed, in addition to the Chairman & CEO, this committee includes several functional directors chosen from the functional departments most relevant to the successful implementation of the company's CSR strategies³³, the Group CSR Director and the Group CSR Manager. This committee, even if it is composed of top level managers, is assigned specific executive responsibilities, and not only a generic guidance role. Indeed, it meets twice a year for approving CSR strategic targets and management plans and for monitoring performance attainment against approved targets. During the year, moreover, the CSR function frequently interacts with this committee's members, for example to obtain their approval concerning CSR policies and documents such as the CSR report. The fact that such a committee is responsible of discussing and approving Coy A's CSR strategic targets is a fundamental way of achieving the high degree of interfunctional coordination and commitment necessary to ensure that CSR targets can really overcome the boundaries of the CSR unit to affect decisions and actions across the whole organization:

³² This body is also the organizational basis of Coy A's CSR governance system, being responsible of approving the company's CSR plan.

³³ Specifically, they are the group directors from the following departments: HSE, HR, Investor Relations, Governance, Institutional Affairs, Procurement, R&D, Operations.

This Sustainability Steering Committee, in a strategic perspective, consists of those functions that, within the company, represent internal and external stakeholders. [...] All of these [*these functions' directors*] participate in this Steering because when you have to make plans, the plans must be sustainable. And automatically, since each of these directors responds to such external expectations, this is a very strategic way to come up with a plan that holds, that is sustainable in itself, because you have to reach true sustainability, but if you have plans that are unsustainable within functions, you are over (Group CSR Manager)

While the CSR Steering Committee seems to be a fundamental structural arrangement allowing the CSR unit to span horizontal boundaries across the organization, the network of CSR Country Managers and their close and frequent interactions with the Group CSR Manager seems to be an important way for the CSR unit to overcome vertical boundaries across the organization. Several interviewees made reference to the important role played locally by these figures, formally appointed by the Chairman & CEO for each subsidiary. Notably, local CEOs or anyway managers directly reporting to local CEOs (i.e. top-level executives) were chosen to fill the role of CSR Country Managers. Thus, they represent a highly-powered integrative liaison device for effectively coordinating CSR strategies at the local level. Overall our evidence consistently suggests that, thanks to these integrative liaison devices, Coy A's CSR unit really "has the confidence of and regular interaction with other departments and their managers" (Weaver et al. 1999, page 540). As one interviewee noticed:

That is, when it comes to the environment, with Eleonora [*Group CSR Manager*] and Giorgio Restori, who is the collaborator of Eleonora, we discuss, interact, there is a common line. Then, if something is said by

her, by me or by my boss rather than by Mario Apollonio, which is the energy manager, it is the same thing. We are trying to create a very synchronized team (Environmental Specialist - HSE department)

It is also interesting to note that these frequent and close interactions among members of the CSR unit and other organizational members are not always initiated by the CSR function to ask for collaboration (i.e. unidirectional) but also spontaneously activated by other departments' members to ask for the CSR function's advice (i.e. bidirectional), as this quote illustrates:

Whatever happens they [*people from other departments*] call me and say: "here it happens so, so and so, I am afraid that ..." But it is healthy, positive, because all this stuff here is awareness, it's all culture. Then it carries the DNA of the company (Group CSR Manager)

This is particularly emblematic of the degree to which the workings of the CSR unit and those of other organizational units are integrated, thus fostering the diffusion of CSR values and enhancing CSR awareness across organizational key decision makers and members.

Taken in total, the evidence for Coy A indicates a highly integrative approach to the design of CSR-related MCS, which are extensively integrated within the company's overall MCS; thus, they really affect decisions and actions across the whole organization, spanning vertical and horizontal boundaries among departments.

4.2 Coy B

Coy B is a medium-sized Italian rail equipment manufacturing company; it is a local subsidiary of a large multinational company headquartered in Canada and listed on the Toronto Stock Exchange, worldwide leader in rail vehicles and aircraft manufacturing. Coy B is located in a quite rural area in the

North-West of Italy, where it was founded at the beginning of the twentieth century by another multinational company with the aim of introducing in Italy a highly innovative business idea. Immediately the plant became the main source of industrial and economic development for the local territory, creating that very strong link among Coy B and its local community which still exists today³⁴. Operating revenues in 2010 totaled Euro 306 million, with a profit margin of 18.38%. At the end of 2010, it employed 672 people. The cornerstones of its strategic approach have always been technological innovation and product quality. Appendix B includes some key operating and financial statistics for the last three years.

Concerning the history of the company's commitment to CSR, to date several of the company's CSR activities (for instance donations, promotion of good relationships with the local community, procurement strategies favoring local suppliers) are still managed in a rather informal manner, based on the company's CSR culture - 'embedded in the company's DNA since its foundation', as some interviewees noticed - and on the individual values of its managers. However, highly formalized structures and systems exist in Coy B with respect to the Health, Safety and Environment (HSE) area, which represents a particularly relevant subset of overall CSR issues.

With these remarks in mind, we can state that Coy B's commitment to CSR can be traced back to the late 1990s, when the company started dedicating more explicit and structured attention to health, safety and environmental themes. Indeed, in 1999 an Environmental Management System, conformed to the ISO 14001 standard, was inaugurated. In 2004, at the request of the

³⁴ This strong local identity was not impaired by the fact that, over the years, several multinational companies followed one after the other in the ownership of the plant. The last proprietary change, in 2001, saw the entrance of the actual parent company in the control of Coy B.

parent company, Coy B also obtained the certification of its Health & Safety Management System in accordance with the OHSAS 18001 standard. In 2005, a Code of Ethics and Business Conduct was approved by the parent company and consequently adopted within Coy B. Since 2006 the company publishes a CSR report to describe its social responsibility commitment and its CSR performance, with a particular focus on HSE issues, human resources, suppliers' relationships, donations and sponsorships in favor of the local community. In 2009, the company's financial and CSR reports were awarded by FERPI (the Italian Federation of Public Relations) the National Award "Oscar di Bilancio"³⁵ for the category small and medium sized enterprises. Today, Coy B's HSE function comprises the HSE Manager and his assistant and reports directly to the company's General Manager.

From this brief account of Coy B's CSR history, it can be argued that Coy B is conveying to the public the image of a strong CSR commitment. With this background information, the paper now turns more specifically to the analysis of Coy B's CSR strategic orientation. We then analyze the company's CSR-related MCS, with particular attention being paid to their integration within the company's overall MCS. Being Coy B a local subsidiary of a multinational company, in analyzing our empirical evidence we made sure a homogeneous level of analysis – the local level – was maintained for both the independent and the dependent variables in our theoretical framework. Specifically, CSR strategic orientation - as a reflection of managers' perceptions and motivations towards CSR - is part of a company's culture (Hermalin 2007), therefore is difficult to being altered

³⁵ The National Award "Oscar di Bilancio", granted to the organization that has provided the best financial communication strategy in terms of continuity, effectiveness and innovation towards all target publics, represents the most important recognition in this field at a national level.

by top-down impositions (Sørensen 2002) and inherently local. Similarly, regarding MCS, in what follows we clearly discriminate among corporate dependent MCS versus local MCS and we focus specifically on the latter.

4.2.1 CSR strategic orientation

The perceptions, predispositions, tendencies, motivations and desires expressed by Coy B's managers with respect to the company's approach to CSR are well representative of what we called a proactive CSR strategic orientation. Indeed our interviews, conducted across different departments and at different hierarchical levels, revealed managerial beliefs and motivations highly consistent with the three key dimensions (internal locus of control, opportunity orientation, high management aggressiveness) characterizing a proactive CSR strategic orientation.

Locus of control

Concerning locus of control, Coy B's managers are widely and strongly convinced that the company's CSR performance depends primarily on their will, abilities and actions (internal locus of control). This is particularly evident with respect to H&S performance: Coy B's management does not seem even willing to acknowledge that external, uncontrollable factors (such as fatality) may intervene in affecting injury rates. This extreme sense of controllability is perfectly exemplified by the following quotation:

When things like these [*injuries*] happen, our point of view is: we have not done enough; it is our fault, first. Of course that guy [*the injured worker*] is an idiot, really, because he is an expert worker, not a new arrival. But it's our fault because we did not ever say him he should have not done it (Manufacturing Director)

Similarly, all interviewed managers expressed feelings of high satisfaction concerning the extent to which they were able to assure safety concerns

permeate the company's working across all departments and hierarchical levels, as the following quote exemplifies:

The main objective of this system [*HSE reporting system*] is to lead to the highest level of proactivity, substantially, in order not to wait until an event [*injury*] happens, but to prevent the event. And this is possible - in my opinion, but also according to Corradi [*General Manager*] - if the entire chain of command thinks in the same way. Thus, starting from Corradi till to the blue collar of the Final Assembly department, all we have to clearly understand this way of working, thus looking for the maximum possible proactivity (HSE Manager)

Cues for action

Together with an internal locus of control, Coy B's managers clearly embrace an opportunity orientation towards CSR. Indeed, managers are widely convinced that the company's commitment to CSR is strictly linked with its competitive position. In particular, the theme of a strong relationship among the company's HSE management system and processes of continuous improvement emerged repeatedly across the interviews:

I think we - as a company - try to interpret it [*having a certified HSE management system*] not only as a matter of certification in the strict sense, i.e. by paying Bureau Veritas to come in and give us the certificate, but in relation with our processes of continuous improvement. Thus, we believe these things are actually of help to everyone, to all the people working here. [...] So, we are trying to create a virtuous circle with positive impacts on everything (Manufacturing Director)

Another manifestation of this perceived strict relationship among CSR and competitive advantage is represented by the "ECO4 Technology", a stream of R&D activities focused on energy-saving rail solutions:

In our company's general product development process, for the last few years products, there is even a development platform aimed at recycling, in short at the lowest possible environmental impact; there are initiatives – maybe you have seen some ECO4 brochures, to reduce our product's consumption levels and so on and so forth
(Manufacturing Director)

Management aggressiveness

Finally, with respect to the third dimension of CSR strategic orientation, the most recurring themes across all interviews with respect to HSE topics were “excellence”, “alertness” and “proactivity”, all of which clearly relate to a particularly high management aggressiveness:

Simply complying with regulations is no longer sufficient, we must adopt stricter rules than what required by law if we really want to reach excellence levels. Where excellence, in the end, to us means coming to work and not hurt us. Do not hurt us and do not get sick, thus zero accidents and zero occupational diseases (HSE Manager)

As previously noticed, Coy B's managers appear well aware of (and satisfied with) the excellent results already obtained with respect to HSE. However, these widespread feelings of satisfaction do not appear to hamper managerial urge to additionally improve the company's HSE performance, notwithstanding the recognized difficulties of such a challenging aim:

Today the zero injuries target is a common target, by now, shared, we all are well aware about it. Up to 7-12 years ago, we did not even know how many injuries we had. Today, instead, we are at this kind of target we want to achieve (Manufacturing Director)

Taken in total, the evidence for Coy B is strongly evocative of a proactive CSR strategic orientation, characterised by internal locus of control, opportunity orientation and high management aggressiveness.

4.2.2 CSR-related MCS

Our data overall indicate that, in Coy B, CSR-related MCS are extensively integrated within the company's overall MCS. Indeed, the design and functioning of CSR-related MCS, as emerging from interviewees conducted across different departments and at different hierarchical levels and from documentary evidence, clearly suggest that such MCS overcome the boundaries of the HSE unit to affect decisions and actions across the whole organization. In Weaver and colleagues (1999)'s terms, they are viewed as having a valued and fundamental role in the organization's operations. All of the three types of control choices earlier described (result, action and cultural controls) play a role in guaranteeing this high degree of integration.

Result controls

Concerning result controls, Coy B has a structured and quite ample internal reporting system aimed at regularly collecting HSE KPIs. Indeed, HSE targets (on par with financial targets) are among the strategic priorities orienting the company's operations. Being Coy B a local subsidiary of a multinational group, its HSE targets (like other strategic priorities) have to be comprised within a range defined at the group level. However, local subsidiaries' top management actively participates in the strategic planning process at the business unit level. This highly participative planning process guarantees that HSE targets are deeply internalized at the local site level and are not perceived as mere top-down imposition, as Coy B's General Manager explained:

There are some rules. Thankfully, there are not too many impositions. Nowadays objectives are highly shared. That is, how the target setting process works, for example regarding HSE. Let's say that there is the group level but then there are the divisions. The division has a

freedom, within a certain range, for setting up goals. Thus we meet at the division level - the various subsidiaries meet [...] within the division – and we say: “well, this year we have done this, what do we do next year?” And we define the targets, which are so somehow shared, before being imposed. That is, once we have settled them, they become our goals and we all work to achieve them (General Manager)

For example, the main 2010 HSE targets refer to the respect of very stringent frequency and severity injury rates, to a 5% reduction in energy consumption and in hazardous waste production and to a 5% increase recycled waste. Since these targets are amongst Coy B’s strategic priorities, they heavily impact decisions and actions across the whole organization, in particular with respect to the manufacturing and facility management functions. For example, the Manufacturing Director explained as follows how HSE considerations influence his department’s functioning:

In each of our business processes there is indeed always a link with HSE topics. That is, each of our processes is assessed with respect to both the productive aspect in itself and its impact in terms of HSE (Manufacturing Director)

HSE targets seem also to be deeply integrated within the company’s overall budgeting process:

HSE target setting starts in September and finishes at the end of November with the closing of the budget. That is, H&S targets are paired with the budget, because all of the corporate objectives are strictly linked with the budget because they very often have an economic impact (General Manager)

The high consideration in which HSE targets are kept is also evident from the inclusion of HSE performance measures within the internal reporting and monitoring systems used by top managers to regularly track performance

attainment against strategic targets, and not only at the corporate and business unit levels but also at the local subsidiary level. Indeed, several interviewees made reference to different mechanisms through which the continuous monitoring of HSE performance is achieved. At the corporate level, HSE performance monitoring is not only achieved by requiring the HSE function to regularly complete a group-wide database, but also through personal meetings, held every two months, among the parent company's President and Coy B's General Manager. At the local subsidiary level, a particularly interesting mechanism in this respect is represented by the HSE Management Review. This consists of a meeting, held twice a year, through which the HSE function communicates HSE targets and performance attainment status to all the company's first-level managers. Thus, this is an important mechanism allowing HSE strategies to be shared across the various departments, overcoming organizational horizontal boundaries, as the following quote explains:

Another decision-making tool is represented by the Quality and HSE Management Review [...] This is mainly an occasion - for Quality and HSE functions - to share all targets (those that have been already met and those that still have to be met) with all first-level managers, thus with all company's functions, from HR to Manufacturing, Engineering, Project Management, Purchasing and so on and so forth. They all attend this meeting and they all receive a copy of this Quality and HSE Management Review (HSE Manager)

Concerning rewarding, our evidence also indicates that H&S targets are included into the Performance Measurement Process (i.e. the performance appraisal procedure on which salary reviews are based) for almost all of the company's employees:

Well, this process [*Performance Measurement Process*] is strongly linked with these objectives. For example, concerning safety, almost everyone here in this company has a safety target. Even at the level of workers. It has been decided, strategically, that safety is a parameter over which everyone must be evaluated (General Manager)

Action controls

With respect to the second type of control choices described in section 2.2, Coy B has also developed some rules, policies and operating procedures aimed at governing the HSE implications of its organizational activities. The two areas in which the integration of HSE operating procedures within other organizational procedures is more evident are capital expenditures approval and procurement. Concerning capital expenditures approval procedures, both the Manufacturing Director and the Controller emphasized that a specific, simplified approval procedure is in place for “safety relevant” investments:

The Safety Relevant classification, both at the site and at the project level, makes the standard approval procedure being disregarded. If workers identify something which can impact their safety or the product’s safety, after a minimal evaluation by Technical Engineering, if they say it’s true the intervention is made, regardless of budget problems (Manufacturing Director)

Concerning procurement, finally, the integration of HSE considerations into this department’s management systems is particularly evident in the Suppliers’ Selection and Assessment Process (SEAP), which requires the acceptance of the group Suppliers’ Code of Conduct and includes several HSE items within the checklist applied by buyers during their suppliers’ selection or maintenance audits.

Cultural controls

Finally, the high degree of integration of CSR-related MCS within Coy A's overall MCS is also achieved by relying on cultural controls aimed at facilitating the diffusion of CSR values and at enhancing CSR awareness across organizational decision makers and members. In particular, several integrative liaison devices - at different hierarchical levels - play a relevant role in this respect.

The highest level integrative liaison device in Coy B is represented by the HSE Steering Committee, which has been recently introduced by the General Manager as top-level decision-making body for promptly addressing and solving emerging HSE problems. This committee, which meets once a month, is composed of Coy B's General Manager, the HSE function (i.e. the HSE manager and his assistant) and several top managers, chosen from the departments most relevant to the successful implementation of the company's HSE strategies³⁶. The integrative logic behind its composition and its key decision-making role resemble very much those of Coy A's CSR Steering Committee. Indeed, this committee's meetings represent a fundamental way of ensuring the high degree of interfunctional coordination and commitment necessary to the achievement of the company's HSE targets:

The aim of this monthly meeting is a bit that of a HSE Steering Committee. In other words, through this meeting all the macro problems should be raised, in order to make decisions at the top management level on how to solve these problems (HSE Manager)

While the HSE Steering Committee seems to be a fundamental structural arrangement allowing the HSE unit to span horizontal boundaries across the

³⁶ Specifically, they are the Manufacturing Director, the Facility Manager, the Product Introduction Responsible and one responsible for the Service Division.

organization, an extensive system of regular HSE meetings at different hierarchical levels helps the HSE unit in keeping HSE awareness constantly high across all vertical levels. Overall our evidence consistently suggests that, thanks to these integrative liaison devices, Coy B's HSE unit really "has the confidence of and regular interaction with other departments and their managers" (Weaver et al. 1999, page 540). As the HSE Manager explained:

The HSE management system is directly handled by me, together with Mirco Pisacane, but with the help of everyone, basically. The goal, again in terms of enhancing proactivity, is that we define the system's guidelines and verify their correct application, in order to ensure that all people involved then in fact apply the content of these procedures, substantially (HSE Manager)

It can also be added that these frequent and close interactions among members of the HSE unit and other organizational members are not always initiated by the HSE function to ask for collaboration (i.e. unidirectional) but also spontaneously activated by other departments' members to ask for the HSE function's advice (i.e. bidirectional), as this quote illustrates:

When we, for example, set a layout, we always give and receive a feedback from our HSE office on each production set up activity we do. That is, every change in the layout is reviewed together with an HSE expert deciding whether what we are doing is compliant with standards and our procedures (Manufacturing Director)

This is highly representative of the degree to which the workings of the HSE unit and those of other organizational units are integrated, thus facilitating the diffusion of CSR values and enhancing CSR awareness across organizational key decision makers and members.

Taken in total, the evidence for Coy B indicates a highly integrative approach to the design of CSR-related MCS, which are extensively integrated within

the companies' overall MCS to affect decisions and actions across the whole organization.

4.3 Coy C

Coy C is a very large, multinational company, listed on both the Italian Stock Exchange and on the New York Stock Exchange and operating in the telecommunication (TLC) industry. In particular, it enjoys a leading position in the Italian market and it has a significant presence in Latin America (revenues from Brazil and Argentina count for 34% of total revenues). Its headquarters are in a highly developed area of Central Italy, where it was founded toward the beginning of twentieth century as government-owned corporation³⁷. In addition to the current three strategic markets (Italy, Brazil and Argentina), Coy C is also active in other parts of Europe, North America, Africa and Asia through its local operational companies. Operating revenues in 2010 totaled Euro 28,373 million, with a profit margin of 14.5%. Around 70% of 2010 turnover was generated in Italy, and nearly 30% in Latin America. At the end of 2010, it employed 70,150 people worldwide. The hallmarks of its strategic approach have always been technological innovation and attention to customers. Appendix B includes some key operating and financial statistics for the last three years.

Concerning the history of Coy C commitment to CSR³⁸, the company began to devote more explicit and structured attention to CSR in 1997, by creating a

³⁷ Coy C was transformed into a public company at the end of 1990s, when the TLC industry was also deregulated.

³⁸ Notice that Coy C privileges the term "Sustainability", instead of "CSR", to refer to its goal "to strike a balance between three dimensions: economic sustainability (keeping and increasing the economic capital); environmental sustainability (safeguarding the ecosystem while guaranteeing the balance between the use of natural resources and our processes) and social sustainability (promoting the principle of equity and respect among people and across generations) (source:

dedicated CSR unit within the Finance and Control Department and by publishing the first socio-environmental report. The document then evolved into the Sustainability Report, which was integrated within the company's Annual Report starting from 2003. Environmental Management Systems, in accordance with the ISO 14001 standard, began to be progressively introduced to the group's operational structures. In 2002, Coy C published its first Code of Ethics and signed up to the Global Compact. In 2003, an internal reporting system based on approximately 200 sustainability KPIs was set up. In the following years, a CSR Policy regarding employees and one regarding suppliers were also adopted. At the end of 2008, sustainability was brought to the attention of the Board of Directors through the Internal Control and Corporate Governance Committee, which performs a coordination and control function in this respect. Simultaneously, the CSR function was transferred from the Finance and Control Department to the External Relations Department, "in order to ensure the more structured communication of initiatives undertaken and results achieved" (2010 Sustainability Report, page 27). In 2009, Coy C was included in the most important international sustainability indexes, including the Dow Jones Sustainability Indexes and the FTSE4Good. In 2010, Coy C was included in the Gold Class³⁹ for the fixed telecommunications sector of the SAM "Sustainability Yearbook 2010". Today, the CSR organizational structure comprises a Group CSR Manager, directly reporting to the External Communication Director and other 8 members at the central level. Moreover,

company's website). Throughout this paper, the terms Sustainability and CSR are used interchangeably.

³⁹ SAM Sustainability Yearbook divides companies into three categories: Gold Class, Silver Class and Bronze Class. For the fixed telecommunications sector, the Gold Class consists of the 4 companies with the highest sustainability score.

CSR unit members interface with several CSR Data Owners, formally appointed for each department⁴⁰. From this brief account of Coy C's CSR history (available on the company's web-site), it can be argued that Coy C, similarly to Coy A, is publically conveying the image of company strongly committed to CSR principles. Also in this case, such reputation is reinforced by prestigious international recognitions and awards. With this background information, the paper now turns more specifically to the analysis of Coy C's CSR strategic orientation. We then analyze the company's CSR-related MCS, with particular attention being paid to their integration within the company's overall MCS.

4.3.1 CSR strategic orientation

In Coy C, managerial perceptions, predispositions, tendencies, motivations and desires with respect to CSR are mainly evocative of what we called a reactive CSR strategic orientation. In particular, the beliefs and motivations expressed by Coy C's managers when describing their company's commitment and approach to CSR are highly consistent with two of the three dimensions characterizing a reactive CSR strategic orientation, i.e. external locus of control and low management aggressiveness. Concerning the third dimension (cues for action), yet, our empirical evidence seems *prima facie* at odds with a reactive orientation, pointing more towards an opportunity-, rather than a problem-, orientation to CSR issues. However, in what follows and in the discussion section we elaborate in details on this apparent contradictory finding.

⁴⁰ Indeed, "in each department, sustainability data owners are responsible for monitoring the activities and gathering data and information for sustainability reporting" (2010 Sustainability Report, page 28). Functional data owners are not first-level managers, but generally second- or third-level managers.

Locus of control

Starting with locus of control, from our empirical evidence it emerges a common perception of limited ability to meaningfully influence Coy C's activities towards enhanced CSR performance. Instead of perceiving their company's CSR activities as dependent on their will, abilities and actions, Coy C's managers view them as primarily dependent on various organizational constraints such as availability of financial and human resources and already defined business strategies, i.e. on factors outside of their control (external locus of control). Several managers, while explaining their approach to CSR planning, emphasized the constraints and difficulties limiting their range of action:

Years ago we were a monopoly, we had enormous financial resources, which of course was reflected in the fact that we could spend more for the environment, for human resources and so on. On the contrary, in the last few years, after privatization, the pressure to be less sustainable has been strong, from a point of view of the company. At present, I would say that we do what we can, in short (CSR unit member, responsible for the relationships with social rating agencies)

As it was the case in Coy A, also in Coy C we find that same perceptions of external locus of control apply not only with respect to the company's internal functioning, but also to the interrelationships among the company and its external environment. Indeed, while Coy A's managers expressed the belief that their company's CSR activities were also capable of profoundly affecting the external, institutional environment, in Coy C such perspective is not present. On the contrary, the relationship among the company's CSR commitments and the external environment is primarily perceived to run in the opposite direction, i.e. external pressures are the main drivers or

constraints for the company's CSR strategies. This view is particularly well expressed by the following passage, in which our interviewee explains her interpretation of the role played by social rating agencies in influencing the company's commitment to CSR:

Social rating agencies have definitely played an important role in enhancing awareness - not so much individuals' awareness - but top management's awareness [...] In the sense that the process was more or less this: given that a company's top management, when making decisions, faces pressures of any kinds, sustainability analysts constitute an element of pressure, even if slight, on its decision-making. And then, well, they can somehow induce management to act to ensure that sustainability is implemented within the company (CSR unit member, responsible for the relationships with social rating agencies)

Management aggressiveness

As it was the case with locus of control, also with respect to management aggressiveness our evidence is strongly consistent with a reactive approach characterized by relatively low management aggressiveness.

The strength of managerial urge to improve the company's CSR performance and to beat competitors on this terrain is much lower in this case as compared to Coy A. Indeed, recurring themes across all interviews were "feasibility", "realism", "difficulty", all of which clearly relate to lowered expectations of success. The low degree of managerial aggressiveness characterizing Coy C's management can be effectively grasped by comparing how Coy A's Group CSR Manager explains their benchmarking activities⁴¹ to the following equivalent explanation for Coy C:

⁴¹ See quotation reported on page 60.

Sometimes we may compare ourselves with our peers. [...] Clearly, we don't like being second to anyone. But we also must reckon what are our possibilities. We try to set targets that are meaningful to us, where possible (CSR unit member, responsible for CSR planning)

A somehow disenchanted view on the possibility for the company to continuously improve its CSR performance seem particularly widespread across managers from different departments, as the following quotes signal:

It is not possible to reduce energy consumption by 40% every year; I wish we could always do 40% less, but it is difficult (Vendor Assessment & Process Governance Manager)

Our targets are not particularly challenging. Also because, concerning accidents, we are now at a level that can be hardly improved, yes, it is difficult to improve. Because we have very few and very minor injuries. So, when you get to certain levels, the improvement is ... I mean, zero risk, zero accidents, I wish it were possible. We would be happy enough if fatal accidents were zero (HSE Manager)

Cues for action

Finally, concerning the third dimension of our CSR strategic orientation construct (cues for action), we previously mentioned an apparent contradiction: Coy C seem to embrace more of an opportunity orientation (typical of proaction) rather than a problem orientation (typical of reaction and consistent with an external locus of control and a low management aggressiveness). Indeed, the company's management seems to perceive CSR as an opportunity to seize rather than a problem forcing some reaction on the part of the organization, as the following passage exemplifies:

I think that the future of sustainability, at least in my opinion, is right in the ever-closer union between sustainability and business. That is,

the company must make sustainability a business lever. And in this we are moving interesting steps (Group CSR Manager)

However, by analyzing more in depth the “business case” rationale embraced by Coy C’s management and in particular by comparing it to Coy A’s one, it appears definitely more restricted and less challenging the company’s internal workings. Indeed, the benefit by far most frequently cited by Coy C’s managers with reference to the company’s CSR activities is cost reduction:

There are some initiatives that are truly remarkable. And of course these are the initiatives that translate into savings. Concerning electricity consumption, we are talking about 100 million a year, we're talking about hundreds of millions of euros, not 1 or 10. So, even a one percent reduction in energy consumption has an impact, in short. These are initiatives which have an economic return. This aspect is never overlooked or not considered (Vendor Assessment & Process Governance Manager)

Other perceived benefits (such as the inclusion in sustainability indexes) also tend to be framed in financial terms. This constrained view of the contributions of CSR commitment to the company’s competitive advantage sharply contrast with the plethora of both tangible and intangible value drivers mentioned by Coy A’s management. In other words, the perceived link among the company’s CSR performance and competitive advantage appears sensibly weaker in this case. As a first move in the direction of strengthening this link, however, the company has recently launched a Green Label:

Tomorrow a press release will be issued pointing out the fact that we have launched our first line of products with the Green label. We have created a Green brand that will be given to product families that meet

specific characteristics in terms of environmental impact, for example reduced energy consumption in comparison with equivalent products of the same category, or use of easier to recycle materials, or reduced use of hazardous materials and so on [...] This is another path we are trying to take (CSR unit member, responsible for CSR planning)

However, again, the logic underlying this initiative is much less revolutionary than the “Green Performance” concept of Coy A. The fact that in Coy C the business case rationale for CSR is perceived in a somehow restricted and lowly challenging fashion may be partly due to the “green” business in which the company operates, which allows the company’s management to take advantage of climate change and other environmental “hot” topics as slogan to sell its services in a mostly business as usual logic:

Our company can significantly contribute to the theme of fighting climate change, just with its business. That is, we are in a "lucky" position with respect to this issue in the sense that our core business can make a substantial, relevant contribution to solving - or better, solving is maybe too much – to contrasting the climate change problem. Because we offer solutions that are able to reduce the movement of persons and things over the territory, and therefore are able to reduce CO₂ emissions in the atmosphere (Group CSR Manager)

Summing up, even if Coy C appears to embrace an opportunity orientation to CSR rather than a real problem orientation, nevertheless in this respect its approach is much less proactive than Coy A’s one; thus, it seems possible to reconcile this relatively ‘restricted’ opportunity orientation with an overall reactive CSR strategic orientation, as signaled also by the external locus of control and the low management aggressiveness⁴².

⁴² For a more detailed discussion on this point, refer also to section 5.

4.3.2 CSR-related MCS

The evidence consistently suggests that, in Coy C, CSR-related MCS are not formally integrated within the company's overall MCS. Our findings concerning CSR-related MCS design and functioning, mainly deriving from interviewees conducted across different departments and at different hierarchical levels and from documentary evidence, reflect that such MCS tend to remain confined within the boundaries of the CSR unit and thus are not really able to affect decisions and actions across the whole organization. More than having a valued and fundamental role in managing the organization's operations (like in Coy A and in Coy B), in Coy C CSR-related MCS seems to play mainly an external, façade role aimed at demonstrating CSR commitment to the public. This low degree of integration among CSR-related MCS and the company's overall MCS emerges from the analysis of all of the three types of control choices earlier described (result, action and cultural controls).

Result controls

Concerning result controls, over the years Coy C developed an ample, organization wide internal reporting system aimed at regularly collecting, through a dedicated IT platform (CSR Data Management), an extensive set of around 200 CSR KPIs. However, the main purpose of this internal reporting system is to provide data for the company's Sustainability report, while the link with the company's strategic planning process seems absent. It is interesting to note that, when broadly asked whether the company's approach to the management of CSR were more or less structured depending on the topics (i.e. environment, H&S etc.), the Group CSR Manager answered by referring to this reporting system, seemingly equating the management of CSR with the collection of CSR performance measures. When asked more

specifically about the relationship among the company's industrial plan and the CSR plan, all interviewees answered that CSR targets are not included in the strategic plan (with the exclusion of an energy reduction consumption target) and that the CSR unit is not formally involved in the strategic planning process:

We [CSR unit's members] are not involved [in the strategic planning process], or better, it is not completely accurate to say that we are not involved. In the sense that we try to influence, let's put it this way, to be very transparent and honest, we try to influence what is then transferred into the business plan, trying - of course thanks to our knowledge of colleagues and process owners - to raise their awareness on the fact that, perhaps, in the presence of two options that have the same economic impact ... Because you understand that what matters at the end is the economic impact. But sometimes, maybe, we succeed in orienting them on the more sustainable option (CSR unit member, responsible for CSR planning)

Indeed, our evidence regarding the CSR planning process consistently suggests that CSR targets are defined by the CSR unit *ex-post*, i.e. by quantifying the CSR implications of already approved strategic plans and budgets, are then shared with and agreed upon by the various departments' CSR Data Owners and finally are published within the Sustainability Report.

As the Group CSR Manager explained:

Well, the sustainability plan, let's say, should not be underestimated and should not be overestimated. In the sense that there we adopt a very realistic and very sustainable approach [...] That is, it is clear that when we prepare the sustainability report, in January-February, the budgeting process is almost completed, so they [CSR Data Owners] know the resources they can rely on. So if they tell me: "look, for this

year we are happy with the CHP we already have”, it is clear that I do not double the goal, right? So there is a process of negotiation and dialogue with the functions to understand where is the right balance between an ambitious target and a target we can reach based on the resources that the company has allocated (Group CSR Manager)

Thus, in Coy C CSR targets seem to remain largely confined to the CSR unit; given that they are not formally integrated within the company’s industrial plan, their influence in orienting decisions and actions across the whole organization is at best limited, as the following quotation explicitly recognizes:

When you are able to respect what Sustainability said, you communicate it, trivially. In contrast, when it is not possible to modify the budget or that action is not feasible, this is still communicated to Group Sustainability, which however has no levers, possibly, to increase the budget or to diversify investments in other areas, it does not act directly (HSE Manager)

As CSR performance measures are not formally integrated in Coy C’s strategic plan, they are neither integrated within the internal reporting and monitoring systems used by top managers to regularly track performance attainment against targets. On the contrary, CSR performance monitoring is once again an exclusive responsibility of the CSR unit:

[The 200 KPIs collected quarterly] are analyzed, in short. We make some analyses, we monitor the trend, we maybe call our colleagues if we discover anomalous trends [...] We do what is called an analytical review. Then clearly the measurement is so complex that it is not that we go back to the source. But we do some reasoning about data. But of this type, analyzing trends and discussing with colleagues any anomalous trends (Group CSR Manager)

Concerning rewarding, we found some evidence on the inclusion of CSR-related targets among the MBOs used to incentivize a few high level managers⁴³.

Action controls

With respect to the second type of control choices described in section 2.2, the two areas in which the integration of CSR procedures within other organizational procedures is more evident are procurement and capital expenditures approval. Concerning procurement, we found evidence of some integration with respect to suppliers' selection and evaluation procedures, requiring the commitment to observe the Group's Code of Ethics as mandatory criteria for inclusion in the vendor list and incorporating environmental criteria in the procurement specifications of some products⁴⁴. Moreover, there is an important project in progress for the definition and implementation of a Sustainable Supply Chain Management System. However, the general impression regarding the integration of CSR considerations into the procurement department's procedures and the interactions among this department's members and CSR unit's members is that of mainly unstructured and still at their infancy processes, as this quote exemplifies:

In this logic of improving the structuring of the process, there is also the idea to have a constant flow with Sustainability [...] In short, just a constant relationship between us and them and maybe not only in canonical occasions in which there is to prepare the sustainability

⁴³ However, we weren't able to collect more detailed information or documentary evidence on MBO and other incentive systems, which tend to be considered highly confidential matters.

⁴⁴ However, these environmental criteria apply only to a specific subset of Coy C's purchases and we were not able to obtain an estimate of the percentage of purchases with green requirements.

report or when maybe there are some special events. This in order to give greater emphasis and bring better results to our CSR goals and related economic objectives (Vendor Assessment & Process Governance Manager)

Concerning capital expenditures approval procedures, Coy C's CSR unit introduced several years ago the so called Sustainability Assessment Sheet procedure, which requires that, for all projects involving a significant investment, each project manager completes this format by qualitatively assessing the impact of the project with respect to 8 categories of stakeholders. The role played by this tool, however, seems to be more a sensitization one (i.e. enhancing referents' sensibility towards the CSR implications of their projects) than a real decision-orienting one, as can be argued from the following quote:

The assessment is a qualitative evaluation, which should not be underestimated nor overestimated. It's not that now, if an investment has a payback time of 10 years, to give an example, it is approved because it is very sustainable, honestly. It is clear that, in the evaluation process, it is important to draw attention on those issues. It's important to raise the level of sensitivity [...] But for the purposes of the investment decision it has, however, a limited scope. I cannot say that it weighs zero, however it does not even weigh 100, honestly
(Group CSR Manager)

Cultural controls

Finally, a relatively low degree of integration of CSR-related MCS within Coy C's overall MCS emerges also from the analysis of cultural controls. This is particularly evident in the type of integrative liaison devices put in place in order to promote the coordination and management of relations across the CSR unit and the other organizational units.

The highest level body in Coy C's CSR governance system is represented by the Internal Control and Corporate Governance Committee, which was in 2008 formally assigned a supervisory role "through a check on sustainability activities in general" (2010 Sustainability Report, page 28). This quite generic coordination and control function contrasts sharply with the specific executive responsibilities of Coy A's CSR Steering Committee. Moreover, being this body composed mainly of non-executive board members, it does not play any significant role in fostering a high degree of interfunctional coordination and commitment to CSR targets among Coy C's various departments.

This committee, being very high level, because it is a committee of the board, clearly has no practical, operational tasks on sustainability. It has mainly a direction and control function (Group CSR Manager)

The other integrative liaison device in Coy C is represented by the network of interactions among the CSR unit's members and their CSR Data Owners, formally appointed for each department. These regular interactions represent the main way through which Coy C's CSR unit is able to overcome horizontal and vertical boundaries across the organization. However, from our evidence emerged clearly that these relations are in place primarily for collecting data for sustainability reporting and for social rating agencies' questionnaires. Thus their potential integrative role, i.e. their effectiveness in allowing CSR unit's members to personally involve themselves in the decision activities of their colleagues, is not really materialized. Indeed, CSR unit's members take advantage of these channels to try to diffuse a CSR sensibility through the organization:

Our continuous commitment to increase awareness of the other business areas, of our process owners (who by now see us as smoke

and mirrors because we are always there to ask for information, to admonish, someone calls us “our green consciousness” when we talk about the environment, or things like that) is so that, somehow, sustainability implications are taken into considerations when developing projects (CSR unit member, responsible for CSR planning)

Thus, CSR unit’s members are viewed by their colleagues primarily as “green conscience”, i.e. CSR advocates reminding them the CSR implications of their activities. However, CSR unit’s members are not directly involved in the management of such CSR implications:

From an organizational viewpoint, Group Sustainability defines sustainability policies, strategies, objectives. Then each operational function develops these actions internally. So each operational function directly looks after these actions (Vendor Assessment & Process Governance Manager)

Thus, in Coy C’s the patterns of interactions among members of the CSR unit and other organizational members seem to be unidirectional, i.e. always initiated by the CSR function to ask for their colleagues’ collaboration, without other departments’ members ever spontaneously calling CSR colleagues into question to ask for their advice. This evidence points at a relatively low degree of integration among the workings of the CSR unit and those of other organizational units.

Taken in total, the evidence for Coy C indicates a lowly integrative approach to the design of CSR-related MCS, which are scarcely integrated within the companies’ overall MCS; thus, their role in directly affecting decisions and actions across the whole organization seems hindered.

4.4. Coy D

Coy D is a medium-sized Italian company, listed on the STAR segment of the Italian Stock Exchange, and it is one of the world’s main home

appliances components manufacturers. In particular, it is specialized in the design and production of non-ferrous alloy components for the gas cooking appliance market. Its headquarters are in a highly developed area in the North-East of Italy, where it was founded in the 1950s. Coy D is also present in Brasil with an industrial site. Operating revenues in 2010 totaled Euro 161 million, with a profit margin of 14.77%. Coy D sells approximately 50% of its products in Italy and exports the remaining worldwide. At the end of 2010, it employed 690 people. The cornerstones of its strategic approach have always been technological innovation and product quality (with a particular emphasis on safety). Appendix B includes some key operating and financial statistics for the last three years.

Concerning the history of the company's commitment to CSR, to date several of the company's CSR activities (for instance donations, promotion of good relationships with the local community, procurement strategies favoring local and micro suppliers) are still managed in a rather informal manner, based on the company's CSR culture - deriving from the entrepreneur's conception of 'company as social good'⁴⁵ - and on the beliefs and values of its top management (a very cohesive team, according to our interviewees). However, and similarly to what observed with regard to Coy B, formalized structures and systems exist in Coy D with respect to the HSE area, which represents a particularly relevant subset of overall CSR issues. In this respect, it is emblematic that the company's organizational chart contains a "Social Responsibility Management System" box, directly reporting to the CEO, but this box's responsible is the HSE Manager.

⁴⁵ "We start from a very different point of view: the company is an asset that belongs to all" (source: company website).

With these remarks in mind, we can state that the company began to devote more explicit and structured attention to CSR in 2001 by publishing the first social report. In 2003, the company's Environmental Management System was certified conformed to the ISO 14001 standard and the Charter of Values was published. In 2004, Coy D signed up to the Global Compact. In the same year, the company's Annual and Social Reports were awarded by FERPI (the Italian Federation of Public Relations) the National Award "Oscar di Bilancio". In 2005, Coy D also obtained the certification of its Social Management System in accordance with the SA8000 standard. Starting from 2006, the Social Report was integrated within the company's Annual Report. Today, the company HSE unit comprises an HSE Manager and an H&S Responsible and reports directly to the company's CEO. From this brief account of Coy D's CSR history, it can be argued that the company is communicating to the public the image of a strong CSR commitment. With this background information, the paper now turns more specifically to the analysis of Coy D's CSR strategic orientation. We then analyze the company's CSR-related MCS, with particular attention being paid to their integration within the company's overall MCS.

4.4.1 CSR strategic orientation

In Coy D, managerial perceptions, predispositions, tendencies, motivations and desires with respect to CSR are mostly suggestive of what we called a reactive CSR strategic orientation. In particular, the beliefs and motivations expressed by Coy D's management when describing its company's commitment and approach to CSR are highly consistent with two dimensions characterizing a reactive CSR strategic orientation, i.e. external locus of control and low management aggressiveness. Instead, concerning the third dimension (cues for action), our empirical material (as it was the case in Coy

C), seems to indicate an opportunity orientation to CSR issues, which is on the contrary typical of a proactive approach. Again, in what follows and in the discussion section we analyze in details this finding apparently contradicting our empirical framework.

Locus of control

Starting with locus of control, from our qualitative data it strongly emerges a widespread perception of limited sense of controllability, i.e. of little ability to meaningfully influence the company's CSR performance. In particular, when describing their company's approach to H&S issues, managers tend to highlight the primary role played by factors and constraints outside of their control - for example production technology - in determining working conditions and H&S performance (external locus of control). The marked difference in perceived locus of control among Coy D and Coy B clearly emerges if we contrast how Coy B's Manufacturing Director described the logic behind their H&S management systems⁴⁶ and the following explanation for Coy D:

We always try to assure a healthy environment, with less risk of accidents and stuff like that. Nevertheless, a worker is a worker, if he works in a furnace at 50°, he works in a furnace at 50° [...] Therefore it is useless – or better, not useless - but it is difficult to transmit the sustainability message to a worker in that department, this is undeniable (CFO)

Several managers, when describing the history of their company's commitment to CSR, emphasized various external constraints (for example unions) and difficulties limiting their ability in actually achieving desired outcomes:

⁴⁶ See quotation reported on page 70.

The main difficulty, in my opinion, was obtaining the involvement from the very base, from blue collars and union representatives. Indeed, we continue to maintain a quite hostile relationship with union representation, with blue collars but in particular with union representation, because the company is heavily unionized [...] Therefore they consider the social responsibility discourse as much smoke and mirrors (Controller)

Management aggressiveness

As with reference to locus of control, also regarding management aggressiveness our evidence is strongly suggestive of a reactive approach characterized by relatively low management aggressiveness. The strength of management aspiration to continuously improve the company's CSR performance is definitely lower in this case as compared to Coy A and Coy B. Recurring themes across the interviews were "legislative compliance" and "difficulty", which clearly relate to lowered expectations of success. Indeed, similarly to the case of Coy C, a general sense of disenchantment on the possibility for the company to additionally improve its CSR performance emerges across managers from different departments, as the following quote signals:

Perhaps, with hindsight, we started [*taking an explicit commitment to CSR*] a bit too much in a hurry [...] we acquired huge visibility, we wanted to declare very explicitly and very strongly a series of commitments, which afterwards were hardly maintained. Thus, continuous improvement has become increasingly difficult (Controller)

With respect to HSE targets, in particular, the starkly lower degree of managerial aggressiveness characterizing Coy D's management in comparison with that of Coy B can be grasped by comparing how Coy B's

Manufacturing Director describes their “Zero Injuries” objective ⁴⁷ to the equivalent quotation for Coy D:

We have a relatively low injury rate compared to industry benchmarks. Sure, our ambition would be [...] to get to an injury rate close to zero [...] We are approaching this goal just now and we want to develop it this year in terms of a strong signal to be given to workers. It's clear that we cannot reasonably think of reaching this target the next year (HSE Manager)

Cues for action

Finally, concerning the third dimension of CSR strategic orientation, as previously mentioned Coy D seems to embrace an opportunity orientation to CSR, which apparently contrasts with the reactive nature of the other two dimensions (external locus of control and low management aggressiveness). Indeed, the company’s managers are broadly convinced of the “business case” rationale for CSR. However, as it was the case for Coy C, this rationale is framed in quite restricted, strictly economic terms (savings), as evidenced by the following passage:

Social responsibility, clearly, lets a company engage in activities which, at the beginning, may be considered costs – such as processes’ reorganization - rather than improvements. But in the end, if we consider that - for example - more satisfied employees signify lower staff turnover and certainly a better quality of their work, then social responsibility activities always translate into an economic advantage for the company or – better - they must result in an economic advantage for the company (HSE Manager)

Therefore, it seems possible to conclude that the nature of Coy D’s opportunity orientation is sensibly less proactive than those characterizing

⁴⁷ See quotation reported on page 72.

Coy A and Coy B and very close to that of Coy C. Again, thus, we believe it is possible to reconcile this relatively ‘restricted’ opportunity orientation with an overall reactive CSR strategic orientation, as signaled also by the external locus of control and the low management aggressiveness⁴⁸.

4.4.2 CSR-related MCS

The evidence for Coy D, mainly deriving from interviewees conducted across different departments and at different hierarchical levels and from documentary evidence, suggests that CSR-related MCS are not formally integrated within the company’s overall MCS. Therefore - more than playing decision-making and decision-influencing roles (as it was the case in Coy A and in Coy B), they resemble mainly buffering, façade systems aimed at demonstrating CSR commitment to the public (as it was the case in Coy C). This low degree of integration emerges from the analysis of all of the three types of control choices earlier described (result, action and cultural controls).

Result controls

Concerning result controls, since 2001 Coy D has been developing an internal reporting system aimed at regularly collecting a quite ample set of CSR KPIs for inclusion in the company’s social reports. Some interviewees made reference to this system’s usefulness as management tool, even if in quite general and indirect terms:

I cannot answer this question - if this path [*CSR reporting*] gave us something more from a managerial point of view. I think so, I believe that amongst us, among the working group on the social report, there is greater awareness, there is a better understanding of the company and of the challenges facing it, and this of course then impacts on

⁴⁸ For a more detailed discussion on this point, refer also to section 5.

management, in fact. But there is no a direct correlation, I cannot demonstrate it (CFO)

However, several interviewees also clarified that the company does not define formal targets for nearly anyone of these CSR KPIs, with the exception of some environmental performance indicators:

Targets do not exist yet for many of these KPIs. We do not set targets for any of these indicators, almost. Only with respect to some environmental and quality indicators there are some targets, for many others there are none, because we have not entered into this logic, yet. Probably we'll get a little at a time, but we have not matured enough this logic, yet (Controller)

Thus, CSR planning appears to be a mainly unstructured and informal process, based on the vision and personal beliefs of the company's top management:

It is useless providing information or collecting data, setting up systems, if these things are not strongly perceived as useful elements for decision making and strategic planning. Indeed, decisions and strategies for sustainability issues are taken and are strongly supported by the top management team even in the absence of a set of structural indicators that systematically are reported (Controller)

A more structured approach can be identified only with respect to the environmental area; indeed, formal environmental targets are annually defined by the HSE unit and the company's CEO, as explicitly required by the ISO 14001 standard. However, also for these few formally defined environmental targets an explicit link with the company's strategic planning or budgeting processes is absent:

No, well, the aim to reduce our environmental impact is included into the social report, so it is included amongst our improvement

objectives. But then this aim is not reflected into the business plan or into the budget, no (CFO)

As HSE performance measures are not formally integrated in Coy D's strategic planning or budgeting processes, they are neither integrated within the internal reporting and monitoring systems used by top managers to regularly track performance attainment against targets, even if the company is now planning to move some first steps in this direction:

We wanted to start bringing some indicators to the Board together with quarterly reports. Then we got a little stopped, partly due to the crisis that hit the economy, and so we got a little stopped. But this was an issue that was raised by the Board of Directors, the examination of some indicators in order to have a monitoring from this point of view (CFO)

Concerning rewarding, finally, the company is at the moment defining a new MBO system within which it is planning to introduce an environmental target directed at the HSE unit. Overall, from our evidence it appears that CSR-related MCS tend to remain confined within the boundaries of the HSE unit and of the functional departments that most directly have to do with environmental impact (i.e. manufacturing and technical departments). Indeed, there are no formal mechanisms in place allowing environmental strategies to be made visible and more widely shared across the various organizational departments.

Action controls

Considering the second type of control choices earlier described, an area in which some integration of CSR operating procedures within other organizational procedures can be identified is procurement. Indeed, some interviewees made broadly reference to the inclusion of social and

environmental criteria into suppliers' selection and evaluation procedures. However, the general impression regarding the integration of CSR considerations into the procurement department's procedures is that of a rather unstructured and still at its infancy process:

We begin with visiting suppliers, obviously, we make an audit during which we assess several aspects. These vary from quality certifications to environmental ones and, eventually, also a sharing – because rarely we find suppliers with the SA8000 certification – but at least a sharing of SA8000 principles (Purchasing Manager)

Moreover, concerning capital expenditures approval procedures, our evidence reveal some priority informally granted to environmental investment, but there are no formal rules in place in this respect.

Cultural controls

Finally, a relatively low degree of integration of CSR-related MCS within Coy D's overall MCS emerges also with respect to cultural controls. This is particularly evident in the absence of any sort of CSR-related integrative liaison device, even concerning HSE issues, i.e. those CSR issues more formally managed within the company. This may be partly explained by the fact that, in Coy D, the top management team is a rather small group that can quite easily and informally interact. Nevertheless the absence of formal CSR tasks forces, committees and the like certainly does not contribute to maintain consistently high levels of attention and commitment towards CSR strategies. This sharply contrasts with the high reliance on HSE integrative bodies characterizing Coy B, a company comparable to Coy D in terms of size.

Taken in total, the evidence for Coy D indicates a lowly integrative approach to the design of CSR-related MCS; being these systems scarcely integrated

within the companies' overall MCS, their role in affecting decisions and actions across the whole organization seems at best minor.

5. Between-case discussion and analysis

The case descriptions provide particularly rich insights on 'how' and 'why' organizations publicly adhering to CSR principles may design and implement CSR-related MCS. Specifically, they allow us to observe high variation both in the degree of integration of CSR control mechanisms within a company's overall MCS and in the nature (proactive/reactive) of a company's CSR strategic orientation.

With respect to the how dimension, two quite distinct approaches emerge. On the one side, Coy A and Coy B deeply integrated their CSR-related MCS within their overall MCS by leveraging on all of the three types of control mechanisms (result, action and cultural controls) described by Merchant (1998; Merchant et al. 2003). In particular, in both companies CSR performance measures are included within the overall strategic planning, internal reporting and rewarding systems; standard operating procedures firmly introducing CSR considerations into various departments' processes were adopted; and integrative liaison devices are highly relied on as mechanisms assuring both an efficient interfunctional coordination of CSR activities and the diffusion of CSR values and awareness across key organizational decision makers and members. On the contrary, Coy C and Coy D display a lowly integrative approach to the design and implementation of their CSR-related MCS, which is evident with respect to all of the three types of control choices analyzed. Indeed, in both companies CSR performance measures are generally not included within the overall strategic planning, internal reporting and rewarding systems; standard operating procedures formally introducing CSR considerations into various

departments' processes are either absent or rather vague; and integrative liaison devices are either completely absent (as in Coy D) or significantly less effective as coordination and value sharing mechanisms (as in Coy C).

Concerning the why dimension, CSR strategic orientation emerges as relevant contingency able to explain the observed variation in the configurations of CSR-related MCS. In this respect, our qualitative data reveal that managers' CSR strategic orientations are indeed extremely homogeneous across different organizational levels and departments, providing support for our firm-level conceptualization of the construct⁴⁹.

More specifically, Coy A and Coy B are strongly evocative of a proactive CSR strategic orientation, characterised by internal locus of control, opportunity orientation and high management aggressiveness. On the contrary, Coy C and Coy D are suggestive of a reactive CSR strategic orientation. Indeed, these two companies have in common an external locus of control, a low degree of management aggressiveness and a rather 'restricted' opportunity orientation. With respect to this latter dimension, therefore, our findings are not perfectly consistent with our expectation that the three dimensions of strategic orientation move always in the same direction (Miller et al. 1983; Wood et al. 1997). Indeed, our framework predicts a reactive CSR strategic orientation to be associated with a problem orientation - i.e. with the perception of CSR as an external threat – rather than with an opportunity orientation. However, such a contradictory finding

⁴⁹ As sole exception, the HR Director of Coy B exposed views and beliefs towards CSR issues in general - and HSE issues in particular - often contrary to those of all her interviewed colleagues. Interestingly enough, however, this person entered Coy B only 10 months before our interview. In this specific case, therefore, it seems reasonable to interpret the views and beliefs expressed by the interviewee as representing more her 'personal' CSR strategic orientation rather than the 'firm-level' construct which is the focus of this study.

is not really surprising, for two reasons. Firstly - as already noticed - ideal types (such as the reactive/proactive ones) are useful theoretical schemes through which making sense of empirical data, but in practice they hardly materialize. Indeed all organizations are, to some degree, both proactive and reactive. They may, however, have a general tendency toward one orientation or the other (Wood et al. 1997), as strongly suggested by our empirical evidence. Indeed, we actually found that the three dimensions of the CSR strategic orientation construct actually tend to align consistently with the 'ideal' configurations of reaction versus proaction depicted by our theoretical framework, with the unique exception of an opportunity orientation characterizing the - otherwise mainly reactive - orientations of Coy C and Coy D. Secondly, our sampling criteria likely contributed to our impossibility of identifying a truly problem orientation to CSR across our case study organizations. Indeed, given our broad aim to explore CSR-related control mechanisms, we purposefully selected organizations externally promoting the image of a strong CSR commitment and publicly adhering to CSR principles. As a consequence, we focused from the very beginning on organizations that are undoubtedly proactive with respect to their CSR external communication activities. Indeed, all of them are proactively engaging in CSR reporting and are being awarded important recognitions in this respect. This is consistent with an opportunity orientation towards CSR, which is evidently perceived to generate at least some reputational benefits, even by the two mainly reactive companies. However, by analyzing more in depth managerial conceptions and motivations behind the externally conveyed CSR commitment, we were able to grasp the differential nature of the companies' opportunity orientations towards CSR, with the two overall reactive companies characterized by a much more 'restricted' opportunity

orientation in comparison with the ‘enlarged’ opportunity orientation of the two proactive companies. In this sense, we believe this partially contradicting evidence can be reconciled with our theoretical framework.

Our between-case analysis allows us to shed some light also on one of the reasons why there may be mismatch among the CSR image companies communicate externally and the control mechanisms they adopt internally, thus addressing the diffidence and criticisms that have diffused against companies’ CSR disclosures over the last few years. In particular, CSR reporting has been variously described as ‘smoke and mirrors’ (Moerman et al. 2005), ‘window dressing’ or ‘greenwashing’ (Laufer 2003), i.e. a façade activity aimed at maximizing perceptions of legitimacy (Deegan 2002) but with little - if any - effects on the real work of organizations (Adams 2004; O’Dwyer 2005, 2003; Larrinaga-Gonzalez et al. 2001). Our empirical findings seem to indicate that such a mismatch is more likely in companies characterized by a mainly reactive strategic orientation towards CSR (Coy C and Coy D in our case). Indeed, even if such companies may well engage in social and environmental reporting as a rather inexpensive way to signal their commitment to CSR issues and to possibly gain some reputational benefits, their overall reactive way of perceiving and interpreting the CSR challenge hinders a real integration of social and environmental concerns into their internal decision-making and control processes.

Summing up, our between-case analysis highlights the impact of a company’s strategic approach towards CSR on the configuration of its CSR-related MCS, providing support for our theoretical proposition regarding the relationship among CSR strategic orientation (proactive/reactive) and the degree of integration (high/low) of CSR-related MCS.

It is interesting to notice that we couldn't have made sense of the observed variation in the configurations of CSR-related MCS by relying on variables more extensively investigated within SEA and CSR literature such as size (Ferreira et al. 2010; Durden 2008; Adams et al. 1998; Sharma 2000; Aragón-Correa 1998), industry membership (Ferreira et al. 2010; Adams et al. 1998; Banerjee et al. 2003) or business strategy (Aragón-Correa 1998). For example, by considering size we should have expected a similar approach to the design of CSR-related MCS in the two large organizations (Coy A and Coy C) and in the two medium-sized companies (Coy B and D)⁵⁰. On the contrary, the observed clustering (which groups together Coy A and Coy B, on the one side, and Coy C and Coy D, on the other) clearly can't be explained by relying on size arguments. Similarly, industry membership as well seems insufficient in explaining our data, particularly the differential approach to HSE-related MCS found in Coy B and Coy D. Indeed, these two organizations' production technologies are rather similar in terms of their relatively low riskiness for workers' safety, as explicitly recognized by managers from both companies. Nevertheless, their approach to HSE-related MCS is sharply contrasting. Finally, also business strategy does not appear a relevant variable in discriminating among more or less integrative approaches to the design of CSR-related MCS. Indeed, all of our case study organizations are highly entrepreneurial/prospectors firms emphasizing

⁵⁰ In this respect, it is interesting to notice that contradicting arguments and expectations concerning the impact of size on CSR-related MCS can be found within the (very limited) extant literature on the topic. Indeed, while Ferreira and Moulang (2010) expect larger organizations to adopt more sophisticated environmental management accounting systems, Durden (2008) on the contrary suggests that small businesses, unlike large public corporations, often have strong visionary management and may adopt a broader accounting focus, encompassing aspects such social accounting and other related initiatives.

innovation and product differentiation (Langfield-Smith 2007), as can be intuited from the previously provided introductory presentations and as clearly emerged by analysing both documentary and interview evidence⁵¹. As already noticed, scholars in both SEA and CSR literature have started to suggest shifting the focus of empirical investigation from external factors to internal managerial interpretations, beliefs and sensemaking processes with respect to CSR (O'Dwyer 2002; O'Dwyer 2003; Basu et al. 2008; Adams 2002). Our observation concerning the inability of more traditional contingent variables in explaining CSR-related MCS configurations provide further support for the validity of these claims.

6. Conclusions

Very little is known about the control mechanisms settled up by organizations in relation to their CSR strategies and initiatives. Past research on social and environmental accounting has mainly focused on external reporting, but it has nearly completely neglected internal control issues. The present paper tries to address this limitation and examines the variables that affect companies' design choices with respect to their CSR-related MCS.

Consistently with recent contributions emphasising the need to account for managerial individual beliefs and perceptions when studying a firm's decision-making with respect to CSR (Basu et al. 2008; O'Dwyer 2003), this study explores the impact of a new strategic variable – CSR strategic

⁵¹ Therefore, with respect to their 'wider' strategic orientation - i.e. the orientation leading a company's overall business strategy - all the case study organizations appear to be rather proactive, even the two reactive companies with respect to their CSR strategic orientation. In this sense, our empirical data seem to suggest that a company's CSR strategic orientation is not dependent on its wider strategic orientation, i.e. that the two dimensions may well move in opposite directions. Future work could fruitfully investigate more in depth the link among a company's CSR strategic orientation and its wider strategic orientation, an issue which is beyond the scope of the present study.

orientation - on CRS-related MCS. In addition, acknowledging the relevance of the conceptual distinction among integrated and disintegrated structures, which is particularly pertinent to the CSR domain, this study focuses on the degree of integration of CSR-related MCS within companies' overall MCS. More specifically, the analysis suggests that - according to the nature of a company's strategic orientation towards CSR, whether proactive or reactive - CSR-related MCS tend to be integrated within the overall MCS to a higher or lower extent, and thus are more or less effective in orienting decisions and actions across the whole organization. Indeed, when incorporated within already existing, legitimate and enforced planning and control processes, CSR-related MCS are promptly endorsed and actually come to play those decision-making and decision-influencing roles ascribed to MCS (Luft et al. 2003). On the contrary, when CSR-related MCS remain disconnected from the company's overall MCS, their role is mainly limited to that of façade, buffering mechanisms without any substantial impact on organizational everyday workings (Weaver et al. 1999).

The analysis started with a review of different streams of literature (CSR, SEA and management accounting) pertinent to the object of study and relied on that prior knowledge to advance a preliminary theoretical framework. This framework was further explored by means of a field study research method. Indeed, given that the study of MCS with respect to CSR is at an early stage, we thought that theory development and refinement was definitively more desirable in this phase than testing pre-defined hypothesis. Our empirical evidence confirmed the expectations concerning the impact of CSR strategic orientation on CSR-related MCS.

This study contributes to the literature in several ways. First, it provides new insights concerning how companies internally control their CSR initiatives,

answering to a call for more management accounting research within SEA literature. Second, by theoretically deriving and empirically validating a definition and measurement strategy for the degree of integration of CSR-related MCS within a company's overall MCS, it offers a framework for distinguishing among the different approaches (more or less integrative) companies may adopt with respect to their CSR control mechanisms. Finally, by introducing CSR strategic orientation as new variable capable of explaining the observed variation in CSR control systems, it demonstrates the usefulness of a focus on managerial interpretations, beliefs and sensemaking processes in studying companies' approaches to CSR (Basu et al. 2008). Such a focus could be fruitfully applied to the examination of other SEA activities, for example SEA reporting.

This study has also important managerial implications. Indeed, it provides accountants in business and other practitioners with rich insights on the challenges of designing CSR-related MCS. These insights are particularly valuable given, on the one hand, the striking paucity of empirical evidence on the topic and, on the other hand, the ever escalating pressures companies are facing with respect to their social responsibilities. In particular our analysis, by highlighting the importance of various forms of MCS integration, reveals that the mobilization of CSR-related MCS by top managers may not be enough to deploy a CSR strategy. The regular MCS may remain a more structuring force of actors' behavior, and CSR-related MCS can remain peripheral and disconnected from organizational everyday workings. In this respect, our in-depth description of how high integration was achieved in Coy A and Coy B via properly designed result, action and cultural controls will provide a helpful guidance to practitioners faced with the problem of integrating CSR-related MCS within their companies' overall MCS. Indeed,

our conceptualization of the degree of integration of CSR-related MCS within a company's overall MCS can be used as a repertoire for building an organizational diagnostic of the organization's capacity to deploy a CSR strategy.

This study has only started to scratch the surface of the complexities of control mechanisms for CSR. As research advances, certainly more fine-grained classifications, descriptions and dimensions of CSR-related MCS can be developed. Future research can also enlarge the set of variables that affect the design of CSR-related MCS and their effectiveness in orienting organizational decisions and actions. In addition, interesting new insights could emerge by adopting a longitudinal approach to investigate how the processes of designing CSR control mechanisms and of integrating them within the company's overall MCS unfold over time. Such a longitudinal approach could also be particularly useful to explore the causality issue previously noticed: how does a company's CSR strategic orientation evolve over time and how does this influence – and is in turn influenced by – CSR control systems? A longitudinal examination of these issues may enrich and refine our initial framework regarding the link among a company's CSR strategic orientation and its CSR control systems.

Notwithstanding these limitations, this study does provide some insights into the different configurations CSR-related control mechanisms may assume and illustrates how this observed variation is dependent on managerial beliefs, predispositions and motivations towards the CSR challenge.

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Appendix A. Summary of interviews conducted

Panel A: Coy A	No. of interviews	Duration (min.)	Tape-recorded (yes/no)
Sustainability and Risk Management Director	1	60	No
Group CSR Manager	2	120	Yes
Group Risk Officer	1	100	Yes
Project Planning Manager	1	70	Yes
Global Purchasing Manager	1	80	Yes
CSR Country Manager (Turkey)	1	35	No
Environmental Specialist – HSE department	1	110	Yes
Total interviews for Coy A	8	575	
Panel B: Coy B	No. of interviews	Duration (min.)	Tape-recorded (yes/no)
General Manager	1	75	Yes
HSE Manager	1	80	Yes
Manufacturing Director	1	120	Yes
External Relations Manager	1	120	Yes
Controller	1	90	Yes
HR Director	1	70	Yes
Buyer	1	110	Yes
Total interviews for Coy B	7	665	
Panel C: Coy C	No. of interviews	Duration (min.)	Tape-recorded (yes/no)
Group CSR Manager	2	100	Yes
CSR unit member, responsible for the relationships with social rating agencies	1	90	Yes
CSR unit member, responsible for CSR planning	1	80	Yes
Group HSE Manager	1	76	Yes
Vendor Assessment & Process Governance Manager	1	120	Yes
Total interviews for Coy C	6	466	
Panel D: Coy D	No. of interviews	Duration (min.)	Tape-recorded (yes/no)
CFO	1	75	Yes
HSE Manager	1	90	Yes
Controller	1	80	Yes
Purchasing Manager	1	65	Yes
HR Manager	1	90	No
Total interviews for Coy D	5	400	

Appendix B. General characteristics of case-study organizations

	Coy A			Coy B			Coy C			Coy D		
HQs' Location	Italy, north			Italy, north-west			Italy, centre			Italy, north-east		
Industry	Auto parts and tyres manufacturing			Rail equipment manufacturing			Telecommunications services			Home appliances components manufacturing		
Publicly quoted	Yes			No			Yes			Yes		
Operating and financial statistics	2010	2009	2008	2010	2009	2008	2010	2009	2008	2010	2009	2008
No. of employees	30,329	29,565	31,500	672	660	350	70,150	69,964	76,028	690	685	823
Op. revenues (€/million)	5,048	4,517	4,957	306	413	377	28,373	27,960	31,045	161	130	167
EBIT (€/million)	408	297	43	52	55	58	5,802	5,552	5,461	26	16	21
EBIT Margin (%)	8.1	6.6	0.9	16.9	13.3	15.3	20.4	19.9	17.6	16	12.4	12.7
Total assets (€/million)	5,619	6,728	6,933	479	509	434	89,131	86,181	85,635	182	173	184
Long term debt (€/million)	894	1,505	1,375	2	2	3	34,403	36,273	33,649	16	22	23

Appendix C. Exemplary quotes for CSR strategic orientation's dimensions

Panel A: Locus of control (external/internal)			
Coy A	Coy B	Coy C	Coy D
<p>We can say that, to date, the process is virtually consolidated. In the sense that, after years, the new [<i>sustainability</i>] management model is indeed established. Because changing a company's management model - or making people aware that this new pattern of running the business plus that "quid pluris" represents sustainable management - is not easy. But after years we can say that management is - if not still autonomous - however it is beginning to have in its DNA the characteristics of managing in a sustainable perspective which are needed in order to ensure sustainability (<i>Group CSR Manager</i>) – Internal</p>	<p>When things like these [<i>injuries</i>] happen, our point of view is: we have not done enough; it is our fault, first. Of course that guy [<i>the injured worker</i>] is an idiot, really, because he is an expert worker, not a new arrival. But it's our fault because we did not ever say him he should have not done it. Or rather, we gave him directions but not so precise. So now it's been done an action to raise awareness throughout the department, we have done special training on grindstone use, traditional grindstone, notice, not a particularly sophisticated or risky tool (<i>Manufacturing Director</i>) – Internal</p>	<p>Clearly, on those [<i>sustainability</i>] issues over which we can intervene in a short time, we intervene in a short time. Where it takes you one year, it takes you one year, where it takes you five years, it takes you five years. On some issues, you might say: "look, no". Indeed, we do not intervene on everything, in the end. Because it is clear that in a company resources are limited (<i>Group CSR Manager</i>) - External</p>	<p>We always try to assure a healthy environment, with less risk of accidents and stuff like that. Nevertheless, a worker is a worker, if he works in a furnace at 50°, he works in a furnace at 50°. There is a steel mill, beyond the road, where a worker dies each year. Wages will be more or less like ours, it cannot be very different. [...] The work environment is much more dangerous, indeed they have heavy injuries. But then, for a worker working at that steel mill or for a worker working at our foundry [...] there won't be a huge difference among our factory and that steel mill as working conditions. Therefore it is useless – or better, not useless - but it</p>

			is difficult to transmit the sustainability message to a worker in that department, this is undeniable (CFO) – External
Then there is Eleonora [<i>Group CSR Manager</i>] that is very good at getting them all [<i>colleagues from different functions and hierarchical levels</i>] involved. On every issue, she is capable of immediately identifying who are the right persons who may, within each area, pursue it, and she really manages to spread the sustainability message to everyone. But it is a fact, that the pure industrial person - like for example who is in charge of equipment definition or drawing processes - he must be given some guidelines [...] He must be given some references - few but clear - on how to operate in a sustainable manner. And it is our responsibility to decline on him what sustainability is. By talking with him, by understanding what are his critical issues or requests and by translating these sustainability concepts and making them operational for him (<i>Environmental Specialist - HSE department</i>) – Internal	The main objective of this system [<i>HSE reporting system</i>] is to lead to the highest level of proactivity, substantially, in order not to wait until an event [<i>injury</i>] happens, but to prevent the event. And this is possible - in my opinion, but also according to Corradi [<i>General Manager</i>] - if the entire chain of command thinks in the same way. Thus, starting from Corradi till to the blue collar of the Final Assembly department, all we have to clearly understand this way of working, thus looking for the maximum level of proactivity [...], maximum awareness of the risks and dangers, in order to proactively mitigate all that can be mitigated, substantially. This is a bit the mission, essentially, of the HSE function (<i>HSE Manager</i>) – Internal	Years ago we were a monopoly, we had enormous financial resources, which of course was reflected in the fact that we could spend more for the environment, for human resources and so on. On the contrary, in the last few years, after privatization, the pressure to be less sustainable has been strong, from a point of view of the company. At present, I would say that we do what we can, in short (<i>CSR unit member, responsible for the relationships with social rating agencies</i>) - External	The main difficulty, in my opinion, was obtaining the involvement from the very base, from blue collars and union representatives. Indeed, we continue to maintain a quite hostile relationship with union representation, with blue collars but in particular with union representation, because the company is heavily unionized. Or at least, it is not heavily unionized, but - for the unionized part - it is unionized at the extreme, with a predominance of FIOM union leaders who continue to be very ideological. Therefore they consider the social responsibility discourse as much smoke and mirrors. [...] Surely, that dialogue

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			with the unions that we wanted to improve has not improved so much, in the end. And - I would say - this is perhaps the somewhat weaker part of the whole story <i>(Controller)</i> - External
<p>For example in Turkey, our Turkish colleagues are very advanced, with a lot of institutional relations, in order to improve the situation at a national level. Indeed, our Turkish colleagues have difficulties in implementing sustainability due to the country conditions. This situation is so real that they are actually supported by the national institutions. Yes, by the Chamber of Commerce, by the Global Compact Office in Istanbul, by a lot of things. But in Turkey there is a problem at the country level. And so, they rightly say: “and what the hell, I’ll have my problems, but you also help me to change the situation, because otherwise how can I do by myself, like rowing against the wind?” So in Turkey there is really a mobilization, say, a national mobilization which was activated by us, at the local level (<i>Group CSR Manager</i>) – Internal</p>	<p>These stimuli arrive from all hierarchical levels. It is a bit like an orchestra where everyone really plays the same music, each one with its own instrument, and if even the orchestra conductor really has this same mindset, then you really get results, in effect (<i>Controller</i>) - Internal</p>	<p>Social rating agencies have definitely played an important role in enhancing awareness - not so much individuals’ awareness - but top management’s awareness. In the sense that these ratings, like the Dow Jones or the FTSE ones, represent a measure of sustainability performance which is very visible to the external audience. [...] This highly visible signal is something that can actually make a pressure on management. [...] In the sense that the process was more or less this: given that a company’s top management, when making decisions, faces pressures of any kinds, sustainability analysts constitute an element of pressure, even if slight, on its</p>	

		decision-making. And then, well, they can somehow induce management to act to ensure that sustainability is implemented within the company (<i>CSR unit member, responsible for the relationships with social rating agencies</i>) – External	
Panel B: Cues for action (problem/opportunity orientation)			
Coy A	Coy B	Coy C	Coy D
Starting already from some years ago, we were able to form a clear and distinct perception of the value return, both in tangible and intangible terms, created precisely by the sustainable management of the company [...] And therefore sustainable management brings to the company both a tangible value - if we look at it in terms of increased sales of green products, for example, every year (but then many are the examples) - and an intangible value, in terms of risk reduction, for example, which is a critical issue if we think of supply chain management, rather than in terms of brand value, reputation, access to credit, license to operate if there are new markets to penetrate and so on and so forth. [...] As well as the value return in terms of respect of people within the company. And here we arrive to another key element that is engagement. These are	Nowadays obtaining certain certifications [<i>of HSE management systems</i>] and being qualified as companies that operate in this way also gives us benefits in terms of participation in contract bids. They are perhaps even customers who ask us Let's say it is a trend that is moving. But I also think we - as a company - try to interpret it not only as a matter of certification in the strict sense, i.e. by paying Bureau Veritas to come in and give us the certificate, but in relation with our processes of continuous improvement. Thus, we believe these things are actually of help to everyone, to all the people working here. [...] So, we are trying to create a virtuous circle with positive impacts on everything (<i>Manufacturing Director</i>) – Opportunity orientation	There are some initiatives that are truly remarkable. And of course these are the initiatives that translate into savings. Concerning electricity consumption, we are talking about 100 million a year, we're talking about hundreds of millions of euros, not 1 or 10. So, even a one percent reduction in energy consumption has an impact, in short. These are initiatives which have an economic return. This aspect is never overlooked or not considered. Because our stakeholders are those, you can also see in our sustainability report those who are stakeholders to our company. It's not that we forget the	The environmental management system is functional to improving our environmental performance, but improving our environmental performance - I repeat - must result eventually in an economic advantage, otherwise it means that we are not acting in the right direction. Social responsibility, clearly, lets a company engage in activities which, at the beginning, may be considered costs – such as processes' reorganization - rather than improvements. But in the

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<p>definitely elements of engagement. And engagement in a company, especially in times of crisis, is all (<i>Group CSR Manager</i>) – Opportunity orientation</p>		<p>shareholders, because otherwise I would forget about myself, I am a shareholder, thus it is not possible that I forget about myself (<i>Vendor Assessment & Process Governance Manager</i>) – 'Restricted' opportunity orientation</p>	<p>end, if we consider that - for example - more satisfied employees signify lower staff turnover and certainly a better quality of their work, then social responsibility activities always translate into an economic advantage for the company or - better - they must result in an economic advantage for the company. In the sense that greater efficiency of the overall company's operations means that the company works better at a lower cost (<i>HSE Manager</i>) - 'Restricted' opportunity orientation</p>
<p>We completely changed direction by introducing the Green Technology concept, which precisely aims at emphasizing all those performances that have an impact on the sustainability of products and therefore also of society [...] Indeed our products, even at the level of the business plan, are by now declined as Green Products. But we didn't focus</p>	<p>In our company's general product development process, for the last few years products, there is even a development platform aimed at recycling, in short at the lowest possible environmental impact; there are initiatives – maybe you have seen some ECO4 brochures, to reduce our product's consumption levels and so on and so</p>	<p>Tomorrow a press release will be issued pointing out the fact that we have launched our first line of products with the Green label. We have created a Green brand that will be given to product families that meet specific characteristics in terms of environmental impact, for</p>	

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<p>exclusively on the Green axis. Indeed, sustainability for us also means driving safely, there is also this safety aspect. So, we strived for the right balance between all the safety performances – by the way safety has to do with the social dimension, so it's one of the axes of sustainability. And, finally, we are looking for the technologies necessary for, well, lessening the impact on all other factors that underlie sustainability. So, we are working very hard in trying to identify new eco-friendly materials (<i>Project Planning Manager</i>) – Opportunity orientation</p>	<p>forth (<i>Manufacturing Director</i>) - Opportunity orientation</p>	<p>example reduced energy consumption in comparison with equivalent products of the same category, or use of easier to recycle materials, or reduced use of hazardous materials and so on. The first product is an ADSL modem, and from this on we will continue along these lines. This is another path we are trying to take (<i>CSR unit member, responsible for CSR planning</i>) – 'Restricted' opportunity orientation</p>	
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Panel C: Management aggressiveness (low/high)			
Coy A	Coy B	Coy C	Coy D
<p>Our actions derive from benchmarking, that we always do not against our peers but against best practices. It is perhaps for this reason that we got the worldwide sustainability leadership in our industry, because we do not go back to the peer, but to who ... If I have to look at diversity, I will look at L'Oreal. And I do not care if I'm better than my peer in the auto parts and tyre, because he does not care about diversity. Because in this way I do not grow. But in the same way, with respect to the management of the supply chain, obviously I will look at Ford, and so on</p>	<p>Our HSE management system should foster continuous improvement and thus go beyond legislative compliance. Simply complying with regulations is no longer sufficient, we must adopt stricter rules than what required by law if we really want to reach excellence levels. Where excellence, in the end, to us means coming to work and not hurt us. Do not hurt us and do not get sick, thus zero accidents and zero occupational diseases. This is the main objective (<i>HSE Manager</i>) – High</p>	<p>Sometimes we may compare ourselves with our peers. [...] Clearly, we don't like being second to anyone. But we also must reckon what are our possibilities. We try to set targets that are meaningful to us, where possible. Our point of view is: we thrust ourselves forward till where we believe we can do it. Sometimes even a small target means a step forward, an improvement. That maybe was obtained at the cost</p>	<p>Perhaps, with hindsight, we started [<i>taking an explicit commitment to CSR</i>] a bit too much in a hurry. Indeed, we started in 2001 from scratch, even though the company was already oriented - in its DNA – towards these thoughts. But we acquired huge visibility, we wanted to declare very explicitly and very strongly a series of commitments, which</p>

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<p>and so forth (<i>Group CSR Manager</i>) – High</p>		<p>of long discussions (<i>CSR unit member, responsible for CSR planning</i>) – Low</p>	<p>afterwards were hardly maintained. Thus, continuous improvement has become increasingly difficult (<i>Controller</i>) – Low</p>
<p>Our idea is to be leader in many aspects, or try to be, at least. [...] Even the very concept of green performance, which is the union of the performance with the environmental – say - it is an integration of these themes. It's not just green, so paying attention only to the consumption associated with the use of the tyre, which was the fashion, ok? But we add the performance, and so the care, the respect for our customers [...] We must always be a bit challenging, in brief (<i>Environmental Specialist - HSE department</i>) – High</p>	<p>Today the zero injuries target is a common target, by now, shared, we all are well aware about it. Up to 7-12 years ago, we did not even know how many injuries we had. Today, instead, we are at this kind of target we want to achieve (<i>Manufacturing Director</i>) – High</p>	<p>We [<i>the CSR unit staff</i>] are also limited in terms of number of people, being 8 in front of over 80,000 employees. Therefore it is obvious we cannot, every year, throw ourselves headlong into all of the various sustainability issues. It's clear that we give ourselves some priorities, we try to discuss them with our colleagues, we try to be realistic (<i>Group CSR Manager</i>) – Low</p>	<p>All this to say in short that the social responsibility discourse has never been well accepted internally, I do not mean in this office building, I do not mean at the executives' level, but especially in the factory... In the factory, partly due to objective difficulties, partly maybe due to the fact we have not invested enough, I do not know. In the factory, I think there would be still much to do, if we wanted to (<i>CFO</i>) – Low</p>
<p>Then the target may be 10%. And the Operations Manager says: “no, we have to be challenging, because otherwise, if we stay low, it is not a challenging goal and anyway we sit down a little bit, so let's put +5%”. This is what happened with respect to the water consumption reduction target, for example. We were more or less on -</p>	<p>Nowadays I think that, being already very good but not enough ... When you're so close to a so small target [<i>zero injuries target</i>], it is very easy to miss it by a large percentage. However, apart from the results, the atmosphere is what really matters (<i>Controller</i>) – High</p>	<p>Our targets are not particularly challenging. Also because, concerning accidents, we are now at a level that can be hardly improved, yes, it is difficult to improve. Because we have very few and very minor injuries. So, when you</p>	<p>We have a relatively low injury rate compared to industry benchmarks. Sure, our ambition would be [...] to get to an injury rate close to zero. It 'a very challenging goal but I think it's a goal that is</p>

<p>30%, and we said: “ok, -30%, by making these interventions, can be met” [...] And we said: “no, let’s set -35%, so we are even more challenging”. And then, of course, the targets derive from many things. I mean, you look at competitors who tell you -30% and then you say -35%. There's this game, no, but it’s useful (<i>Environmental Specialist - HSE department</i>) – High</p>		<p>get to certain levels, the improvement is ... I mean, zero risk, zero accidents, I wish it were possible. We would be happy enough if fatal accidents were zero (<i>HSE Manager</i>) – Low</p>	<p>right to pursue. [...] We are approaching this goal just now and we want to develop it this year in terms of a strong signal to be given to workers. It’s clear that we cannot reasonably think of reaching this target the next year. But trying to strengthen the individual worker’s awareness on the fact that the most important thing he must firstly take care of is his own– and his colleagues’ – safety, this is definitely an activity we want to focus on this year (<i>HSE Manager</i>) – Low</p>
<p>We have now been walking that [<i>sustainability</i>] road for several years. And we are doing it, I think, extremely successfully. I think Dr Pessina [<i>Group CSR Manager</i>] showed you the sustainability indexes identifying us as industry leader (<i>Project Planning Manager</i>) – High</p>		<p>It is not possible to reduce energy consumption by 40% every year; I wish we could always do 40% less, but it is difficult (<i>Vendor Assessment & Process Governance Manager</i>) - Low</p>	

Appendix D. Exemplary quotes for CRS-related MCS

Panel A: Result controls			
Coy A	Coy B	Coy C	Coy D
<p>Sustainability is part of the strategic plan. So we set targets not only in terms of revenues or financial results. But we set targets also in terms of environmental sustainability, like for example a certain reduction of carbon dioxide emissions, rather than energy saving energy, and so on. And targets for social sustainability, like an appropriate use of the supply chain rather than equal opportunities between men and women. Thus, there are a number of sustainability targets within the strategic plan (<i>Group Risk Officer</i>)</p>	<p>There are some rules [<i>imposed by the parent company concerning target setting</i>]. Thankfully, there are not too many impositions. Nowadays objectives are highly shared. That is, how the target setting process works, for example regarding HSE. Let's say that there is the group level but then there are the divisions. The division has a freedom, within a certain range, for setting up goals. Thus we meet at the division level - the various subsidiaries meet [...] within the division – and we say: “well, this year we have done this, what do we do next year?” And we define the targets, which are so somehow shared, before being imposed. That is, once we have settled them, they become our goals and we all work to achieve them (<i>General Manager</i>)</p>	<p>We [CSR unit's members] are not involved [in the strategic planning process], or better, it is not completely accurate to say that we are not involved. In the sense that we try to influence, let's put it this way, to be very transparent and honest, we try to influence what is then transferred into the business plan, trying - of course thanks to our knowledge of colleagues and process owners - to raise their awareness on the fact that, perhaps, in the presence of two options that have the same economic impact ... Because you understand that what matters at the end is the economic impact. But sometimes, maybe, we succeed in orienting them on the more sustainable option. It's a discourse that is not so obvious, so palpable, so formalized, but it is an</p>	<p>Targets do not exist yet for many of these [CSR] KPIs. We do not set targets for any of these indicators, almost. Only with respect to some environmental and quality indicators there are some targets, for many others there are none, because we have not entered into this logic, yet. Probably we'll get a little at a time, but we have not matured enough this logic, yet (<i>Controller</i>)</p>

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		activity in which we also try to engage. In some cases we also succeed, with our influence, in obtaining something positive (<i>CSR unit member, responsible for CSR planning</i>)	
<p>Obviously, when you say that you have a goal of reducing CO2 by 15% by 2015, rather than of -35% of water withdrawal by 2015, it is obvious that these activities must be implemented by, and with accountability of, the competent function. Then, the HSE Director and Operations Director assume these responsibilities, because they have to meet those plans. [...] And then it's up to them to decline, at the group level - the group is made up of individual affiliates - in order to meet the final goal, consolidated. Because that -35% is a consolidated figure, at the group level. How do you do it? You do it also through the Management Plans. Indeed, every year our company prepares its Management Plans, in autumn, for the following year. They are the budgets, and we call them Management Plans. These Management Plans will have guidelines. There is the HSE Management Plan that will take into his pro-rata. The HR Management</p>	<p>HSE target setting starts in September and finishes at the end of November with the closing of the budget. That is, H&S targets are paired with the budget, because all of the corporate objectives are strictly linked with the budget because they very often have an economic impact (<i>General Manager</i>)</p>	<p>Well, the sustainability plan, let's say, should not be underestimated and should not be overestimated. In the sense that there we adopt a very realistic and very sustainable approach. In the sense that there is a strong involvement of the internal lines. So there is [...] a constant dialogue with the inner lines that is done during the year, at various times. Therefore we always have a clear understanding of where we're going, the things we can do, the things we cannot do and where we can "push" the accelerator [...] That is, it is clear that when we prepare the sustainability report, in January-February, the budgeting process is almost completed, so they know the resources they can rely on. So</p>	<p>No, well, the aim to reduce our environmental impact is included into the social report, so it is included amongst our improvement objectives. But then this aim is not reflected into the business plan or into the budget, no (<i>CFO</i>)</p>

<p>Plan of HR, which must implement certain aspects with respect to diversity, will have its pro-rata. The Sustainability Management Plan brings together all these elements, to put them together and see if sustainability globally holds. Because there is also the Sustainability Management Plan. And indeed, when I send the guidelines, in autumn, on how to compile the Sustainability Management Plan, I say: “do not double count costs. You have the HSE column, put there HSE elements that are already part of the HSE Management Plan – and so you specify if they already belong to it- and that impact on the HSE sustainability of your affiliate. In addition, they will insert pure sustainability expenses, if there are elements that do not fall under other directions. But it's unlikely, because what it is done inside the company is always done through the various extant directions, under the coordination of the Sustainability direction (<i>Group CSR Manager</i>)</p>		<p>if they tell me: “look, for this year we are happy with the CHP we already have”, it is clear that I do not double the goal, right? So there is a process of negotiation and dialogue with the functions to understand where is the right balance between an ambitious target and a target we can reach based on the resources that the company has allocated (<i>Group CSR Manager</i>)</p>	
<p>[<i>Sustainability indicators are also</i>] part of the so-called Master Plans, which are the formats that the President, the Top Management has adopted to monthly monitoring the trends in those indicators considered strategic,</p>	<p>Another decision-making tool is represented by the Quality and HSE Management Review [...] That is, Quality and HSE functions put together all the results achieved during the preceding year and the current year’s</p>	<p>[<i>The 200 KPIs collected quarterly</i>] are analyzed, in short. We make some analyses, we monitor the trend, we maybe call our colleagues if we discover</p>	<p>Yes, concerning planning we have to work a bit more, we must work harder. But something is already there, we wanted to start bringing some indicators to the Board</p>

<p>fundamental and determining the achievement of the three-year strategic targets. With respect to sustainability we have included the following ... We should have put a lot, but it is not possible to send him twenty sustainability indicators, that is, every month, you know ... And then we included: CO2, energy, water, diversity ... it's been a win, I did it, it's been tough, sending to the top management a monthly indicator on diversity, trust me, it is not easy (<i>Group CSR Manager</i>)</p>	<p>targets and – usually in March and in the second half of the year- a meeting is held with all first-level managers to discuss all the targets that Quality and HSE must reach according to site-level decisions, and also business unit-level and group-level decisions. This is mainly an occasion - for Quality and HSE functions – for sharing all targets (those that have been already met and those that still have to be met) with all first-level managers, thus with all company's functions, from HR to Manufacturing, Engineering, Project Management, Purchasing and so on and so forth. They all attend this meeting and they all receive a copy of this Quality and HSE Management Review (HSE Manager)</p>	<p>anomalous trends. That is, a usual data analysis, in short. For example, we monitor the electricity consumption, quarterly, and if a quarter is, say, 600 and the following quarter is 400, maybe there is something wrong. We do what is called an analytical review. Then clearly the measurement is so complex that it is not that we go back to the source. But we do some reasoning about data. But of this type, analyzing trends and discussing with colleagues any anomalous trends (<i>Group CSR Manager</i>)</p>	<p>together with quarterly reports. Then we got a little stopped, partly due to the crisis that hit the economy, and so we got a little stopped. But this was an issue that was raised by the Board of Directors, the examination of some indicators in order to have a monitoring from this point of view (<i>CFO</i>)</p>
	<p>We have this PMP process, performance management process, which – simply put - consists in setting the goals of each individual person, in following them – there is a meeting twice a year – then at the end of the year the process is closed by a final assessment, say. Well, this process is strongly linked with these objectives. For example, concerning safety, almost everyone here in this company has a safety target. Even at the level of workers. It has been decided,</p>	<p>When you are able to respect what Sustainability said, you communicate it, trivially. In contrast, when it is not possible to modify the budget or that action is not feasible, this is still communicated to Group Sustainability, which however has no levers, possibly, to increase the budget or to diversify investments in other areas, it does not act directly (<i>HSE</i>)</p>	<p>We've always moved more at the middle management level, although based on the stimulus from above. It's clear that we have also tried to feed a bit from the bottom upwards. But it is useless providing information or collecting data, setting up systems, if these things are not strongly perceived as useful elements for decision making and strategic</p>

	strategically, that safety is a parameter over which everyone must be evaluated. It's not that if you stay closed in an office you can overlook safety (<i>General Manager</i>)	<i>Manager</i>)	planning. Indeed, decisions and strategies for sustainability issues are taken and are strongly supported by the top management team even in the absence of a set of structural indicators that systematically are reported. Because there is a vision in this sense and because - after all - the size of the group allows this even in the absence of a well structured internal reporting system (<i>Controller</i>)
Panel B: Action controls			
Coy A	Coy B	Coy C	Coy D
Well, you have these unwritten rules ... Yes, written in slides, coming from the training that we do to all buyers. And which, among other things now, in addition to the slides that everyone has, we would like to collect in a small manual for the sustainable management of the supply chain. Indeed, manuals of this kind, operational, so not fantasies, philosophies, etc ... there is none around. Even Ford told me: "Eleonora [<i>the Group CSR Manager</i>], if you write it, I'll copy it". Because it is very difficult. I went to ask them if they had, and they told me: "The day you succeed	There are absolutely no budget problems for safety interventions. Indeed, the Safety Relevant classification, both at the site and at the project level, makes the standard approval procedure being disregarded. If workers identify something which can impact their safety or the product's safety, after a minimal evaluation by Technical Engineering, if they say it's true ... If Engineering says is true, the intervention is made, regardless of budget problems. To the extreme, the margin is eroded, if there are no more money. For things like these, our	The Sustainability Assessment Sheet should be correctly understood. In the sense that, for investments over a certain threshold, the project manager fills out this form giving an assessment of the investment in terms of sustainability on some areas of particular interest. The assessment is a qualitative evaluation, which should not be underestimated nor overestimated. It's not that now, if an investment has a	Well, initially, we proceed [<i>in the suppliers' selection process</i>] based on our company's needs, of its departments and production processes. We begin with visiting suppliers, obviously, we make an audit during which we assess several aspects. These vary from quality certifications to environmental ones and, eventually, also a sharing – because rarely we find suppliers whit the SA8000

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<p>in doing it, I'll copy it". We would really put inside it ... Apart from bringing together all the material, right? It would become an operating manual for the manager of sustainability in the supply chain, which is the buyer, in the end, together with the sustainability manager. But we would like to put inside it all the documentation we have. Also, we would like to put inside it an area of identification of suppliers to be audited. Just an area of risk management, even of risk mapping, with indications that our colleague Risk Officer will give us. It should come out pretty cool, we must do it within the year, hopefully, it is also in the objectives of our sustainability plan (<i>Group CSR Manager</i>)</p>	<p>procedures require us to intervene. The intervention does not need to be approved by the Project Manager or by the Controller (<i>Manufacturing Director</i>)</p>	<p>payback time of 10 years, to give an example, it is approved because it is very sustainable, honestly. It is clear that, in the evaluation process, it is important to draw attention on those issues. It's important to raise the level of sensitivity. It is not a quantitative tool. And like all qualitative tools ... While WACC can be quantified, here one says: "the impact on sustainability is very good". And what does it mean, in what it can be translated this very good? So it's something that we do, it could be done better, it could be done worse. I do not know, maybe we will decide to empower it or to eliminate it, I do not know, we'll see. At the moment the instrument is there. But for the purposes of the investment decision it has, however, a limited scope. I cannot say that it weighs zero, however it does not even weigh 100, honestly. In the sense that if, I repeat, the investment is out of standard</p>	<p>certification – but at least a sharing of SA8000 principles [...] Therefore it is a checklist that we compile together with the supplier. And in addition to compiling the checklist, we also collect some documental evidence (Purchasing Manager)</p>
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		for economic and financial parameters, the fact that it is very sustainable does not make the investment approved (<i>Group CSR Manager</i>)	
Panel C: Cultural controls			
Coy A	Coy B	Coy C	Coy D
This Sustainability Steering Committee, in a strategic perspective, consists of those functions that, within the company, represent internal and external stakeholders. Why? Because a company's sustainability performance depends on its multi-stakeholder approach. The multi-stakeholder approach is not expected to match exactly, perfectly, the highest aspirations of each stakeholder, because it is impossible. It's a balance. It's striving to balance the satisfaction of expectations among the various stakeholders. So, having said that, it is clear that, if a company exists, it has to do with many stakeholders. And, to deal with them, it has specific structures. [...] All of these [<i>these structures' directors</i>] participate in this Steering because when you have to make plans, the plans must be sustainable. And automatically, since each of these directors responds to such external expectations, this is a very	The aim of this monthly meeting is a bit that of a HSE Steering Committee. In other words, through this meeting all the macro problems should be raised, in order to make decisions at the top management level on how to solve these problems. So it's not a meeting to decide how to handle "HSE daily life" but to solve, if they exist, macro problems, problems emerged during the previous month (<i>HSE Manager</i>)	The Internal Control and Corporate Governance Committee is a committee internal to the Board, made up of mostly independent Board members, which, among its responsibilities, since the end of 2008 also has the highest oversight on sustainability. [...] This committee, being very high level, because it is a committee of the board, clearly has no practical, operational tasks on sustainability. It has mainly a direction and control function. [...] So surely there is a constructive and dialectical contribute from the Committee. So it's not a simple audition, in the classic sense. There is an interaction of the Committee on these issues. Then maybe	N.A.

Tesi di dottorato "Exploring the design and functioning of management control systems for CSR: three essays"

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<p>strategic way to come up with a plan that holds, that is sustainable in itself, because you have to reach true sustainability, but if you have plans that are unsustainable within functions, you are over (<i>Group CSR Manager</i>)</p>		<p>sometimes more, sometimes less, this is clear. But, surely, it is an important link (<i>Group CSR Manager</i>)</p>	
<p>That is, Sustainability coordinates. Then there are issues maybe more related to the environment, that is to the HSE function ... I mean, there's a collaboration, not a sharp division. That is, when it comes to the environment, with Eleonora [<i>Group CSR Manager</i>] and Giorgio Restori, who is the collaborator of Eleonora, we discuss, interact, there is a common line. Then, if something is said by her, by me or by my boss rather than by Mario Apollonio, which is the energy manager, it is the same thing. We are trying to create a very synchronized team (<i>Environmental Specialist - HSE department</i>)</p>	<p>The HSE management system is directly handled by me, together with Mirco Pisacane, but with the help of everyone, basically. The goal, again in terms of enhancing proactivity, is that we define the system's guidelines and verify their correct application, in order to ensure that all people involved then in fact apply the content of these procedures, substantially (<i>HSE Manager</i>)</p>	<p>Our continuous commitment to increase awareness of the other business areas, of our process owners (who by now see us as smoke and mirrors because we are always there to ask for information, to admonish, someone calls us "our green consciousness" when we talk about the environment, or things like that) is so that, somehow, sustainability implications are taken into considerations when developing projects (<i>CSR unit member, responsible for CSR planning</i>)</p>	
<p>There are people in Coy A working for Sustainability, by now. That is. Every moment, and SA8000 audits, and the purchasing man, and the industrial relations man, whatever happens they call me and say: "here happens so, so and so, I am afraid that ..." But it is healthy, positive, because all this stuff</p>	<p>When we, for example, set a layout, we always give and receive a feedback from our HSE office on each production set up activity we do. That is, every change in the layout is reviewed together with an HSE expert deciding whether what we are doing is compliant with standards and our procedures</p>	<p>They [<i>CSR unit's members</i>] are big proponents. Indeed, they have the dashboard to understand what the external demands are, arising precisely from various investment funds, from various surveys that reach them directly.</p>	

<p>here is awareness, it's all culture. Then it carries the DNA of the company (<i>Group CSR Manager</i>)</p>	<p>(<i>Manufacturing Director</i>)</p>	<p>Therefore they guide us a little in the identification, in the choice of those that could represent better targeted objectives to be undertaken. So they are proponents (<i>HSE Manager</i>)</p>	
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Determinants and performance effects of Environmental Performance Measurement Systems

*Irene Eleonora Lisi*⁵²

Abstract

This study examines the environmental performance measurement systems adopted by companies to manage their operations' impact on the natural environment, a topic over which public scrutiny and pressures are ever increasing yet empirical evidence is altogether limited. In particular, the determinants and performance effects of such systems are both investigated. A theoretical model is proposed to explain how the three main drivers of corporate environmentalism - i.e. expected competitive advantage, stakeholders' concern and top management environmental commitment - influence the use of environmental performance measures for internal decision-making and control, and how such use impacts companies' environmental and economic performance. Data collected from a survey of 76 managers are used to test the model. Results demonstrate the relevance of the identified antecedent variables in explaining the extent to which environmental performance measures are used for decision-making and control. This variable, in turn, is found to be positively associated with environmental performance and, through this, with economic performance.

1. Introduction

Over the last decades, organizations in every sector have been confronted with increasing pressures to control and improve the impacts of their

⁵² PhD Candidate in Business Administration and Management, Università Bocconi, Accounting Department. E-mail: irene.lisi@phd.unibocconi.it.

operations *vis-à-vis* the natural environment (Sharma, and Vredenburg 1998; Ferreira et al. 2010; Perego et al. 2009; Burnett, and Hansen 2008). National and international legislations have been made more stringent, while the public scrutiny on the environmental conduct of the business has intensified (Bansal, and Roth 2000; Sharma, and Henriques 2005). In response to these ever escalating pressures, over the last 20 years several thousand companies have started to disclose information about their environmental performance and the number of published Corporate Social Responsibility (CSR)⁵³, Sustainability⁵⁴ or environmental reports has rapidly grown (KPMG 2011). In addition, companies are increasingly adopting voluntary environmental management systems for handling the environmental impacts of their processes, products and services (Perego et al. 2009; Albeda Perez, Correa Ruiz, and Carrasco Fenech 2007; Adams, and Larrinaga-Gonzalez 2007; Buysse, and Verbeke 2003).

Accounting research on the topic has also flourished (Durden 2008). To date, this literature has extensively explored issues relating to external environmental disclosures and in particular to the determinants of such voluntary reporting activities (Gray et al. 1995; Adams 2002; Owen 2008). Another stream of research in environmental accounting concerns the relationships among environmental disclosure, environmental performance, and economic performance (Margolis et al. 2003; Al-Tuwaijri, Christensen,

⁵³ “Corporate Social Responsibility (CSR) is a concept whereby companies integrate social and environmental concerns in their business operations and in their interaction with their stakeholders on a voluntary basis. It is about enterprises deciding to go beyond minimum legal requirements...in order to address societal needs” (European Commission 2006a).

⁵⁴ The sustainability concept came to particular prominence with the Brundtland Report of 1987 which defined it as “development that meets the needs of the present without compromising the ability of future generations to meet their own needs” (World Commission on Environment and Development 1987).

and Hughes II 2004), with a particular emphasis being paid to the environmental performance-environmental disclosure pair (Clarkson et al. 2008).

Only more recently academic research started to consider also the internal aspects of environmental accounting. In particular, the area of Environmental Management Accounting (EMA) - defined as “the management of environmental and economic performance through the development of appropriate environment-related accounting systems and practices” (IFAC 2005) - has been introduced. EMA systems are expected to play an important role in helping firms better facing their environmental responsibilities (Henri et al. 2010; Frost et al. 2000; Bartolomeo et al. 2000). As Sinclair-Desgagné et al. (1997) notice, “increased environmental awareness on the part of shareholders and corporate board members will not change the firm’s environmental record in a significant and durable way unless it is translated into concrete amendments of the existing managerial control system” (page 337). EMA is also expected to help firms work to attain those potential economic benefits which have been said to derive from environmental strategies and initiatives, such as cost reductions through ecological efficiencies, the development of green markets and first-mover advantage, better community relations, and improved image (Ferreira et al. 2010; Henri et al. 2010; Perego et al. 2009).

As an important part of EMA, environmental performance measurement systems refer to the extent to which Environmental Performance Measures (EPMs)⁵⁵ are used by managers for various purposes (Henri et al. 2010). In

⁵⁵ An exemplary list of EPMs is provided by the GRI Sustainability Reporting Guidelines, the most widely adopted standard for social and environmental reporting (Global Reporting Initiative). In particular, GRI EPMs cover performance related to

particular, this paper explores the extent to which EPMs are used within an organization for both decision-making and control purposes, as an initial attempt to discriminate performance measurement systems that extensively rely upon environmental metrics from situations in which the role played by these indicators appears to be negligible⁵⁶.

Environmental performance measurement systems can be expected to play a particularly relevant role in helping organizations attaining the above mentioned potential environmental and financial benefits. Indeed, following the definition of performance measurement systems from Anthony and Govindarajan (1998), environmental performance measurement systems serve three main, fundamental tasks: formulation and communication of environmental objectives, monitoring environmental performance through measurement and motivating employees to achieve environmental goals.

However, research on environmental performance measurement systems is still at its infancy, as it is research on EMA more in general. As noticed by Henri et al. (2010), most of this literature is either conceptual or descriptive and often based on a limited number of case studies. While this literature contributed to the further development of tools (for a review, cf. Bonacchi et al. 2007), there is now need for large-scale analyses empirically testing whether the expected or theoretically derived relationships are really present, in order to assist businesses in relation to resource allocation and decision-making (Ferreira et al. 2010).

inputs (e.g., materials, energy, water), outputs (e.g., emissions, effluents, waste), biodiversity, environmental compliance, and other relevant information such as environmental expenditure and the impacts of products and services.

⁵⁶ In so doing, this paper also answers to Ittner and Larcker (2001)'s call for studies investigating a broad set of measurement system uses. For a discussion of the relationships between the two different purposes (i.e. decision-making and control) of EPMs use, refer to section 3.2.1.

Starting from these premises, the objective of this paper is to develop and test a conceptual framework on the determinants and performance effects of environmental performance measurement systems. In particular, the research questions addressed by this study are the following:

- to what extent are EPMs used by companies for decision-making and control?
- what are the determinants of EPMs use?
- what are the performance effects of EPMs use?

Hypotheses regarding determinants and performance effects of environmental performance measurement systems were derived based on a broad review of different streams of literature relevant to the topic under investigation. Specifically, from a review of environmental management literature⁵⁷ and CSR literature more in general, three main drivers emerged as the most influential motivations behind corporate environmentalism (Banerjee et al. 2003): expected competitive advantage (i.e. the 'business case' rationale), stakeholders' concern and top management environmental commitment. Therefore, these motivations are identified as the most likely determinants of EPMs use. Concerning the performance effects of environmental performance measurement systems, the theoretical framework proposes that EPMs use positively influences companies' environmental and economic performance, based on recent findings from EMA research (Henri et al. 2010). Therefore, this study follows the "principles, processes, performance" logic suggested by Wood (1991, page 693) as a way to

⁵⁷ The purpose of environmental management is to develop, implement, manage, coordinate and monitor corporate activities to minimize the negative environmental impact of the firm's products throughout their life cycle (Klassen et al. 1999; Melnyk, Sroufe, and Cantalone 2003). EMA is one component of environmental management (Henri et al. 2010).

examine the effects of firms' motivations and attitudes towards corporate environmentalism on EPMS use and, through this, on corporate performance. Data collected from a survey of Italian environmental or CSR managers are used to empirically test the proposed model. The survey was administered under the sponsorship of SDA Bocconi School of Management and of the Italian branches of two of the world's leading bodies in the field of management systems certification services - Bureau Veritas and DNV Business Assurance.

The empirical results presented are based on Partial Least Squares (PLS) analysis (Chin et al. 1999; Chin 1998) of the 76 (17.2%) usable questionnaires returned.

Overall, the results suggest the model has good predictability, with 5 out of 6 hypothesized paths statistically significant at the 0.05 level or better. Concerning the determinants of environmental performance measurement systems, the results show that, as hypothesized, expected competitive advantage is significantly associated with EPMS use. This result confirms the idea that the 'business case' for corporate environmentalism is the most influential motivation behind corporate adoption of environmental initiatives and strategies (Porter et al. 2006; Plaza-Úbeda et al. 2009). Similarly, top management environmental commitment is also significantly associated with the use of EPMS for decision-making and control, in support of those claims emphasizing the paramount importance of a strong and committed leadership in bringing about social and environmental improvements (Hemingway et al. 2004; Agle et al. 1999). Finally, a positive relationship between stakeholders' concern and EPMS use is also supported by the data, even if the strength of this link appears lower as compared to the other two motivations. This result contrasts with the 'greenwashing' argument (Laufer 2003) according to

which external pressures concerning the natural environment are mainly associated with legitimizing strategies aimed at restoring or enhancing corporate image – for example through external environmental disclosures - but without any real effect on companies' business operations (Larrinaga-Gonzalez et al. 2001; O'Dwyer 2003, 2005). Coming to the performance effects of EPMs use, the results show that, as expected, the use of EPMs for decision-making and control is significantly associated with environmental performance and, through this, with economic performance. This finding confirms the important role played by environmental performance measurement and control systems in helping managers improving their companies' environmental footprint (Judge et al. 1998; Klassen et al. 1999) and, indirectly, also the bottom line (Henri et al. 2010).

This study contributes to literature in several ways. Firstly, it contributes to the emerging field of EMA by advancing our – up to now particularly limited - understanding of one important component of EMA systems, namely EPMs use. In particular, the study is among the first to investigate the motivations behind corporate adoption of environmental performance measurement systems. In so doing, it also contributes to social and environmental accounting literature more in general by shifting the focus of analysis from external reporting to internal decision-making and control, thus answering to calls for more management accounting research in the area (Owen 2008; Gray 2002). In addition, by showing that there is a positive relationship among a company's environmental performance and its bottom line, this investigation contributes to the 'ecoefficiency' debate in environmental management literature (King et al. 2002; Porter et al. 1995a; Porter 1991; Porter et al. 1995b) and more generally to that vast stream of studies in CSR literature concerning the relationship between corporate social performance

and economic performance (Margolis et al. 2003; Orlitzky et al. 2003). Finally, by including in the model also two criterion variables like environmental and economic performance, this study contributes also to management accounting research in general, in which the so-called selection/congruence models (Luft et al. 2003; Chenhall 2003) are generally based on the assumption that a proper fit among contextual variables and well designed measurement and control systems enhances firms' performance but then this assumption is often not explicitly tested (Gerdin 2005; Luft et al. 2003).

The remainder of the paper is organized as follows. The next section develops the theoretical model, including presentation of hypotheses. Section 3 clarifies the research method, including sample selection and variable measurement. This is followed by presentation of the results. The final section discusses the results and concludes the paper by raising implications for theory and practice, acknowledging limitations of the study, and offering directions for further research.

2. Theoretical development and hypotheses formulation

2.1 Environmental and CSR management literature: the determinants of environmental strategies

During the last two decades, management scholars have produced an impressive volume of research trying to understand the factors that influence social and environmental strategies in a firm. The literature has outlined three main drivers to the adoption of such strategies. A major research stream in the field argues that firms adopt social and environmental agendas because they are economically beneficial to the firm. From this instrumental perspective (Donaldson et al. 1995), management's concern for maximizing shareholder welfare is what drives their agenda to adopt CSR initiatives.

Even if economic gains can be ambiguous, long term and difficult to assess (McWilliams et al. 2001), pursuing social and environmental strategies may generate intangible benefits that improve the firm's ability to attract resources, enhance reputational trust, and eventually build competitive advantage (Porter et al. 2006).

A second stream of research emphasizes the role of exogenous drivers as the main influence to embark in social and environmental initiatives. The drivers include institutional forces (Campbell 2007; Hoffman 1999; Jennings et al. 1995) and stakeholder pressures (Buysse et al. 2003; Sharma et al. 2005) to which firms respond in order to gain social legitimacy (Scott 1995). Under this view, firms react to unavoidable societal influences inducing the organization to positively contribute to the community.

Finally, a third stream of research explains the adoption of social and environmental initiatives for normative reasons, that is, "because it is the right thing to do" (Harrison, Bosse, and Phillips 2010). At the core of this perspective is the idea that social and environmental actions are deeply grounded in moral values and are reflection of the top management's ethical stance and a genuine attitude towards social ills.

A few studies in environmental strategic management and more generally CSR literature (Maignan, and Ralston 2002; Bansal et al. 2000; Banerjee et al. 2003; Weaver et al. 1999; Paulraj 2009; Fraj-Andrés, Martínez-Salinas, and Matute-Vallejo 2009) have also developed quite comprehensive frameworks that in a way seem to summarize the above mentioned streams of research. Indeed, the main determinants of corporate social and/or environmental orientations identified in such models can be generally ascribed to three groups of factors: competitiveness considerations, stakeholders/institutional pressures and managers' interests and values. For

example, Bansal and Roth (2000), through analytic induction, develop a comprehensive model grounded in management's explanations proposing three conceptually distinct motivations for "greening the firm": - competitiveness, i.e. the potential for ecological responsiveness to improve long-term profitability; - legitimation, i.e. the desire of a firm to improve the appropriateness of its actions by complying with institutional regulations, norms, values and beliefs concerning the natural environment; and - environmental responsibility, i.e. the concern that a firm has for its social obligations and values. Similarly, Banerjee and colleagues (2003) propose public concern, competitive advantage and top management commitment to the natural environment as important antecedents to corporate environmentalism, defined as "the recognition of the importance of environmental issues facing the firm and the integration of those issues into the firm's strategic plans" (page 106); empirical results from their survey study conducted on more than 240 American firms confirm these expectations.

Due to its conceptual clarity and comprehensiveness, this study adopts Banerjee et al. (2003)'s framework as basis for the identification of the most influential motivations behind corporate adoption of environmental performance measurement systems. As a result, the independent variables explaining the use of EPMs in my model are:

- expected competitive advantage, defined as the degree to which environmental initiatives and strategies are perceived to represent a source of competitive advantage and to improve long-term profitability;
- stakeholders' concern, defined as the perceived degree of concern a company's stakeholders demonstrate toward the natural environment;

- top management environmental commitment, defined as the commitment of a company's top management team towards the environmental agenda.

This focus on managerial motivations, beliefs and interests, in addition to being coherent with the above mentioned models, is also consistent with the claims of several scholars holding that, when assessing a firm's decision-making with respect to social and/or environmental issues, it is particularly important to account for managerial individual perceptions (Plaza-Úbeda et al. 2009; Buysse et al. 2003; Sharma 2000)⁵⁸.

2.2 Expected competitive advantage and use of EPMS

The search of competitive advantage, or the "business case" rationale for CSR (Wood 2010; Porter et al. 2006), has been repeatedly recognized as fundamental motivation behind corporate adoption of environmental strategies and initiatives (Plaza-Úbeda et al. 2009; Bansal et al. 2000; Banerjee et al. 2003; Paulraj 2009; Fraj-Andrés et al. 2009). Typical justifications of a business case for corporate environmentalism include cost reductions and operating efficiencies, better risk management, competitive advantage through product differentiation and/or premium pricing capability, reducing the threat of burdensome regulation, opening new markets, reducing 'campaign risk' (being targeted by external activist groups) and developing

⁵⁸ Indeed, the CSR arena is a particularly complex domain, in which institutional pressures drive many corporate responses (Campbell 2007) but a clear understanding of the financial effects of such responses is still missing. Indeed, in presence of competing views and contrasting empirical results concerning the relationship of corporate social and environmental performance and economic performance (Orlitzky et al. 2003; Burnett et al. 2008; Al-Tuwaijri et al. 2004; Margolis et al. 2003), managers are left with little guidance to estimate the financial effects of their environmental strategies. In such a setting, there is inevitably still a large room for managerial interpretations (Sharma 2000; Jennings et al. 1995).

technologies that yield competitive advantage (Wood 2010). Empirical findings confirm that companies adhering to the win-win view of corporate environmentalism tend to adopt more “proactive” environmental strategies, i.e. voluntary and innovative approaches to improving their environmental performance (Aragòn-Correa, and Rubio-Lòpez 2007; Aragón-Correa 1998). For example, Sharma (2000) hypothesizes and empirically verifies that companies which associate environmental issues with gains considerations are more likely to exhibit a voluntary environmental strategy in comparison with companies perceiving environmental issues as associated with loss considerations.

By drawing on contingency-based arguments in management accounting research, it can be argued that this competitive advantage rationale provides a strong incentive for managers to invest in EMA systems that “isolate and quantify the costs, benefits, and operational outcomes of proactive environmental management” (Burnett et al. 2008, page 552). Indeed, the conventional, contingency-based approach in management accounting research assumes that management control systems are adopted to assist managers achieve some desired organizational outcomes (Chenhall 2003; Chapman 1997; Simons 2000) and, as such, need to be tailored explicitly to support the strategy of the business (Langfield-Smith 2007; Ittner et al. 1997). This need for an alignment of management control systems with organizations’ strategic direction is especially advocated with respect to firms’ performance measurement systems (Kaplan, and Norton 2006; Simons 2000; Ittner, Larcker, and Randall 2003). Performance measurement systems, indeed, are key foundations of the management control system (Otley 1999); through them the main tasks traditionally assigned to management control systems, i.e. formulation and communication of objectives, monitoring

performance through measurement and motivating employees to achieve company goals (Anthony et al. 1998), can be pursued. In the same vein, Simons (2000, page 16) affirms that “business strategy is at the root of effective performance measurement and control for two reasons. First, performance measurement and control systems provide the analytic discipline and communication channels to formalize business strategy and ensure that strategic goals are communicated through the business. Second, performance measurement and control systems are the primary vehicle to monitor the implementation of these strategies”. By applying such arguments from performance measurement literature to the environmental context in particular, it seems then reasonable to expect environmental performance measurement systems play a crucial role in ensuring that the implementation of an environmental strategy is effectively executed. Consistently with these claims, recent findings from Perego et al. (2009) confirm that firms with a more proactive environmental strategy rely more on performance measurement systems that systematically report EPMs.

Based on the above mentioned arguments, it can be expected that the more companies adhere to the business case rationale for corporate environmentalism, the more they will rely on EPMs for decision-making and control, in order to make sure that environmental strategies are effectively communicated and implemented through the business and that, therefore, the economic benefits expected to derive from these environmental initiatives actually materialize.

This leads to the following hypothesis:

H1: *There is a positive relationship between expected competitive advantage and the use of EPMs for decision-making and control.*

2.3 Stakeholders' concern and use of EPMS

Stakeholders' concern is a second, influential motivation for corporate adoption of environmental strategies and initiatives, as recognized by a well-established stream of research in environmental management literature (Buysse et al. 2003; Banerjee et al. 2003; Bansal et al. 2000; Fraj-Andrés et al. 2009; Sharma et al. 2005). The stakeholder literature argues that stakeholders who are important, primary (Freeman 1984), or considered salient by managers (Agle et al. 1999) influence organizational strategies. This theoretical perspective, in addition to being influential to the domain of social and environmental accounting research (Chen et al. 2010; Gray et al. 1995), has been widely applied to the study of corporate environmentalism because it helps explain why firms will voluntarily adopt environmental protection initiatives that are not required by law (Plaza-Úbeda et al. 2009). Indeed, managers are under considerable pressures from their key stakeholders (shareholders, employees, customers, suppliers, governments, local communities and environmental interest groups) to clean up their act (Henriques, and Sadorsky 1999; Bansal et al. 2000; Buysse et al. 2003). Therefore, the inclusion of environmental issues into corporate strategies and decision-making beyond what is required by government regulation can be viewed as a means to improve a company's alignment with the growing environmental concerns and expectations of its stakeholders. Consistently with these arguments, Henriques and Sadorsky (1999) show that managerial perceptions of the importance of stakeholder pressures are associated with a more proactive stance toward environmental commitment by Canadian firms. In the same vein Buysse et al. (2003), using survey data from Belgian firms, find that more proactive environmental strategies are associated with a deeper and broader coverage of stakeholders, albeit the strength of this

relationship appears more limited than expected. According to Banerjee et al. (2003), social pressure from activists and consumers may influence the firms' environmental strategies in two ways: first, by projecting an environmentally friendly image that expresses a company's responsibility towards the natural environment; second, by developing environmental strategies aimed at the environmentally friendly consumer segment.

By extending such arguments from the environmental management literature to the EMA domain, it can be derived that stakeholders' concern for the natural environment represents a strong incentive for firms to integrate environmental criteria into their performance measurement systems, to better align their business objectives with those of their stakeholders and to make sure business operations are run in accordance with stakeholders' environmental priorities. Indeed, by relying on EPMs for internal decision-making and control, firms are expected to better implement those proactive environmental strategies which – as previously mentioned – are adopted in response to stakeholders' expectations, in order to receive the support necessary for the continued survival of the firm (Freeman 1984). Moreover, firms facing more pressure from stakeholders have greater incentives to perform well environmentally, in order to persuade stakeholders that their investments and the firms operations are not conveying important risk (Al-Tuwaijri et al. 2004). Therefore, firms should integrate environmental criteria into their decision-making and control processes in an effort to improve their environmental performance.

Based on the above mentioned arguments, I expect the stakeholders' concern rationale for corporate environmentalism to be positively related to the use of EPMs for internal decision-making and control purposes. Specifically, the following hypothesis is formulated:

H2: There is a positive relationship between stakeholders' concern and the use of EPMs for decision-making and control.

2.4 Top management environmental commitment and use of EPMs

The third influential motivation behind corporate adoption of environmental initiatives and CSR activities more in general is represented by top management commitment to social and environmental issues (Maignan et al. 2002; Bansal et al. 2000; Banerjee et al. 2003; Weaver et al. 1999; Paulraj 2009; Fraj-Andrés et al. 2009; Plaza-Úbeda et al. 2009). Indeed, in the environmental and CSR management literature there is extensive evidence for the notion that top management personal values and interests influence - and sometimes are key determinants of - corporate environmental and CSR activities (Pedersen 2006; Poksinska, Dahlgard, and Eklund 2003; Wood 1991; Agle et al. 1999). In this regard, Hemingway and MacLagan (2004) argue that “CSR can be the result of championing by a few managers, due to their personal values and beliefs, despite the risks associated with this” (page 36). Similarly, Bansal and Roth (2000) found that firms motivated by ecological responsibility often pointed to a single individual who had championed their ecological responses. In their study of the determinants of integrated and decoupled corporate ethics programmes, Weaver et al. (1999) theorize and find that top management commitment to ethics encourage both easily decoupled initiatives (i.e. policy communications) and integrated ones (i.e. ethics-oriented performance appraisal systems). More specifically, the authors argue that ethically committed executives are likely to wish to communicate their commitment to ethics through a variety of means and thus are expected to support ethics program communication activities, even though those activities could, in some situations, easily be decoupled. However, these executives are expected to follow through on their

commitment to ethics also through more deeply embedded organizational activities whose implications are difficult to avoid, such as the explicit inclusion of ethical concerns into regular employee performance appraisals. Results from their analysis of survey and archival data support these positions.

By extending Weaver et al. (1999)'s arguments to the environmental management domain, it can be expected that a company's top management environmental commitment will influence its environmental performance measurement systems. More specifically, environmentally committed managers are expected to follow through on their commitment to the natural environment by designing ad hoc performance measurement systems to make sure the business is operating in accordance with their environmental priorities. As such, I expect top management environmental commitment to be positively related to the use of EPMs for internal decision-making and control purposes.

The above mentioned arguments lead to the following hypothesis:

H3: There is a positive relationship between top management environmental commitment and the use of EPMs for decision-making and control.

2.5 Use of EPMs and environmental performance

Hypotheses concerning the performance effects of environmental performance measurement systems were derived based on a review of environmental management literature (Judge et al. 1998; Melnyk et al. 2003; Klassen et al. 1999) and of the emerging EMA literature (Henri et al. 2010; Burnett et al. 2008; Ferreira et al. 2010; Bartolomeo et al. 2000; Frost et al. 2000). The first performance dimension considered in the theoretical model is environmental performance. Consistent with Judge et al. (1998),

environmental performance is defined as a firm's effectiveness in meeting and exceeding society's expectations with respect to concerns for the natural environment.

Prior empirical literature in the environmental management area provides some preliminary evidence regarding a positive relationship between some aspects of management control and planning systems and environmental performance. For example Judge et al. (1998) found strong support for a positive relation among the level of integration of environmental management concerns in the strategic planning process and environmental performance. Melnyk et al. (2003)'s results indicate that firms in possession of a formal environmental management system perceive a critical positive impact not only on pollution abatement but also on many other dimensions of operations performance. The study by Klassen and Whybark (1999) considered the association of management controls, the adoption of pollution prevention technologies and environmental performance finding that companies with higher reliance on management controls and pollution prevention technologies were associated to lower levels of toxic releases.

In the emerging EMA literature, also, there is a very recent contribution by Henri et al. (2010) finding a positive relationship among eco-control - defined as the integration of environmental matters within a company's management control system - and environmental performance under certain circumstances (higher environmental exposure, higher public visibility, higher environmental concern, and larger size).

Based on the above mentioned evidence, it can be expected that use of EPMs is positively associated with environmental performance. Indeed, the use of EPMs for decision-making and control purposes (such as goal setting, capital investment decisions, performance evaluation and rewarding) allows for the

integration of environmental concerns within organizational routines and processes. In particular, EPMs use is expected to foster environmental performance by assisting managers in better formulating and communicating environmental strategies and targets, monitoring environmental performance through measurement and motivating employees to achieve environmental goals (Anthony et al. 1998).

Based on the above mentioned arguments, the following hypothesis is formulated:

H4: There is a positive relationship between the use of EPMs for decision-making and control and environmental performance.

2.6 Use of EPMs and economic performance

The second performance dimension considered in the model is economic performance. While extant (even if limited) empirical evidence is consistently suggestive of a positive link among environmental management control activities and environmental performance, the story is not so clear-cut with respect to economic performance.

Little evidence has been provided in past environmental management research to support a direct link between environmental management control and economic performance. As an exception, the already cited study by Judge et al. (1998) evidences a positive relationship between the level of integration of environmental management concerns in the strategic planning process and financial performance.

Coming to EMA research, several potential benefits associated with EMA systems have been proposed, including cost reductions, improved product pricing, attraction of human resources and reputational improvements (Ferreira et al. 2010), all of which can have positive economic effects. However, empirical tests providing confirmation for these alleged benefits

are still lacking. As a notable exception, the recent study by Henri et al. (2010) empirically investigates whether there is a direct positive effect of eco-control on economic performance. Such an expectation is derived by extending to the environmental management control setting the more general finding from management accounting literature regarding a positive relationship between performance measurement and control systems and economic performance (Widener 2007a; Ittner et al. 1997; Ittner et al. 2003; Luft et al. 2003). In particular eco-control, similar to performance measurement systems, is expected to promote goal congruence between the individual and the organization, coordinate and communicate strategic priorities, direct managers to critical areas of concerns, improve the allocation of resources and the establishment of priorities based on organizational goals and, therefore, to foster economic performance. However, their empirical findings fail to support such an expectation; indeed, eco-control is found to positively influence economic performance only indirectly through environmental performance. The authors explain this contradictory finding by arguing that: a) eco-control may not affect economic performance directly but indirectly via other levels of performance (such as, in this case, environmental performance); and that b) eco-control may also have some ‘costs’ (i.e. making the systems too complex and difficult to understand, promoting information overload, spreading agents’ efforts over too many objectives, reducing motivation by including multiple goals that are inconsistent in the short term, increasing administrative costs relative to simpler systems) that offset its ‘benefits’.

Given the absence of unambiguous theoretical or empirical support for predicting the relation among use of EPMs and economic performance, the following nondirectional null hypothesis is formulated:

H5: The use of EPMS for decision-making and control is not associated with economic performance.

2.7 Environmental performance and economic performance

The traditional view concerning the relationship between environmental performance and economic performance suggests an inverse relation because of the trade-off between the profitability of a firm and its environmental responsibilities (Al-Tuwaijri et al. 2004). According to this view, pursuing environmental goals is considered antithetical to sound business strategy given that any investment in improved environmental performance contributes to penalties such as increased lead times, reduced quality or increased costs, ultimately reducing profits and decreasing returns to stockholders (Melnik et al. 2003). However, several researchers have questioned this assumed relationship between environmental improvements and cost, arguing that pollution is a form of economic inefficiency and, thus, reductions in pollution actually increase productive efficiency and thereby reduce costs (Porter et al. 1995a; King et al. 2002; Porter 1991; Porter et al. 1995b). This competing hypothesis, referred to as ‘ecoefficiency’ (Burnett et al. 2008), challenges the traditional model of pollution control and cost management and reflects an underlying win–win paradigm. Recent research in the environmental accounting literature provides empirical support for the ‘ecoefficiency’ thesis. For example, Al-Tuwaijri et al. (2004), by applying a simultaneous equations approach, are able to conclude that higher environmental performance is significantly associated with higher economic performance. Similarly Burnett et al. (2008), using Data Envelopment Analysis, provide both cross-sectional and longitudinal evidence suggesting that lower polluting plants are also more efficient. Finally, the already cited study by Henri et al. (2010) also finds a positive and significant association

between environmental and economic performance in specific contexts (higher environmental exposure, higher public visibility, higher environmental concern, and larger size).

Another argument for expecting a positive relation among environmental performance and economic performance comes from the so called empirical CSP-CFP literature in CSR research, i.e. the vast stream of studies testing the Corporate Social Performance – Corporate Financial Performance link⁵⁹. Indeed this research has generally concluded that there exists a positive relationship among a firm's CSR policies and processes and its financial performance.

The above mentioned arguments lead to the following hypothesis:

H6: There is a positive relationship between environmental performance and economic performance.

2.8 Control variables

Control variables are also included in the model. First of all, I control for size. Indeed, since previous research has found that larger firms are more likely to adopt sophisticated management accounting techniques (Bouwens, and Abernethy 2000), size is likely to affect also companies' environmental performance measurement systems. In addition, size may influence the link among EPMS use and economic and environmental performance (Henri et al. 2010). Industry is also included as control variable. Indeed it can be argued that industry is an important variable driving the type and degree of external pressures organizations are facing with respect to environmental issues; thus, industry can alter organizations' responses to such issues and, consequently, also their environmental performance measurement systems. For example,

⁵⁹ For two noticeable reviews of this huge stream of literature, refer to Margolis and Walsh (2003) and Orlitzky et al. (2003).

Banerjee et al. (2003) found that industry type (dichotomized into high environmental impact as opposed to moderate environmental impact) moderates some of the relationships among the antecedents in their model (public concern, competitive advantage and top management commitment) and corporate environmentalism. In addition, organizations that operate in industries which have a greater and direct impact on the environment are more likely to use EMA since they will be able to enjoy the benefits (Ferreira et al. 2010). Performance measurement quality, i.e. the perceived quality of EPMs, is also included as control. Indeed, studies from the performance measurement systems literature (Cavalluzzo, and Ittner 2004; Abernethy, and Vagnoni 2004) find a direct relationship among performance measurement perceived quality (e.g. relevance, reliability, accuracy) and performance measurement system use. Thus, if the quality of EPMs is perceived to be particularly low, it is likely that their use is hindered. Finally, the presence of a ISO 14001 or EMAS certified environmental management system is also included as control variable (Melnyk et al. 2003).

Figure 1 provides an overview of the proposed theoretical model concerning drivers and performance effects of environmental performance measurement systems.

[Figure 1 about here]

2.9 Endogeneity concerns

One central issue in the interpretation of this study's results - similarly to any other cross-sectional analyses of survey data – is whether endogeneity impairs their reliability. Specifically, in this study the two main sources of endogeneity concerns are represented by reverse causality and potential respondent's bias (being the latter a specific manifestation of correlated

omitted variable bias, with respondents' personal environmental sensibilities influencing both the independent and dependent variables in the model).

The first kind of endogeneity concern is addressed on a theoretical basis, i.e. by leveraging on theoretical arguments suggesting reverse causality does not represent a plausible alternative to the hypothesized relationships. Indeed, concerning the determinants of environmental performance measurement systems, the study's hypotheses (H1-H3) are based on the well-established stream of literature in environmental management - reviewed in the previous paragraphs - extensively documenting how the three identified motivations influence companies' environmental strategies and initiatives, and thus possibly also EPMs use. While it may also be argued that this latter variable in turn influences managers' perceptions regarding the business case rationale for corporate environmentalism, stakeholders' concern and even their personal commitment towards the natural environment, it seems likely that such an effect will materialize only over the very long-run. Indeed, top management beliefs, attitudes and values, being part of a company's culture (Hermalin 2007) or ethical climate (Abernethy, Bouwens, and Van Lent 2012), evolve only slowly, if at all (Sørensen 2002). In contrast, senior managers can change the weight placed on EPMs for decision-making or control purposes relatively easily. Thus, it seems plausible to consider expected competitive advantage, stakeholders' concern and top management environmental commitment as pre-determined to the purpose of this study, while any feedback relations from EPMs use are likely to materialize too slowly to be captured within the time frame of this work (Luft et al. 2003). Coming to the effects of EPMs use, the main reverse causality concern regards probably the environmental performance-economic performance relationship (H6). However, empirical support for expecting that the first

variable is causal determinant of the latter, and not the opposite way around, comes from the above mentioned papers by Al-Tuwaijiri et al. (2004) and by Burnett et al. (2008). Specifically, the first paper applies a simultaneous equations approach to investigate how environmental and economic performance are interrelated when they are explicitly modeled as endogenous variables, jointly determined by the firm's strategic management process. Their results indicate that environmental performance is a significant determinant of economic performance, consistently with Porter and van der Linde (1995a)'s 'ecoefficiency' thesis, whereas economic performance is not a significant determinant of environmental performance. This result is not consistent with the economic argument that profitability drives good environmental performance and that environmental accountability is strictly a matter of affordability. Burnett et al. (2008) examine both cross-sectional and longitudinal data concerning environmental performance and productive efficiency in the United States electric utility industry before and after the 1990 Clean Air Act Amendments. Their evidence indicates that lower polluting plants are relatively more efficient not only cross-sectionally but also longitudinally. Indeed, the authors' longitudinal analyses indicate plants can simultaneously reduce pollution and increase relative efficiency. Consistently with these papers' compelling evidence, this study models environmental performance as causal determinant of economic performance. With respect to the second kind of endogeneity concern (namely, potential respondent's bias), this is instead addressed empirically in the analyses that follow, by controlling for respondent's function (dichotomized into

Sustainability/Environmental function versus other function) as a proxy of respondent's personal environmental sensibility⁶⁰.

3. Research method

3.1 Sample selection and data collection

Data were collected using a web-based questionnaire administered to a target sample of Italian organizations from a wide variety of industries. Survey method is the most diffused approach of data collection in extant management accounting literature and it is particularly suitable for the investigation of phenomena about which publicly data are not available (Ryan, Scapens, and Theobald 2002), as it is in my case⁶¹. The survey was administered under the sponsorship of SDA Bocconi School of Management and of the Italian branches of two of the world's leading bodies in the field of management systems certification services - Bureau Veritas and DNV Business Assurance - who acted as 'legitimate authority' as a strategy to increase response-rate (Dillman 2000). A non-random purposive sampling strategy was applied as it was considered better suited than a fully random sampling approach given the novelty of the field under investigation. In particular, two sampling criteria were applied. First, I included companies – as listed in the sponsors' client databases - with certified management systems in order to reduce the risk of not finding empirical evidence of the phenomenon object of study, i.e. the use of EPMs for decision-making and control⁶². Secondly, only companies above a hundred employees were

⁶⁰ More details on this robustness check are provided in the next section.

⁶¹ Obviously, survey method is not without limitations; for some considerations about this point, refer to the final section.

⁶² However, in order to increase sample size and to reduce sample selection bias as much as possible, it was also decided not to limit the target sample to companies with ISO 14001 or EMAS certified environmental management systems, but to

selected because they were expected to have more sophisticated management accounting techniques (Bouwens et al. 2000) and therefore more developed environmental performance measurement systems (Perego et al. 2009; Henri et al. 2010). A total of 443 potential respondents comprised the final target sample. It was requested that the company's CSR or Sustainability manager (or, in absence, the person most responsible for environmental aspects within the firm) be involved in the survey. Such a profile, indeed, was considered to be the most knowledgeable respondent about the central topic in the study, i.e. the use of EPMs. In some instances, respondents were senior officers from the CSR/Sustainability or Environmental/HSE⁶³ functional areas, in others they were general managers, quality, HR, manufacturing or financial managers. To control for potential respondent's bias – and particularly for the endogeneity concern that function systematically influences respondents' perceptions with regard to both the independent and dependent variables in the theoretical framework - I performed a robustness check by adding to the PLS structural model a control variable equal one if the respondent came from the CSR/Sustainability or Environmental functional areas, and zero otherwise. Results (not reported) are the same as those obtained by estimating the model without such control variable.

The web-survey was administered using a slightly modified version of the four-step implementation strategy suggested by Dillman (2000): a pre-notice

include also companies with certified quality or social management systems (according to ISO 9001 and SA8000 or OHSAS 18001 standards, respectively). Thus, the decision on whether the issues investigated were pertinent to the company was left to the individual respondent. In this respect, the first question in the questionnaire asked whether environmental performance indicators were regularly measured within the companies. Respondents answering negatively to this first item were directed to a separate set of questions and were considered not eligible to the ends of the present study.

⁶³ The acronym HSE stands for Health, Safety and Environment.

mail to alert about the study two days before the first mailing; a first mailing containing the link to access the web-based platform for questionnaire completion; and two follow-ups (made respectively two weeks and six weeks after the initial mailing). To encourage completion of the questionnaire, participants were promised a summary of the results and assured confidentiality (Dillman 2000).

Of the 443 distributed questionnaires, 100 were received (22.6%). Of these returned questionnaires, thirteen were dismissed since the respondent declared the issues investigated were not applicable to the company⁶⁴. Moreover, eleven questionnaires with multiple missing values on dependent variables were excluded from hypothesis testing to avoid any artificial increase in relationships with independent variables (Hair et al. 2010). For the remaining sample of 76 cases, the level of randomness in missing values was tested with Little's missing completely at random (MCAR) test and the result was found acceptable ($\chi^2 = 828.612$, DF 857, and Sig. 0.751). Therefore, given that the level of missing data was acceptably low and missing data did not seem to occur in a specific non-random fashion, in a small number of other cases individual missing values were replaced with mean values (Hair et al. 2010; Chapman, and Kihn 2009). This resulted in a complete data set of 76 responses, which provides a response rate of 17.2%. The response rate is similar to those reported in recent accounting surveys (Hall 2008; Ferreira et al. 2010; Moores, and Yuen 2001; Widener 2007b) and it is deemed satisfactorily given the length of the questionnaire (Moores et al. 2001). However, due to the relatively low response rate, I investigated the possibility of non-response bias. In particular, early and late responses

⁶⁴ On this regard, see footnote n. 62.

were compared in paired samples of 30 and 15 using both an independent samples *t*-test and its non-parametric equivalent, the Mann-Whitney *U*-test. Results (not reported) show that there are no significant differences on any of the study variables, including demographic and control variables. In addition, during some follow-up phone calls, I discussed with approximately 40 non-respondents their reason(s) for not completing the questionnaire. These reasons were mainly time pressures and receiving too many surveys, which are similar to the reasons for non-response reported in other studies (Hall 2008). These tests indicate that there is no significant non-response bias in the sample.

I also estimated the extent to which common method variance affects my findings by performing two statistical tests: Harman (1976)'s one factor test and partialling out a "marker variable" (Lindell, and Whitney 2001). According to the first test, if a substantial amount of common method variance exists in the data then either a single factor will emerge out of an exploratory factor analysis or one factor will account for the majority of the variance in the measurement items used in the model. The un-rotated exploratory factor analysis using the eigenvalue-greater-than-one criterion revealed five distinct factors that accounted for 70.21% of the variance, with the first factor capturing 39.67% of the variance in the data. According to the second test, if a variable can be identified that is theoretically unrelated to at least one other variable in a study, preferably the dependent variable, then it can be used as a marker variable in controlling for common method variance (Lindell et al. 2001). Following the approach by Elbashir et al. (2011), I used respondents' age as unrelated marker variable as a surrogate for common variance and examined the PLS structural model both with and without the marker variable. The findings (not reported) show the marker variable is not

statistically significant and the original results are not affected by its inclusion in the model. Together these procedures suggest that common method bias does not seriously affect the results of this study.

Demographic information was collected from respondents regarding role, job tenure, company tenure, hierarchical level, education level, age, gender, company size (number of employees), and main industry. Table 1 reports descriptive statistics and frequencies for these variables.

[Table 1 about here]

3.2 Variable measurement

The questionnaire obtained information on the use of EPMs for decision-making and control, expected competitive advantage, stakeholders' concern, top management environmental commitment and environmental performance. Economic performance was instead measured by relying on archival data. Established scales were used for each variable, except use of EPMs for decision-making and control.

An initial survey draft was circulated among four academic scholars with substantive or psychometric expertise and was pre-tested with four professionals from the two survey sponsors and three managers (not part of the sample) for clarity, understandability, ambiguity, and face validity (Dillman 2000). The review process and the pilot test resulted in minor changes to the wording of some items and to the layout of the questionnaire. Once revised on the basis of this feedback, the questionnaire was translated into Italian by applying the back-translation procedure proposed by Behling and Law (2000). The wording of items in the questionnaire is provided in the Appendix.

The psychometric properties of the measurement scales (with particular reference to the newly developed scales for EPMs use) were also assessed

prior to including them in the PLS measurement model. In particular, after checking the factorability of items⁶⁵, the design of all measurement instruments was based on the results of principal components analysis and Cronbach's alpha statistics of internal reliability (Nunnally 1978). Table 2 contains an overview of the wording of items in the final analysis together with the results of the factor and reliability analysis. Descriptive statistics, based on the average scores of multi-item variables, are presented in Table 3.

[Table 2 and Table 3 about here]

3.2.1 Use of EPMs

As already noticed, this paper explores the extent to which EPMs are used within organizations⁶⁶ for a wide array of different purposes pertaining to both the “decision-making” and decision-control (“decision-influencing”) roles of management accounting information (Luft et al. 2003). In this way, this paper attempts to contribute to extant performance measurement literature that tended to examine only one or few uses of performance measures (e.g. compensation) while ignoring other potential uses (Ittner et al. 2001)⁶⁷.

⁶⁵ The Bartlett test of sphericity showed that nonzero correlations existed at the significance level of 0.000 for all the variables. The Kaiser–Meyer–Olkin measures of sampling adequacy were above 0.7 in all cases (Hair et al. 2010).

⁶⁶ Indeed, this study investigates the use of EPMs at the corporate level of analysis, consistently with prior EMA literature (e.g. Henri et al. 2010; Perego et al. 2009). The corporate level of analysis is also particularly appropriate given the respondents' mean profile. Indeed, respondents were in general members of the top-management team (as shown in Table 1, only 1.58 hierarchical levels separate, on average, respondents from their companies' CEOs).

⁶⁷ Indeed, some studies refer to the decision-control role of management accounting information (e.g. Abernethy et al. 1995; Chenhall 1997), while other studies refer instead to its decision-making role (Bouwens et al. 2000; Gerdin 2005). Concerning the nature of the relationship between the two different uses (i.e. complementary or orthogonal), performance measurement literature provides contrasting arguments; for example, Zimmerman (2003) describes several examples of a trade-off between

Given the absence of an established scale simultaneously capturing the extent to which EPMs are used by managers for both internal decision-making and control, the instrument for EPMs use was newly developed by adapting to the environmental context items from Ittner et al. (2001), Perego et al. (2009) and Gerdin (2005). It consists of seven items measured over a seven-point fully-anchored Likert scale and asking the respondent to rate to what extent (ranging from 1=not at all to 7=totally) his firm uses EPMs for a variety of internal decision-making and control purposes. In particular, for decision-making, two items (namely, establishing formal strategic objectives and evaluating capital expenditures) were derived by Ittner et al. (2001) and three items (regarding product decisions, suppliers' selection and operational decisions) were adapted from Gerdin (2005)'s comprehensive list of different classes of decision-making problems for which management accounting information can be used by managers. For decision-control, one item (i.e. evaluating managerial performance) was derived by Ittner et al. (2001) and one item (incentivizing and rewarding managers) was adapted from Perego et al. (2009).

As reported in Table 2, the results of an exploratory factor analysis show that the seven-item scale is unidimensional, providing support for the expectation that the decision-making use and the control use of EPMs are not orthogonal. Indeed, each item loads on the same factor above 0.747. This factor explains

decision-making and control, while Drake et al. (1999) and Sprinkle (2000) lend experimental support in favor of an interdependent effect of incentive (i.e. control) systems on decision-making purposes. Given the absence of unambiguous arguments from which to motivate expectations concerning the use of EPMs for decision-making and control, in this study I make the less restrictive assumption that the two uses do not represent orthogonal constructs. Therefore, the two uses are simultaneously investigated. Results from an exploratory factor analysis (described later) provide empirical support for this assumption.

61.42% of the variation. The Cronbach alpha for the scale is 0.895, well above the conventional lower limit of 0.7. However, since the scale has not been used in prior research, I performed additional tests to examine the extent to which it converged with alternative measures of EPMs use. Firstly, respondents were asked whether there were any environmental targets amongst the objectives formally assigned to managers within their firms (yes/no). A dichotomous variable was then obtained by coding 1 affirmative answers and 0 negative ones. I deliberately chose an alternative measure which was quite different in format (forced choice) from the seven-point Likert type scale to be consistent with the principle of maximally-dissimilar forms of ratings, urged in the literature on convergent validation (Hall 2008; Abernethy, and Brownell 1999). The point-biserial correlation between the multi-item measure and the dichotomous measure is 0.511 ($p < 0.001$), providing reasonably strong support for the convergent validity of the seven-item measure used in the study⁶⁸. Moreover, an independent samples *t*-test shows that the mean score on the seven-item scale is significantly higher for those respondents answering “yes” to the above mentioned question ($\bar{X} = 4.107$) compared to those respondents answering “no” ($\bar{X} = 2.937$) ($t = 5.086$, $p < 0.001$). This supports the ability of the seven-item scale to distinguish between more or less intensive uses of EPMs. Finally, respondents answering affirmatively to this same question were also asked to indicate: -the percentage of managers to whom such environmental targets were formally assigned, and - what percentage (if any) of managers’ variable compensation depended, on average, upon the achievement of such environmental targets.

⁶⁸ I calculated the score for each respondent on the seven-item scale as an average of the seven items.

The Pearson correlation coefficients among the seven-item scale for EPMs use and these two percentages are, respectively, 0.523 ($p < 0.01$) and 0.653 ($p < 0.001$), providing additional support for the convergent validity of the seven-item measure. The reliability and validity of the scale is assessed further in the PLS measurement model.

3.2.2 *Expected competitive advantage, stakeholders' concern and top management environmental commitment*

The items to measure expected competitive advantage, stakeholders' concern and top management environmental commitment were all drawn by the corresponding scales developed by Banerjee et al. (2003)⁶⁹.

Specifically, expected competitive advantage was measured by asking respondents their agreement (ranging from 1=completely disagree to 7=completely agree) on six statements concerning the competitive advantage benefits (in term of cost savings, quality improvements and growth opportunities) perceived to derive from environmental initiatives and strategies. Exploratory factor analysis supported the use of only 4 items. Two items were eliminated from the measurement list due to their small communalities (<0.5), as suggested by Hair et al. (2010). The results from the exploratory factor analysis show the remaining four items load, as expected, on a single factor, explaining 69.13% of the variation. The Cronbach alpha for the scale is 0.849.

Stakeholders' concern was measured by asking respondents their agreement (ranging from 1=completely disagree to 7=completely agree) on four statements concerning their perceptions of importance assigned by the company's stakeholders to protecting the environment and the potential

⁶⁹ These scales have also been applied by another study in a different country (Fraj-Andrés et al. 2009), providing evidence of their robustness.

customer demand for environmentally friendly products and services. The results of an exploratory factor analysis show that the four-item scale is unidimensional, with each item loading on the same factor above 0.76. This factor explains 67.29% of the variation. The Cronbach alpha for the scale is 0.833.

Finally, top management environmental commitment was measured by asking respondents their agreement (ranging from 1=completely disagree to 7=completely agree) on three statements concerning their perceptions of top management's commitment to and support for environmental initiatives. The results of an exploratory factor analysis show that the three-item scale is unidimensional, with each item loading on the same factor above 0.95. This factor explains 94.03% of the variation. The Cronbach alpha for the scale is 0.964.

3.2.3 Environmental and economic performance

Consistently with prior literature (Henri et al. 2010; Melnyk et al. 2003; Judge et al. 1998), environmental performance is measured using a perceptual instrument. As several authors argue, in terms of consistently providing valid and reliable performance assessment, neither objective nor subjective measures are superior (Henri et al. 2010; Chenhall 2003). For example, Henri et al. (2010) demonstrate that their perceptual measure of environmental performance is significantly correlated with objective environmental performance data obtained from a public database⁷⁰. In this study, the items to measure environmental performance were drawn by the

⁷⁰ Specifically, the authors collected such data from the National Pollutant Release Inventory (NPRI) provided by the federal government of Canada. For the Italian context, unfortunately, publicly available data on companies' environmental impacts (such as those provided by the NPRI for Canadian firms or by the EPA's Toxic Release Inventory for U.S. ones) do not exist.

scale developed by Judge and Douglas (1998). In particular, four questions asked the respondent to rate its firm's performance in 2010, compared to other competitors across the industry, on several environmental dimensions (such as compliance with environmental regulations and limitation of environmental impact beyond compliance). Answer categories ranged from 1=much worse to 7=much better. The results of an exploratory factor analysis show that the four-item scale is unidimensional, with each item loading on the same factor above 0.82. This factor explains 74.23% of the variation. The Cronbach alpha for the scale is 0.880.

Economic performance is instead measured by relying on archival data. Prior environmental studies have used both accounting-based and market-based measures to represent economic performance. For example, Spicer (1978) used both accounting-based and market-based measures (profitability and the price-earnings ratio). King et al. (2002) used accounting-based (ROA and Tobin's q), while Al-Tuwaijri et al. (2004) preferred a market-based metric (annual stock returns). In this study, since the majority of firms in the sample is not publicly quoted, I used return on capital employed (ROCE), a standard accounting measure of operating profitability calculated by dividing EBIT by net operating assets. ROCE data were collected from the AMADEUS database⁷¹. However, the PLS structural model was also tested with an alternative measure of economic performance (cash flow divided by operating revenues), obtaining similar results (not reported) and thus providing evidence for the robustness of the identified relationships.

⁷¹ The AMADEUS database, developed by the company Bureau Van Dijk Electronic Publishing, contains financial data about, among others, companies operating in Italy.

3.2.4 Control variables

Size is measured using the natural log of the number of employees (Henri et al. 2010; Perego et al. 2009). Industry is measured as a dummy variable distinguishing among manufacturing (US SIC codes 20-39 inclusive) and non-manufacturing firms, since manufacturing firms are considered as more environmentally sensitive (Melnyk et al. 2003; Banerjee et al. 2003). Companies' industrial codes were also derived from the AMADEUS database. The perceived quality of EPMs is measured through a single-item instrument derived from Abernethy et al. (2004). Finally, the presence of a certified environmental management system is measured through a dummy variable based on the respondents' answers to a question asking them whether the majority of their firms' facilities is certified according to the ISO14001 or EMAS standards.

3.3 Partial Least Squares regression

PLS regression analysis was used to test the research model and hypotheses⁷². PLS is a component-based structural equation modeling (SEM) technique that simultaneously tests the psychometric properties of the scales used to measure the constructs (i.e., measurement model) and examines the strength of the relations between the constructs (i.e., structural model) (Chin 1998). Over the last few years, a growing number of accounting studies using PLS have been published (Elbashir. M.Z. et al. 2011; Chapman et al. 2009; Hall 2008; Chenhall 2005). PLS was chosen for this study because it is suitable for causal-predictive analysis of complex relationships with multiple dependent variables, when there is scarcity of prior theoretical knowledge, and/or when the sample size is relatively small (Chin et al. 1999; Hair et al.

⁷² I use Smart PLS 2.0 (Ringle, Wende, and Will 2005).

2010)⁷³; it also makes minimal data assumptions. In this study, PLS was used to test reflective links between constructs and measures (indicators) meaning that indicators are believed to reflect the unobserved, underlying construct, with the construct giving rise to the observed measures (Chapman et al. 2009; Chenhall 2005). As already noticed, PLS comprises a measurement model and a structural model, which are estimated simultaneously. However, to maximize the interpretability of both models, the PLS model is typically interpreted in two stages: first, the reliability and validity of the measurement model is assessed, and then the structural model is assessed. As such, the results from the measurement model are presented first followed by an examination of the hypothesized relations between the constructs.

4. Results

4.1 Measurement model

The preliminary analyses of uni-dimensionality and reliability of multi-item constructs (i.e., the factor analysis and Cronbach alphas) were reported and presented above (see Table 2). As Table 4 shows, the output from PLS in relation to the measurement model confirms these preliminary tests by

⁷³ Chin's (1998) rule of thumb suggests that the sample size for a PLS study should be 5 to 10 times for either: 1) the largest number of formative indicators for a particular construct in the measurement model; or 2) the largest number of structural paths directed at a particular construct in the structural model. In this study, the dependent latent variable with the largest number of structural paths directed at it is EPMS use, with seven independent variables (namely, expected competitive advantage, stakeholders' concern, top management environmental commitment and the four control variables). Thus, the sample size of 76 cases satisfies this requirement. In addition, I also employed power analysis to investigate the issue in more details (Chin et al. 1999; Abernethy, Bouwens, and Van Lent 2010). In particular, under the assumption that the EPMS use regression is a regular OLS regression (Abernethy et al. 2010) and setting α to 5% (two-tailed) and power to 80%, my sample is able to detect a true effect size of 0.2, which can be considered a medium effect size according to the operational definition suggested by Cohen (1988).

showing high (over 0.70) loadings of all items on their respective latent variables.

[Table 4 about here]

In addition, the high composite reliability measures for all latent variables (i.e. from 0.89 to 0.98) confirm the previously presented alpha scores by demonstrating acceptable reliability (Nunnally 1978).

Convergent validity of constructs is assessed by examining the average variance extracted (AVE) statistics. As the last row of Table 4 shows, the AVE for each variable is well above 0.50, which demonstrates adequate convergent validity (Chin 1998; Hair et al. 2010).

Finally, concerning discriminant validity, Table 5 shows that the square roots of the AVEs (diagonal) are all greater than the respective correlations between constructs (Chin 1998). This indicates that all measures have appropriate discriminant validity.

[Table 5 about here]

An additional test of discriminant validity assesses each measurement item to ensure that it has a higher loading on its assigned factor than on the other factors (Chin 1998). As Table 4 demonstrates, each measurement item loads higher on the appropriate construct than on any other construct, providing additional support as to the discriminant validity of the measures.

Overall, the results from the PLS measurement model indicate that each construct exhibits satisfactory reliability and validity.

4.2 Test of hypotheses

I estimate a structural model in PLS to test the hypotheses. PLS produces standardised β -statistics for each path coefficient, which are interpreted in the same way as in OLS regression. As PLS makes no distributional

assumptions, bootstrapping (1000 samples with replacement) is used to evaluate the statistical significance of each path coefficient (Chin 1998)⁷⁴.

Since the objective of PLS is to maximize variance explained rather than fit, the overall incidence of significant relationships between constructs and the explained variance of the dependent variables (i.e. the R^2 measures) are used to evaluate the PLS model instead of goodness-of-fit measures (Chin 1998; Chenhall 2005). Another assessment of the structural model involves the model's capability to predict, as expressed by the Stone-Geisser's Q^2 measure of predictive relevance⁷⁵. The R^2 and Q^2 for each endogenous variable, together with path coefficients and the corresponding t -statistics, are shown in Table 6 and 7 and, graphically, in Figure 2.

[Table 6 and Table 7 about here]

As shown in Fig. 2, the research model tests the extent to which expected competitive advantage, stakeholders' concern and top management environmental commitment are variously associated with EPMs use (H1-H3), the extent to which such use is associated with environmental and economic performance (H4 and H5) and the extent to which environmental performance is associated with economic performance (H6).

⁷⁴ Statistical significance is determined using the reported original PLS estimates and bootstrapped standard errors.

⁷⁵ Stone-Geisser's Q^2 is the predominant measure of predictive relevance (Henseler, Ringle, and Sinkovics 2009) and it can be measured, by using blindfolding procedures, only for endogenous latent variables that have a reflective measurement model operationalization. The Stone-Geisser criterion postulates that the model must be able to provide a prediction of the endogenous latent variable's indicators. The technique represents a synthesis of function fitting and cross-validation. As Chin (1998) points out, "the prediction of observables or potential observables is of much greater relevance than the estimator of what are often artificial construct-parameters" (p.320). Notwithstanding its prominence in management and marketing PLS research (Henseler et al. 2009), I was unable to find any mention of the Q^2 measure in accounting research.

[Figure 2 about here]

Overall, the results suggest the model has good predictability. As Table 6 and Table 7 show, the coefficients for 5 out of 6 hypothesized paths in the model are statistically significant at the 0.05 level or better. The results also indicate that nearly 62 percent of EPMS use, 29 percent of environmental performance and 7 percent of economic performance are explained by the model. In addition, Stone-Geisser's Q^2 is larger than zero for all endogenous latent variables, providing support for the predictive relevance of the corresponding explanatory variables (Henseler et al. 2009).

In particular, H1 predicts that there is a positive relationship between expected competitive advantage and the use of EPMS for decision-making and control. The results shown in Figure 2 and Table 6 strongly support this hypothesis (0.350, $p < 0.01$). Indeed, expected competitive advantage - i.e. the belief that environmental activities and strategies lead to economic benefits and improve long-term profitability – clearly emerges as the most important motivation behind the integration of environmental matters into companies' decision-making and control processes.

H2, by making reference to environmental management research applying insights from stakeholder theory to the study of corporate environmental initiatives, predicts that there is a positive relationship between stakeholders' concern and EPMS use. Also this hypothesis is strongly supported (0.234, $p < 0.01$), although stakeholder' pressures appear as a sensibly less influential motivation behind the integration of environmental concerns into companies' decision-making and control processes as compared to the "business case" rationale.

H3 predicts that there is a positive relationship between top management environmental commitment and the use of EPMS for decision-making and

control. The results shown in Figure 2 and Table 6 strongly support the hypothesis (0.336, $p < 0.01$). Indeed, a company's top management commitment towards the natural environment is an influential determinant behind environmental performance measurement systems' adoption and use, nearly as much as the 'business case' motivation.

H4 predicts that there is a positive relationship between the use of EPMs for decision-making and control and environmental performance. As shown in Figure 2 and Table 7, also this hypothesis is supported with a strong and significant relationship (0.502, $p < 0.01$). This finding supports the argument that the integration of environmental matters within a company's performance measurement system effectively assists managers in formulating and communicating environmental strategies and targets, monitoring environmental performance through measurement and motivating employees to achieve environmental goals and, eventually, in improving their companies' environmental footprint.

H5, given contradictory theoretical arguments and empirical evidence concerning the relation among the use of EPMs and economic performance, is formulated in the null form and predicts that EPMs use is not associated with economic performance. The results shown in Figure 2 and Table 7 fail to reject this null hypothesis. Indeed, the association between EPMs use and economic performance is close to zero (-0.071) and statistically insignificant. Finally, H6 predicts that there is a positive relationship between environmental performance and economic performance. As shown in Figure 2 and Table 7, the results support the hypothesis (0.211, $p < 0.05$) and thus provide confirmatory evidence for the 'ecoefficiency' thesis (Burnett et al. 2008).

Taken together, the results for H4, H5 and H6 echo Henri et al. (2010)'s findings concerning a full mediating effect of environmental performance on the link between 'eco-control' and economic performance. Indeed, Figure 2 indicates that use of EPMs for decision-making and control is related to economic performance only indirectly through environmental performance.

5. Discussion and conclusions

This study aimed to improve understanding of the determinants and performance effects of environmental performance measurement systems. In particular, a structural model was tested using PLS to examine how the three main motivations for corporate environmentalism - as identified within the environmental management and CSR literature - are variously associated with the use of EPMs for decision-making and control and how such use is in turn associated with environmental and economic performance.

Concerning the determinants of EPMs use, the results show that, as predicted, expected competitive advantage is strongly related to the use of EPMs for decision-making and control purposes. This result confirms the idea that the 'business case' for corporate environmentalism is the most influential motivation behind corporate adoption of environmental initiatives and strategies (Porter et al. 2006; Plaza-Úbeda et al. 2009). Top management environmental commitment is also rather strongly associated with EPMs use, consistently with those claims emphasizing the importance of a strong and committed leadership in bringing about social and environmental improvements (Hemingway et al. 2004; Agle et al. 1999). Finally, a positive relationship between stakeholders' concern and EPMs use is also supported by the data, even if the strength of this link appears lower as compared to the other two motivations.

Interesting insights can be derived by comparing these results to the general findings from social and environmental accounting research on the drivers of social and environmental external reporting. Indeed, as already noticed, accounting researchers have so far extensively investigated the determinants of social and environmental disclosures (for noticeable reviews, cf. Gray et al. 1995; Gray 2002; Adams 2002; Owen 2008; Deegan et al. 2007). Legitimacy theory in particular has been widely applied as main interpretive focus (Deegan 2002; Owen 2008; Adams et al. 1998). The result has been that, more often than not, corporate social and environmental disclosure strategies have been linked to legitimizing intentions (Deegan 2002), with the partial and selective nature of such reporting being also variously documented (Adams 2004; Harte, and Owen 1991; Moerman et al. 2005). In particular, environmental disclosures have been described as impression management techniques (Neu et al. 1998) or ‘greenwashing’ phenomena (Laufer 2003) aimed at maximizing perceptions of legitimacy but with little, if any, effects on the real work of organizations (Larrinaga-Gonzalez et al. 2001; O’Dwyer 2003, 2005). On the other hand, legitimacy theory has been also variously described as a rather under-developed theory (Deegan 2002; Owen 2008) providing only partial explanations of the social and environmental reporting phenomenon (Adams 2002; Adams et al. 1998). In this vein O’Dwyer (2002), through an interview-based analysis of managerial perceptions of corporate social and environmental disclosures, finds that these initiatives are perceived as failing to achieve a state of legitimacy and concludes that their existence may be due to motives that lie outside legitimacy theory explanations. This study’s results - and in particular the finding that stakeholders’ concern positively influences the use of EPMS for internal decision-making and control - somehow complement and reinforce

the above mentioned critiques to legitimacy theory explanations. In particular this finding is not supportive of the view that companies are mainly reacting to increasing external pressures concerning the natural environment through ceremonial, 'greenwashing' activities aimed at restoring or enhancing their image and legitimacy but without any real effect on their business operations. On the contrary, this study's results seem to indicate that stakeholders' concern is an effective mechanism in stimulating organizations to substantively integrate environmental concerns into their decision-making and control processes. As such, these findings are more in line with recent, field based research providing some initial evidence on how and under what conditions social and environmental accounting can be effective in fostering organizational change toward improved sustainability performance (Adams, and McNicholas 2007; Albeda Perez et al. 2007).

While it is true that the stakeholders' concern rationale appears the least influential motivation (in comparison with expected competitive advantage and top management environmental commitment) behind the use of EPMs, this result is consistent with Buysse and Verbeke (2003)'s conclusion that the linkages between the importance attached to stakeholders and the level of proactiveness of environmental strategies is more limited than expected. As the authors notice, this overall finding is due in particular to some categories of stakeholders (in their case, non-governmental organizations and the media) being perceived as relatively unimportant even to companies pursuing an environmental leadership strategy. Similar arguments may explain the relatively low influence of the stakeholders' concern rationale on EPMs use emerged from this study. Indeed, being this study's model purposefully broad and aiming at investigating a range of possible different drivers behind EPMs adoption and use, it employs a coarse-grained operationalization of the

stakeholders' concern concept which does not distinguish among different categories of stakeholders. Given that this study demonstrates that stakeholders' concern is a significant predictor of EPMS use, future research could adopt more fine-grained operationalizations of the concept, such as the one proposed by Buysse and Verbeke (2003), to investigate in more details eventual differential strengths of the stakeholders' concern-EPMS use relationship according to different stakeholders' categories.

Coming to the performance effects of environmental performance measurement systems, the results show that, as expected, EPMS use is significantly associated with environmental performance. This finding confirms the important role played by such systems in helping managers improving their companies' environmental footprint (Judge et al. 1998; Henri et al. 2010). Indeed, the use of EPMS for decision-making and control purposes (such as goal setting, capital investment decisions, performance evaluation and rewarding) allows for the integration of environmental concerns within organizational routines and processes. It supports effective resource management and environmental performance. Indeed, by clarifying and communicating vision and strategy, EPMS use directs managers to critical areas of environmental matters, communicates the associations between employees' actions and environmental goals, improves the allocation of resources, and encourages the establishment of priorities based on such environmental goals (Epstein 1996; Epstein, and Birchard 2000). Finally, the results also provide confirmatory evidence for an indirect relationship among EPMS use and economic performance through environmental performance, as identified by Henri et al. (2010)'s work and consistently with the 'ecoefficiency' hypothesis (King et al. 2002; Porter et al. 1995a; Porter 1991; Porter et al. 1995b).

These findings need to be interpreted in light of the limitations of this study. First, as previously noticed, a new instrument was developed to measure EPMs use for decision-making and control. Although the instrument exhibited satisfactory psychometric properties, future research could refine and further validate the instrument. Second, even if I discussed in some details the identification strategy underlying the direction of proposed relationships, no clear evidence of causality can be established with survey-data obtained from cross-sectional analyses. Rather the evidence must be considered consistent with theoretical arguments and predicted hypotheses. Third, the survey data report managers' perceptions and, therefore, may not accurately represent actual business practice – with particular regard to the extent of EPMs use - and actual environmental performance. Fourth, although tests indicate an absence of non-response bias, the relatively low response rate is a limitation of the study. Finally, the study's focus of analysis – i.e. environmental performance measurement systems – should be taken into consideration when interpreting the findings. Indeed, performance measurement systems represent only one component of firms' overall “control package” (Abernethy, and Chua 1996). While this study's particular focus was motivated by the fact that performance measurement systems are key foundations of companies' overall management control systems (Otley 1999) and they are particularly suitable to the investigation of a wide variety of decision-making and control problems for which EMA information can be used by managers, it nevertheless excludes other types of management control systems, and in particular more informal ones such as social (Ouchi 1979) or personnel (Merchant et al. 2003) controls.

Notwithstanding these various limitations, this study is believed to contribute valuable theoretical and empirical insights to both researchers (in different disciplines) and practitioners.

Concerning contributions to research, this investigation firstly contributes to the emerging field of literature in EMA (Ferreira et al. 2010; Henri et al. 2010; Burnett et al. 2008). In particular, the study is among the first to investigate the motivations behind corporate adoption of environmental performance measurement systems. In so doing, it also contributes to the 'greenwashing' debate in social and environmental accounting research (Laufer 2003) by showing that, contrary to diffused allegations, increasing external pressures towards corporate environmentalism are associated with substantive activities such as the use of EPMs for internal decision-making and control. More in general, this investigation contributes to social and environmental accounting research by shifting the focus of analysis from external reporting to internal performance measurement systems, as suggested by recent calls urging more management accounting research in the area (Owen 2008; Gray 2002). In addition, by showing that there is a positive relationship among a company's environmental performance and its bottom line, this investigation contributes to environmental strategic management literature - and more in general to the CSP-CFP literature in CSR research, by providing additional confirmatory evidence on the 'ecoefficiency' thesis (King et al. 2002; Porter et al. 1995a; Porter 1991; Porter et al. 1995b).

This study is also of practical significance for management accountants, environmental managers, top management in general and other professionals in the field of environmental management (e.g. environmental consultants). In particular, it provides empirical support for the business case rationale for

corporate environmentalism and thus encourages managers to adopt effective strategies and initiatives aimed at improving their companies' environmental performance as a way to contribute to corporate economic well-being. The use of EPMs for internal decision-making and control is shown to represent an example of such effective mechanisms. The study's findings concerning the determinants of EPMs use have highly relevant implications for academia, too. Indeed the two most influential determinants of EPMs use emerging from this work, namely top management perceptions about the business case for corporate environmentalism and its commitment towards the environmental agenda, depend to a large extent on our efforts as researchers and teachers. Therefore, ever more convincing empirical evidence on the business case for corporate environmentalism and more attention to the inclusion of environmental accounting courses into universities' and business schools' programs are needed in order to contribute shaping management's attitudes towards the natural environment and, therefore, to incentivize the diffusion of appropriate environmental performance measurement systems leading to enhanced environmental performance.

This study also opens up avenues for future research. In particular, as already noticed, it could be interesting to examine further the relationship among stakeholders' concern and EPMs use by adopting a more fine-grained operationalization of the first variable (cf., for example, Buysse et al. 2003), to test whether the strength of such link vary according to the specific stakeholders' categories considered. Also, it could be interesting to replicate such an investigation by shifting the focus of analysis from the environmental to the social dimension of the CSR concept. Indeed, as noticed by several authors (cf., for example, Adams et al. 1998; Owen 2008), starting

from the end of the 1980s environmental accounting emerged as the prime focus of attention, leading to the almost complete displacement of the social dimension. If it is possible to notice signals of a recent renaissance of interest in social issues – with themes such as ‘eco-justice’ in addition to ‘ecoefficiency’ or ‘triple bottom line’ reporting, encompassing the social and economic in addition to the purely environmental dimension - it is undeniable that social matters are still particularly underinvestigated. Therefore, it could be particularly interesting to apply this study’s model to investigate the determinants and performance effects of social performance measurement systems, to test whether the identified relationships hold also in that context or differences arise.

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Figure 1 – Theoretical model (paths for control variables not shown)

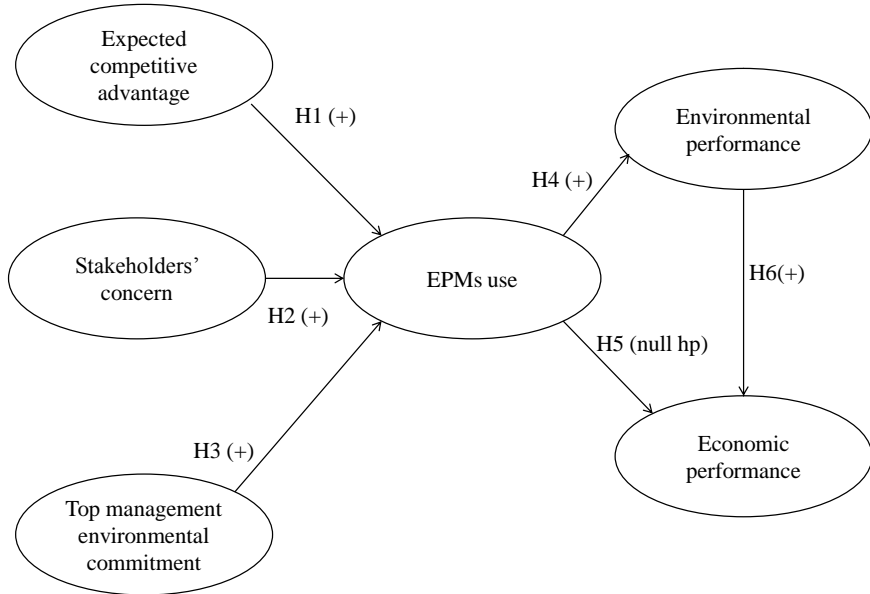


Table 1 – Demographic variables and sample composition (n = 76)

Panel A: Descriptive statistics for demographic variables				
Variable	Minimum	Maximum	Mean	SD
Job tenure (years)	1	25	8.49	5.61
Company tenure (years)	2	34	12.54	8.11
Age (years)	30	62	44.19	8.01
Hierarchical level ^a	0	5	1.58	0.91
Company size (n. of employees)	75	79,941	3,610.84	1,4361.90
Panel B: Respondents by functional area			Frequency	%
CSR/Environmental			27	38.0
General management			9	12.7
Quality			20	28.2
HR			7	9.9
Other			8	11.3
Panel C: Respondents by education			Frequency	%
High school			24	32.4
University degree			31	41.9
Master degree			15	20.3
Doctorate degree			4	5.4
Panel D: Respondents by gender			Frequency	%
Male			45	60.8
Female			29	39.2
Panel E: Respondents by industry category (US SIC codes)			Frequency	%
Agriculture, mining and construction (01-19)			8	10.5
Manufacturing (20-39)			39	51.3
Transportation and utilities (40-49)			6	7.9
Wholesale and retail (50-59)			6	7.9
Services (70-89)			17	22.4

^a Measured by asking respondents how many hierarchical levels separate them from their companies' CEOs.

Table 2 – Principal component analysis and Cronbach alphas ($n = 76$)

Factors and Cronbach alphas	Factor loadings
Panel A: EPMs use ($\alpha = 0.895$, Eigenvalue= 4.30, 61.42 % of variance)	
Evaluate managers' performance (Item1)	0.747
Incentivize and reward managers (Item2)	0.748
Establish formal strategic objectives (Item3)	0.852
Evaluate and approve capital expenditures (Item4)	0.773
Make product decisions, e.g.: product price, product mix (Item5)	0.805
Select/assess external suppliers (Item6)	0.776
The daily management and operational decisions, e.g.: assess make-or-buy alternatives, assess the manufacturing process to use (Item7)	0.781
Panel B: Expected competitive advantage ($\alpha = 0.849$, Eigenvalue = 2.76, 69.13% of variance)	
Being environmentally conscious can lead to substantial cost advantages for our firm (Item1)	0.712
Our firm can enter lucrative new markets by adopting environmental strategies (Item 4)	0.836
Our firm can increase market share by making our current products more environmentally friendly (Item 5)	0.931
Reducing the environmental impact of our firm's activities will lead to a quality improvement in our products and processes (Item 6)	0.833
Panel C: Stakeholders' concern ($\alpha = 0.833$, Eigenvalue = 2.69, 67.29% of variance)	
Our stakeholders feel that environmental protection is a critically important issue facing the world today (Item 1)	0.760
The public is very concerned about environmental destruction (Item 2)	0.787
Our customers are increasingly demanding environmentally friendly products and services (Item 3)	0.862
Our stakeholders expect our firm to be environmentally friendly (Item 4)	0.868
Panel D: Top management environmental commitment ($\alpha = 0.964$, Eigenvalue = 2.82, 94.03% of variance)	
The top management team in our firm is committed to environmental preservation (Item 1)	0.980
Our firm's environmental efforts receive full support from our top management (Item 2)	0.976
Our firm's environmental strategies are driven by the top management team (Item 3)	0.953

Panel E: Environmental performance ($\alpha = 0.880$, Eigenvalue = 2.97, 74.23% of variance)

Complying with environmental regulations (i.e. emissions, waste disposal) (Item 1)	0.894
Limiting environmental impact beyond compliance (Item 2)	0.878
Preventing and mitigating environmental crises (i.e. significant spills) (Item 3)	0.846
Educating employees and the public about the environment (Item 4)	0.826

Table 3 – Descriptive statistics for variables (n = 76)

<i>Panel A: Descriptive statistics (for scale variables)</i>				
Variable	Mean	SD	Theoretical range	Actual range
EPMs use	3.58	1.14	1.00-7.00	1.00-6.00
Expected competitive advantage	5.12	1.03	1.00-7.00	2.00-7.00
Stakeholders' concern	5.66	0.87	1.00-7.00	1.75-7.00
Top management commitment	5.69	1.12	1.00-7.00	1.00-7.00
Environmental performance	5.36	0.90	1.00-7.00	2.00-7.00
Economic performance	0.13	0.17	NA	0.001-0.896
Size (ln n. employees)	5.95	1.49	NA	4.30-11.29
EPMs perceived quality	5.26	1.19	1.00-7.00	1.00-7.00
<i>Panel B: Frequencies (for dummy variables)</i>				
Variable			Frequency	%
Industry = 1 (manufacturing)			39	51.32
Industry = 0 (non manufacturing)			37	48.68
Certification = 1 (certified environmental management system)			39	52.00
Certification = 0 (no certified environmental management system)			36	48.00

Table 4 – Item Loadings^a and Cross Loadings; Composite Reliability and AVE statistics (*n* = 76)

	EPMs use	Expected competitive advantage	Stakeholders' concern	Top management commitment	Environmental performance	Economic performance	Size	Industry	EPMs perceived quality	Certification
EPMs use										
Item1	0.748	0.454	0.455	0.294	0.442	0.168	0.121	0.050	0.263	0.327
Item 2	0.744	0.332	0.362	0.467	0.426	0.090	0.103	0.023	0.365	0.223
Item 3	0.848	0.499	0.543	0.420	0.346	0.007	0.108	0.085	0.356	0.431
Item 4	0.767	0.380	0.530	0.371	0.401	-0.053	0.090	0.223	0.309	0.223
Item 5	0.816	0.494	0.458	0.424	0.444	0.020	0.041	0.142	0.359	0.283
Item 6	0.788	0.421	0.415	0.523	0.438	-0.015	0.039	-0.045	0.474	0.228
Item 7	0.787	0.446	0.504	0.513	0.403	0.078	0.022	0.081	0.388	0.185
Expected competitive advantage										
Item 1	0.494	0.756	0.397	0.230	0.509	0.114	0.242	-0.215	0.288	0.156
Item 4	0.360	0.798	0.355	0.096	0.301	-0.040	0.201	0.128	0.275	0.105
Item 5	0.423	0.910	0.262	0.060	0.381	0.107	0.156	0.012	0.150	0.243
Item 6	0.516	0.845	0.375	0.227	0.289	0.137	0.057	-0.061	0.267	0.229
Stakeholders' concern										
Item1	0.538	0.336	0.791	0.655	0.296	0.126	0.165	-0.049	0.420	0.210
Item 2	0.447	0.238	0.778	0.182	0.219	0.035	0.183	0.099	0.303	0.241
Item 3	0.423	0.467	0.842	0.307	0.297	0.152	0.198	-0.006	0.298	0.076
Item 4	0.522	0.357	0.867	0.379	0.290	0.064	0.280	0.036	0.475	0.205

^aTesi di dottorato "Exploring the design and functioning of management control systems for CSR: three essays"

di LISI IRENE ELEONORA

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	EPMs use	Expected competitive advantage	Stakeholders' concern	Top management commitment	Environmental performance	Economic performance	Size	Industry	EPMs perceived quality	Certification
Top management commitment										
Item1	0.545	0.209	0.492	0.981	0.309	0.126	0.107	-0.131	0.445	0.145
Item 2	0.547	0.201	0.518	0.977	0.334	0.134	0.117	-0.130	0.440	0.141
Item 3	0.505	0.159	0.386	0.953	0.321	0.138	0.100	-0.152	0.371	0.024
Environmental performance										
Item1	0.441	0.404	0.233	0.204	0.894	0.128	-0.029	0.241	0.298	0.312
Item 2	0.485	0.402	0.297	0.374	0.884	0.224	0.101	0.054	0.383	0.261
Item 3	0.475	0.409	0.411	0.262	0.848	0.110	-0.030	0.152	0.231	0.167
Item 4	0.407	0.338	0.215	0.298	0.819	0.136	-0.115	-0.083	0.344	0.055
Economic performance	0.052	0.107	0.114	0.136	0.175	1.000	0.064	-0.144	0.041	0.074
Size	0.093	0.194	0.253	0.112	-0.015	0.064	1.000	-0.289	0.233	0.329
Industry	0.101	-0.058	0.021	-0.142	0.111	-0.144	-0.289	1.000	0.098	0.226
EPMs perceived quality	0.459	0.299	0.465	0.433	0.364	0.041	0.233	0.098	1.000	0.205
Certification	0.346	0.227	0.228	0.109	0.237	0.074	0.329	0.226	0.205	1.000
COMPOSITE										
RELIABILITY	0.919	0.898	0.891	0.980	0.920	NA ^b	NA ^b	NA ^b	NA ^b	NA ^b
AVE	0.618	0.688	0.673	0.942	0.743	NA ^b	NA ^b	NA ^b	NA ^b	NA ^b

^a All loadings reported in this table are statistically significant at $p < 0.001$.

^b Composite reliability and AVE will only be suitable to use for multi-item constructs.

Table 5 – Inter-Construct Correlations and Square Root of AVE statistics^a (*n* = 76)

	EPMs use	Expected comp. adv.	Stakeholders' concern	TM commit.	Env. perf.	Eco perf.	Size	Industry	EPMs perceived quality	Certif.
EPMs use	0.786									
Expected comp. adv.	0.553	0.829								
Stakeholders' concern	0.595	0.424	0.820							
TM commitment	0.549	0.196	0.481	0.971						
Env. perf.	0.526	0.452	0.338	0.331	0.862					
Eco perf.	0.052	0.107	0.114	0.136	0.175	1.000				
Size	0.093	0.194	0.253	0.112	-0.015	0.064	1.000			
Industry	0.101	-0.058	0.021	-0.142	0.111	-0.144	-0.289	1.000		
EPMs perceived quality	0.459	0.299	0.465	0.433	0.364	0.041	0.233	0.098	1.000	
Certification	0.346	0.227	0.228	0.109	0.237	0.074	0.329	0.226	0.205	1.000

^a Diagonal elements are the square roots of the average variance extracted statistics. Off-diagonal elements are the correlations between the latent variables calculated in PLS. AVE will only be suitable to use for multi-item constructs.

Table 6 – PLS structural model for the determinants of EPMs use: path coefficients, t -statistics, R^2 and Q^2 ($n = 76$)

Paths from	Paths to EPMs use
Expected competitive advantage	0.350 (4.265)**
Stakeholders' concern	0.234 (2.578)**
Top management commitment	0.336 (3.750)**
Size	<i>-0.130</i> <i>(1.704)</i>
Industry	<i>0.076</i> <i>(1.137)</i>
EPMs perceived quality	<i>0.085</i> <i>(1.193)</i>
Certification	<i>0.185</i> <i>(2.205)*</i>
R^2	0.615
Stone-Geisser's Q^2	0.378

Each cell reports the path coefficient (t-value).

Bold style denotes hypothesized paths, while italic style denotes control paths.

* and ** denote significance at the 5 and 1 percent levels using a one-tailed test for hypotheses with predicted sign and a two-tailed test for non-directional hypotheses (i.e. control paths).

Table 7 – PLS structural model for the performance effects of EPMs use: path coefficients, t -statistics, R^2 and Q^2 ($n = 76$)

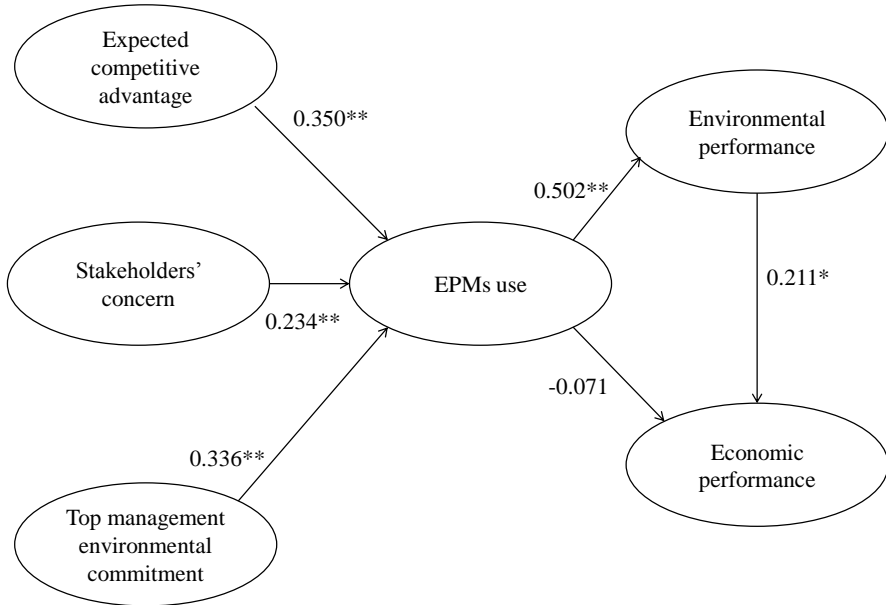
Paths from	Paths to	
	Environmental performance	Economic performance
EPMs use	0.502 (6.255)**	-0.071 (0.876)
Environmental performance	-	0.211 (1.859)*
Size	<i>-0.086</i> <i>(0.951)</i>	<i>-0.011</i> <i>(0.226)</i>
Industry	<i>0.016</i> <i>(0.223)</i>	<i>-0.184</i> <i>(1.804)</i>
Certification	<i>0.088</i> <i>(1.107)</i>	<i>0.093</i> <i>(0.995)</i>
R^2	0.288	0.066
Stone-Geisser's Q^2	0.203	0.083

Each cell reports the path coefficient (t-value).

Bold style denotes hypothesized paths, while italic style denotes control paths.

* and ** denote significance at the 5 and 1 percent levels using a one-tailed test for hypotheses with predicted sign and a two-tailed test for non-directional hypotheses (i.e. H5 and control paths).

Figure 2 – PLS structural model (paths for control variables not shown)
(n = 76)



* and ** denote significance at the 5 and 1 percent levels using a one-tailed test for hypotheses with predicted sign and a two-tailed test for non-directional hypotheses (H5).

Appendix: Main survey items

I. Use of EPMs (1=not at all, 7=totally)

Explanatory statement: “The aim of this section is to collect information on the extent to which environmental performance indicators are used within your firm for different purposes. The adjective environmental is related to: inputs (e.g., material, energy, water), outputs (e.g., emissions, effluents, waste), biodiversity, environmental compliance. Please, indicate to what extent your firm uses environmental performance indicators for each of the following purposes:”

- | | |
|--------|---|
| Item 1 | Evaluating managerial performance |
| Item 2 | Incentivizing and rewarding managers (e.g.: determining salary increases, annual bonus and/or career advances) |
| Item 3 | Establishing formal strategic objectives (or goals) |
| Item 4 | Evaluating and approving capital expenditures |
| Item 5 | Making product decisions (e.g.: product price, product mix, new product development) |
| Item 6 | Defining standards for the selection/retention of external suppliers |
| Item 7 | The daily management and operational decisions (e.g.: assessing make-or-buy alternatives, assessing the manufacturing process to use) |

II. Expected competitive advantage (1=completely disagree, 7=completely agree)

Explanatory statement: “Indicate your agreement on the following statements:”

- | | |
|--------|--|
| Item 1 | Being environmentally conscious can lead to substantial cost advantages for our firm |
|--------|--|

- Item 2 Our firm has realized significant cost savings by experimenting with ways to improve the environmental quality of our products and processes (DROPPED)
- Item 3 By regularly investing in research and development on cleaner products and processes, our firm can be a leader in the market (DROPPED)
- Item 4 Our firm can enter lucrative new markets by adopting environmental strategies
- Item 5 Our firm can increase market share by making our current products more environmentally friendly
- Item 6 Reducing the environmental impact of our firm's activities will lead to a quality improvement in our products and processes

III. Stakeholders' concern (1=completely disagree, 7=completely agree)

Explanatory statement: "Indicate your agreement on the following statements:"

- Item 1 Our stakeholders feel that environmental protection is a critically important issue facing the world today
- Item 2 The public is very concerned about environmental destruction
- Item 3 Our customers are increasingly demanding environmentally friendly products and services
- Item 4 Our stakeholders expect our firm to be environmentally friendly

IV. Top management environmental commitment (1=completely disagree, 7=completely agree)

Explanatory statement: “Indicate your agreement on the following statements:”

- Item 1 The top management team in our firm is committed to environmental preservation
- Item 2 Our firm's environmental efforts receive full support from our top management
- Item 3 Our firm's environmental strategies are driven by the top management team

V. Environmental performance (1=much worse, 7=much better)

Explanatory statement: “Rate your firm’s overall performance in 2010, compared to other competitors across the industry, on each of the following objectives:”

- Item 1 Complying with environmental regulations (i.e. emissions, waste disposal)
- Item 2 Limiting environmental impact beyond compliance
- Item 3 Preventing and mitigating environmental crises (i.e. significant spills)
- Item 4 Educating employees and the public about the environment

Determinants and performance effects of Social Performance Measurement Systems

*Irene Eleonora Lisi*⁷⁶

Abstract

This study explores the performance measurement systems adopted by companies to internally manage their social responsibility activities, a theme which is becoming an unavoidable thematic for companies given ever escalating public scrutiny and pressures. In particular, the study investigates the determinants and performance effects of such systems. A theoretical model is proposed to explain how three fundamental drivers of corporate social strategies - i.e. expected competitive advantage, stakeholders' concern and top management social commitment - influence the use of social performance measures for internal decision-making and control, and how such use impacts companies' social and economic performance. The model is tested using data collected from a survey of 76 managers. Results demonstrate that, consistently with the study's hypotheses, expected competitive advantage and top management social commitment are influential motivations behind the integration of social concerns within companies' decision-making and control processes. Contrary to what expected, instead, stakeholders' concern is not significantly associated with the extent to which social performance measures are used for decision-making and control. Use of social performance measures, in turn, is found to be positively associated with social performance and, through this, with economic performance.

⁷⁶ PhD Candidate in Business Administration and Management, Università Bocconi, Accounting Department. E-mail: irene.lisi@phd.unibocconi.it.

1. Introduction

Over the last decades, a lively debate on the role of corporations in society has been generated (Basu et al. 2008) and organizations in every sector have been confronted with increasing pressures from multiple sources to operate in a socially responsible fashion (Porter et al. 2006). It was the Green Paper by the European Commission (2001b) that introduced the world to the concept of Corporate Social Responsibility (CSR), “a concept whereby companies integrate social and environmental concerns in their business operations and in their interaction with their stakeholders on a voluntary basis. It is about enterprises deciding to go beyond minimum legal requirements ... in order to address societal needs” (European Commission 2006b). The development of Socially Responsible Investment, social rating agencies and the increasing power of NGOs and the media, rapidly contributed to making CSR an unavoidable thematic for companies.

In response to such escalating pressures, over the last 20 years several thousand companies have started to disclose information about their social and environmental performance and the number of published CSR, or Sustainability⁷⁷ reports has rapidly grown (KPMG 2011).

Accounting research on the topic has also flourished (Durden 2008). To date, this literature has provided valuable insights on the determinants and managerial motivations underpinning social and environmental reporting initiatives (Owen 2008; Gray et al. 1995; Adams 2002). In particular, the environmental dimension of such reporting initiatives has been investigated in depth (Owen 2008; Adams et al. 1998), but studies that simultaneously

⁷⁷ The sustainability concept came to particular prominence with the Brundtland Report of 1987 which defined it as “development that meets the needs of the present without compromising the ability of future generations to meet their own needs” (World Commission on Environment and Development 1987).

address the disclosure of both environmental and social types of information have been also conducted⁷⁸. Some attention has also been devoted to the relationship among environmental disclosures and some measures of environmental and economic performance (Al-Tuwaijri et al. 2004; Clarkson et al. 2008).

Only more recently social and environmental accounting research started to consider also the internal aspects of social and environmental accounting. In particular, some case-studies have been conducted on the challenges and implications for management accounting and control systems of incorporating a social and environmental dimension (Durden 2008; Adams, and McNicholas 2007; Norris et al. 2004). Moreover, several conceptual frameworks have been proposed for the integration of social and environmental responsibility concerns into performance measurement systems (for a review, cf. Bonacchi et al. 2007). Being this stream of literature still at its infancy, however, it suffers from a lack of empirical evidence, and this is particularly evident as far as the social (as opposed to the environmental) dimension of CSR is concerned. Indeed, differently from what noticed above with respect to social and environmental reporting literature, extant management accounting research on the topic is nearly exclusively focused on the environmental dimension (Perego et al. 2009; Ferreira et al. 2010; Bartolomeo et al. 2000; Burnett et al. 2008; Henri et al.

⁷⁸ For example Adams et al. (1998), in their comprehensive study of corporate social reporting in western Europe, investigate environmental reporting, reporting on employee issues and ethical reporting. This last, residual category is defined as any information (except employee or environmental) concerned directly or indirectly with giving an impression of corporate ethical values. Included are a wide range of specific topics, such as customer relations, community involvement, equal opportunities, investment policies, charitable and political activities and product safety.

2010)⁷⁹. Thus, the challenges and implications of integrating social responsibility concerns into a company's management accounting and control systems have been almost completely neglected.

This gap is particularly unfortunate given the important role that properly designed management accounting and control systems may play in helping firms better facing their social responsibilities. Indeed, providing social performance measures to external stakeholders in social reports is supposed to be ineffective if these data are not also used for internal decision-making and control purposes (Adams 2002). These claims assume particular relevance in today's climate of heightened scrutiny toward corporate behavior following the recent spate of corporate scandals, accounting frauds, and dubious business conduct (Basu et al. 2008). The above mentioned paucity of management accounting research on the social dimension of CSR is also unfortunate in light of the peculiarities of this domain, which is even broader, softer and less easily quantifiable than the environmental one. Indeed, under the label 'social' a wide range of specific topics are included, such as labor practices (i.e., occupational health and safety), human rights (i.e., child labor), society (i.e., relations with local communities), product responsibility (i.e., customer health and safety). Moreover, social initiatives and performance tend also to be less easily quantifiable than environmental ones⁸⁰. Therefore, empirical research focusing on the challenges and

⁷⁹ Specifically, starting from the mid-Nineties, the area of Environmental Management Accounting – defined as “the management of environmental and economic performance through the development of appropriate environment-related accounting systems and practices” (IFAC 2005) – has been introduced.

⁸⁰ Indeed, corporate environmental activities (e.g. investments in state-of-the-art technologies to abate emissions) and performance (e.g., toxic emissions levels, materials consumption, waste produced) can be measured quite precisely. In this respect, several models and tools have been developed for computing the

implications of integrating social responsibility – as opposed to environmental - concerns into a company's management accounting and control systems is particularly warranted.

Starting from these premises, the objective of this paper is to develop and empirically test a conceptual framework on the determinants and performance effects of social performance measurement systems, i.e. the performance measurement systems adopted by companies to manage their social responsibility activities. Performance measurement systems, indeed, are key foundations of companies' overall management control systems (Otley 1999); through them the main tasks traditionally assigned to management control systems, i.e. formulation and communication of objectives, monitoring performance through measurement and motivating employees to achieve company goals (Anthony et al. 1998), can be pursued. To the ends of this study, social performance measurement systems refer to the extent to which Social Performance Measures (SPMs)⁸¹ are used by managers for both decision-making and control purposes, as an initial attempt to discriminate performance measurement systems that extensively rely upon

environmental footprint (the carbon footprint, water footprint and so on and so forth) of companies, some of which are even available for free on the web. The European Union Emissions Trading System is meant to quantify, in monetary terms, companies' environmental externalities. With respect to the social dimension of CSR, nothing similar is available.

⁸¹ An exemplary list of SPMs is provided by the GRI Sustainability Reporting Guidelines, the most widely adopted standard for social and environmental reporting (Global Reporting Initiative). In particular, GRI SPMs cover performance related to labor practices (i.e., occupational health and safety), human rights (i.e., child labor), society (i.e., relations with local communities), product responsibility (i.e., customer health and safety).

social metrics from situations in which the role played by these indicators appears to be negligible⁸².

In particular, the research questions addressed by this study are the following:

- to what extent are SPMs used by companies for decision-making and control?
- what are the determinants of SPMs use?
- what are the performance effects of SPMs use?

Hypotheses regarding determinants and performance effects of social performance measurement systems were derived based on a broad review of different streams of literature relevant to the topic under investigation. Specifically, from a review of CSR management literature, three main drivers emerged as the most influential motivations behind corporate adoption of social strategies: expected competitive advantage (i.e. the 'business case' rationale for CSR), stakeholders' concern and top management social commitment. Therefore, these motivations are identified as the most likely determinants of SPMs use. Concerning the performance effects of social performance measurement systems, the theoretical framework proposes that SPMs use positively influences companies' social and economic performance by extending to the social dimension of CSR findings from recent work in environmental management accounting research (Henri et al. 2010). Therefore, this study follows the "principles, processes, performance" logic suggested by Wood (1991, page 693) as a way to examine the effects of

⁸² In so doing, this paper also answers to Ittner and Larcker (2001)'s call for studies investigating a broad set of measurement system uses. For a discussion on the relationships between the two different purposes (i.e. decision-making and control) of SPMs use, refer to section 3.2.1.

firms' motivations and attitudes towards social responsibility on SPMs use and, through this, on corporate performance.

Data collected from a survey of Italian CSR/Sustainability managers are used to empirically test the proposed model. The survey was administered under the sponsorship of SDA Bocconi School of Management and of the Italian branches of two of the world's leading bodies in the field of management systems certification services - Bureau Veritas and DNV Business Assurance.

The empirical results presented are based on Partial Least Squares (PLS) analysis (Chin et al. 1999; Chin 1998) of the 76 (17.2%) usable questionnaires returned.

Overall, the results suggest the model has good predictability, with 7 out of 11 hypothesized paths statistically significant at the 0.05 level or better. Concerning the determinants of SPMs use, the results show that, as hypothesized, expected competitive advantage is significantly associated with SPMs use. This result confirms the idea that the 'business case' for CSR is the most influential motivation behind corporate adoption of social strategies (Porter et al. 2006; Plaza-Úbeda et al. 2009; Wood 2010). Similarly, top management social commitment is also significantly associated with the use of SPMs for decision-making and control, in support of those claims emphasizing the paramount importance of a strong and committed leadership in bringing about social and environmental improvements (Hemingway et al. 2004; Agle et al. 1999). Contrary to expectations, stakeholders' concern is not significantly associated with SPMs use. This result provides some support for the 'window dressing' argument according to which external pressures concerning firms' social responsibilities are mainly associated with legitimizing strategies (Deegan

2002) aimed at restoring or enhancing corporate image - for example through external social disclosures - but without any real effect on companies' business operations (Adams 2004; Moerman et al. 2005; O'Dwyer 2005). Coming to the performance effects of SPMs use, the results show that, as expected, SPMs use is significantly associated with social performance and, through this, with economic performance. This finding confirms the important role played by proper performance measurement systems in helping managers improving their companies' social performance and, indirectly, also the bottom line.

This study contributes to literature in several ways. In general, it contributes to social and environmental accounting research by shifting the focus of analysis: - from external reporting to internal decision-making and control; and - from the environmental to the social dimension of CSR. In particular, the study is the first to empirically investigate both the determinants of SPMs use for decision-making and control and the effects of such use on social and economic performance. In so doing, this study contributes also to management accounting research in general, in which the so-called selection/congruence models (Luft et al. 2003; Chenhall 2003) are generally based on the assumption that a proper fit among contextual variables and well designed measurement and control systems enhances firms' performance but then this assumption is often not explicitly tested (Gerdin 2005; Luft et al. 2003). Finally, by showing that there is a positive relationship among a company's social performance and its bottom line, this investigation contributes to that vast stream of studies in CSR literature concerning the relationship between corporate social performance and economic performance (Margolis et al. 2003; Orlitzky et al. 2003).

The remainder of the paper is organized as follows. The next section develops the theoretical model, including presentation of hypotheses. Section 3 clarifies the research method, including sample selection and variable measurement. This is followed by presentation of the results. The final section discusses the results and concludes the paper by raising implications for theory and practice, acknowledging limitations of the study, and offering directions for further research.

2. Theoretical development and hypotheses formulation

2.1 CSR management literature: the determinants of corporate social strategies

During the last two decades, management scholars have produced an impressive volume of research trying to understand the factors that influence social strategies in a firm. The literature has outlined three main drivers to the adoption of such strategies. A major research stream in the field argues that firms adopt social and environmental agendas because they are economically beneficial to the firm. From this instrumental perspective (Donaldson et al. 1995), management's concern for maximizing shareholder welfare is what drives their agenda to adopt CSR initiatives. Even if economic gains can be ambiguous, long term and difficult to assess (McWilliams et al. 2001), pursuing social and environmental strategies may generate intangible benefits that improve the firm's ability to attract resources, enhance reputational trust, and eventually build competitive advantage (Porter et al. 2006).

A second stream of research emphasizes the role of exogenous drivers as the main influence to embark in social and environmental initiatives. The drivers include institutional forces (Campbell 2007; Hoffman 1999; Jennings et al. 1995) and stakeholder pressures (Buysse et al. 2003; Sharma et al. 2005) to which firms respond in order to gain social legitimacy (Scott 1995). Under

this view, firms react to unavoidable societal influences inducing the organization to positively contribute to the community.

Finally, a third stream of research explains the adoption of social and environmental strategies for normative reasons, “because it is the right thing to do” (Harrison et al. 2010). At the core of this perspective is the idea that social and environmental actions are deeply grounded in moral values and are reflection of the top management’s ethical stance and a genuine attitude towards social ills.

A few studies in social and environmental accounting research (O’Dwyer 2003) and more generally in CSR literature (Maignan et al. 2002; Bansal et al. 2000; Banerjee et al. 2003; Weaver et al. 1999) have also developed quite comprehensive frameworks that in a way seem to summarize the above mentioned streams of research. Indeed, the main determinants of corporate social and/or environmental orientations identified in such models can be generally ascribed to three groups of factors: competitiveness considerations, stakeholders/institutional pressures and managers’ interests and values. For example O’Dwyer (2003) identifies three types of rationales underpinning managerial acceptance of social responsibilities: - proactive enlightened self-interest, which entails the voluntary recognition of corporate social responsibilities by companies as long as this enhances or fails to inhibit corporate economic welfare; - reactive enlightened self-interest, in which the voluntary recognition of corporate social responsibilities by companies is mainly a response to external pressures deriving from many sources such as legislation, local communities, pressure groups and the print media; and - obligation/duties, a rationale which involves a perception of corporate social responsibilities as a form of obligation or duty owed to the wider society. Similarly, Banerjee and colleagues (2003) propose public concern,

competitive advantage and top management commitment to the natural environment as important antecedents to corporate environmentalism, defined as “the recognition of the importance of environmental issues facing the firm and the integration of those issues into the firm's strategic plans” (page 106).

Due to its conceptual clarity and comprehensiveness, this study adopts Banerjee et al. (2003)'s framework as basis for the identification of the most influential motivations behind corporate adoption of social performance measurement systems, by shifting its focus of analysis from the environmental to the social dimension⁸³. Therefore, the independent variables explaining the use of SPMs in my model are:

- expected competitive advantage, defined as the degree to which social initiatives and strategies are perceived to represent a source of competitive advantage and to improve long-term profitability;
- stakeholders' concern, defined as the perceived degree of concern a company's stakeholders demonstrate toward social responsibility and ethical issues;
- top management social commitment, defined as the commitment of a company's top management team towards social initiatives and strategies.

This focus on managerial motivations, beliefs and interests, in addition to being coherent with the above mentioned models, is also consistent with the claims of several scholars holding that, when assessing a firm's decision-making in matters of CSR, it is particularly important to account for

⁸³ Another reason for adopting this framework is represented by the applicability of this study's measures, originally developed with respect to the environmental theme, to the social dimension of CSR.

managerial individual perceptions (Plaza-Úbeda et al. 2009; Jennings et al. 1995; Sharma 2000)⁸⁴.

2.2 Expected competitive advantage and use of SPMs

The search of competitive advantage, or the “business case” rationale for CSR has been repeatedly recognized as fundamental motivation behind corporate adoption of social initiatives and strategies (Wood 2010; Porter et al. 2006). Typical justifications of a business case for CSR include the value of a good reputation and stakeholder goodwill, cost reductions and operating efficiencies, better risk management, competitive advantage through product differentiation and/or premium pricing capability, reducing the threat of burdensome regulation, opening new markets, keeping employees motivated, reducing ‘campaign risk’ (being targeted by external activist groups) and enhancing the local quality of life for employee retention purposes (Wood 2010). In the environmental strategic management literature, empirical findings confirm that companies adhering to the win–win view of corporate environmentalism tend to adopt more “proactive” environmental strategies, i.e. voluntary and innovative approaches to improving their environmental performance (Aragòn-Correa et al. 2007; Aragón-Correa 1998; Sharma 2000).

⁸⁴ Indeed, the CSR arena is a particularly complex domain, in which institutional pressures drive many corporate responses (Campbell 2007) but a clear understanding of the financial effects of such responses is still missing. Indeed, in presence of competing views and contrasting empirical results concerning the relationship of corporate social performance and economic performance (Orlitzky et al. 2003; Margolis et al. 2003), managers are left with little guidance to estimate the financial effects of their social strategies. In such a setting, there is inevitably still a large room for managerial interpretations (Sharma 2000; Jennings et al. 1995).

By drawing on contingency-based arguments in management accounting research, it can be argued that this competitive advantage rationale provides a strong incentive for managers to invest in a performance measurement system that isolates and quantifies the costs, benefits, and operational outcomes of social strategies and activities. Indeed, the conventional, contingency-based approach in management accounting research assumes that management control systems are adopted to assist managers achieve some desired organizational outcomes (Chenhall 2003; Chapman 1997; Simons 2000) and, as such, need to be tailored explicitly to support the strategy of the business (Ittner et al. 1997; Langfield-Smith 1997). This need for an alignment of management control systems with organizations' strategic direction is especially advocated with respect to firms' performance measurement systems (Kaplan et al. 2006; Simons 2000; Ittner et al. 2003). Performance measurement systems, indeed, are key foundations of the management control system (Otley 1999); through them the main tasks traditionally assigned to management control systems, i.e. formulation and communication of objectives, monitoring performance through measurement and motivating employees to achieve company goals (Anthony et al. 1998), can be pursued. In the same vein, Simons (2000, page 16) affirms that "business strategy is at the root of effective performance measurement and control for two reasons. First, performance measurement and control systems provide the analytic discipline and communication channels to formalize business strategy and ensure that strategic goals are communicated through the business. Second, performance measurement and control systems are the primary vehicle to monitor the implementation of these strategies". By applying such arguments from performance measurement literature to the context under investigation, it seems then reasonable to expect social

performance measurement systems play a crucial role in ensuring that the implementation of firms' social strategies is effectively executed. With respect to the environmental dimension of CSR, recent findings from Perego et al. (Perego et al. 2009) provide support for these claims by confirming that firms with a more proactive environmental strategy rely more on performance measurement systems that systematically report EPMs.

Based on the above mentioned arguments, it can be expected that the more companies adhere to the business case rationale for social responsibility, the more they will rely on SPMs for decision-making and control, in order to make sure that their social strategies are effectively communicated and implemented through the business and that, therefore, the economic benefits expected to derive from these social responsibility initiatives actually materialize.

This leads to the following hypothesis:

H1: *There is a positive relationship between expected competitive advantage and the use of SPMs for decision-making and control.*

2.3 Stakeholders' concern and use of SPMs

Stakeholders' concern is a second, influential motivation for corporate adoption of social strategies, as recognized by a well-established stream of research in CSR management literature (Clarkson 1995; Buysse et al. 2003; Sharma et al. 2005; Jones 1995).

The stakeholder literature argues that stakeholders who are important, primary (Freeman 1984), or considered salient by managers (Agle et al. 1999) influence organizational strategies. This theoretical perspective has been widely applied within CSR management literature because it helps explain why firms voluntarily adopt social and environmental initiatives that are not required by law. For example, Clarkson (1995) argues that

transferring corporate social responsibility into business objectives is best undertaken using a stakeholder perspective - more specifically, by transferring intangible social and environmental issues into tangible stakeholders' interests. Indeed, managers are under increasing pressures from their key stakeholders (shareholders, employees, customers, suppliers, governments, local communities and environmental interest groups) to operate in a socially responsible fashion (Porter, and Kramer 2011; Porter et al. 2006; Basu et al. 2008; Orlitzky et al. 2003). Therefore, the inclusion of social responsibility issues into corporate strategies and decision-making beyond what is required by government regulation can be viewed as a means to improve a company's alignment with the growing concerns and expectations of its stakeholders. With respect to the environmental dimension of CSR, several studies empirically demonstrate the influence of stakeholders' pressures on companies' environmental strategies and initiatives (Sharma et al. 2005; Buysse et al. 2003; Henriques et al. 1999). For example, Henriques and Sadosky (1999) show that managerial perceptions of the importance of stakeholder pressures are associated with a more proactive stance toward environmental commitment by Canadian firms. In the same vein Buysse et al. (2003), using survey data from Belgian firms, find that more proactive environmental strategies are associated with a deeper and broader coverage of stakeholders, albeit the strength of this relationship appears more limited than expected. According to Banerjee et al. (2003), social pressure from activists and consumers may influence the firms' environmental strategies in two ways: first, by projecting an environmentally friendly image that expresses a company's responsibility towards the natural environment; second, by developing environmental strategies aimed at the environmentally friendly consumer segment.

By extending such findings from the environmental to the social dimension of CSR, it can be derived that stakeholders' concern for social responsibility issues represents a strong incentive for firms to integrate social criteria into their performance measurement systems, to better align their business objectives with those of their stakeholders. As such, I expect the stakeholders' concern rationale for social responsibility to be positively related to the use of SPMs for internal decision-making and control purposes. The above mentioned arguments lead to the following hypothesis:

H2: There is a positive relationship between stakeholders' concern and the use of SPMs for decision-making and control.

2.4 Top management social commitment and use of SPMs

The third influential motivation behind corporate adoption of CSR activities is represented by top management commitment (Maignan et al. 2002; Weaver et al. 1999). Indeed, in the CSR management literature there is extensive evidence for the notion that top management personal values and interests influence - and sometimes are key determinants of - corporate CSR activities (Wood 1991; Pedersen 2006; Agle et al. 1999). For example, Hemingway and Maclagan (2004) argue that "CSR can be the result of championing by a few managers, due to their personal values and beliefs, despite the risks associated with this" (page 36). Similarly, in their study of the determinants of integrated and decoupled corporate ethics programmes, Weaver et al. (1999) theorize and find that top management commitment to ethics encourages both easily decoupled initiatives (i.e. policy communications) and integrated ones (i.e. ethics-oriented performance appraisal systems). More specifically, the authors argue that ethically committed executives are likely to wish to communicate their commitment to ethics through a variety of means and thus are expected to support ethics

program communication activities, even though those activities could, in some situations, easily be decoupled. However, these executives are expected to follow through on their commitment to ethics also through more deeply embedded organizational activities whose implications are difficult to avoid, such as the explicit inclusion of ethical concerns into regular employee performance appraisals. Results from their analysis of survey and archival data support these positions.

Based on this same line of reasoning, it can be expected that a company's top management social commitment will influence its social performance measurement systems. More specifically, CSR committed managers are expected to follow through on their commitment by designing ad hoc performance measurement systems to make sure the business is operating in accordance with their social responsibility priorities. As such, I expect top management social commitment to be positively related to the use of SPMs for internal decision-making and control purposes.

The above mentioned arguments lead to the following hypothesis:

H3: There is a positive relationship between top management social commitment and the use of SPMs for decision-making and control.

2.5 Use of SPMs and social performance

As already noticed, research on the performance effects of social performance measurement systems is completely absent. Therefore, hypotheses concerning the performance effects of SPMs use were derived by extending to the social dimension under investigation results from environmental management literature (Judge et al. 1998; Melnyk et al. 2003; Klassen et al. 1999) and from the emerging literature on environmental management accounting (Burnett et al. 2008; Henri et al. 2010; Ferreira et al. 2010; Epstein et al. 2000). The first performance dimension considered in the

theoretical model is social performance. By applying to the social dimension the definition suggested by Judge et al. (1998) for the environmental dimension, social performance is defined as a firm's effectiveness in meeting and exceeding society's expectations with respect to social responsibility issues.

Prior empirical literature in the environmental management area provides some preliminary evidence regarding a positive relationship between some aspects of management control and planning systems and environmental performance. For example Judge et al. (1998) found strong support for a positive relation among the level of integration of environmental management concerns in the strategic planning process and environmental performance. Melnyk et al. (2003)'s results indicate that firms in possession of a formal environmental management system perceive a critical positive impact not only on pollution abatement but also on many other dimensions of operations performance. The study by Klassen and Whybark (1999) considered the association of management controls, the adoption of pollution prevention technologies and environmental performance finding that companies with higher reliance on management controls and pollution prevention technologies were associated to lower levels of toxic releases.

In the emerging environmental management accounting literature, also, a recent contribution by Henri et al. (2010) finds a positive relationship among eco-control - defined as the integration of environmental matters within a company's management control system - and environmental performance under certain circumstances (higher environmental exposure, higher public visibility, higher environmental concern, and larger size).

By extending to the social dimension of CSR the above mentioned findings for the environmental one, it seems reasonable to expect SPMs use to be

positively associated with social performance, as previously defined. Indeed, the use of SPMs for decision-making and control purposes (such as goal setting, capital investment decisions, performance evaluation and rewarding) allows for the integration of social concerns within organizational routines and processes. In particular, SPMs use is expected to foster social performance by assisting managers in better formulating and communicating social strategies and targets, in monitoring social performance through measurement and in motivating employees to achieve social goals (Anthony et al. 1998).

Based on the preceding discussion, the following hypothesis is formulated:

H4: There is a positive relationship between the use of SPMs for decision-making and control and social performance.

2.6 Use of SPMs and economic performance

The second performance dimension included in the model is economic performance. Considering, again, the environmental side of CSR, so far little evidence has been provided in both environmental management and environmental management accounting research to support a direct link between environmental management control and economic performance. For example, the already cited study by Judge et al. (1998) evidences a positive relationship between the level of integration of environmental management concerns in the strategic planning process and financial performance. On the contrary, the recent study by Henri et al. (2010) does not find a direct positive effect of eco-control on economic performance. Such a positive relationship was expected by extending to the environmental management control setting the more general finding from management accounting literature regarding a positive relationship between performance measurement and control systems and economic performance (Ittner et al.

1997; Ittner et al. 2003; Widener 2007a; Luft et al. 2003). In particular eco-control, similar to performance measurement systems, was expected to promote goal congruence between the individual and the organization, coordinate and communicate strategic priorities, direct managers to critical areas of concerns, improve the allocation of resources and the establishment of priorities based on organizational goals and, therefore, to foster economic performance. However, their empirical findings indicate eco-control is linked with economic performance not directly but only indirectly, through environmental performance. The authors explain this contradictory finding by arguing that: a) eco-control may not affect economic performance directly but indirectly via other levels of performance (such as, in their case, environmental performance); and that b) eco-control may also have some ‘costs’ (i.e. making the systems too complex and difficult to understand, promoting information overload, spreading agents’ efforts over too many objectives, reducing motivation by including multiple goals that are inconsistent in the short term, increasing administrative costs relative to simpler systems) that offset its ‘benefits’.

These ‘costs’ may be well present, and also amplified, with respect to the social dimension of CSR, which is even broader than its environmental counterpart⁸⁵. Therefore, given the absence of unambiguous theoretical or empirical support for predicting the relation among SPMs use and economic performance, the following nondirectional null hypothesis is formulated:

H5: The use of SPMs for decision-making and control is not associated with economic performance.

⁸⁵ Indeed, as already noticed, under the label ‘social’ a wide range of specific topics are included, such as labor practices (i.e., occupational health and safety), human rights (i.e., child labor), society (i.e., relations with local communities), product responsibility (i.e., customer health and safety).

2.7 Social performance and economic performance

Lastly, the theoretical model posits a positive relationship among social performance and financial performance. Arguments for expecting such a positive relation comes from the vast stream of studies in CSR research testing the Corporate Social Performance (CSP) – Corporate Financial Performance (CFP) link, the so called empirical CSP-CFP literature (Wood 2010). Indeed, over the last decades, management scholars have been interested in exploring the CSP–CFP link so as to justify their approval or disapproval of corporate responsibility behaviors, with mixed results. In front of raising critiques of inconclusiveness and lack of generalizability moved against such literature (McWilliams et al. 2001), two recent meta-analyses of the CSP-CFP literature were performed (Margolis et al. 2003; Orlitzky et al. 2003). Both demonstrate a consistent and positive relationship between CSP and CFP. As Orlitzky et al. (2003) conclude: “The meta-analytic findings suggest that corporate virtue in the form of social responsibility [...] is likely to pay off, although the operationalizations of CSP and CFP also moderate the positive association” (page 403). The sophisticated meta-analytic technique by Orlitzky et al. (2003) is also particularly interesting to the ends of the present study because the authors investigate differences between social and environmental performance by disaggregating the entire set of representative contributions in the CSP-CFP literature into purely social performance measures and purely environmental performance measures. When the entire meta-analytic set is divided into these two conceptualizations of CSP, findings show that the positive relationship between overall CSP and CFP is even stronger for social responsibility than for environmental responsibility.

The above mentioned arguments lead to the following hypothesis:

H6: There is a positive relationship between social performance and economic performance.

2.8 Control variables

Control variables are also included in the model. First of all, I control for size. Indeed, since previous research has found that larger firms are more likely to adopt sophisticated management accounting techniques (Bouwens et al. 2000), size is likely to affect SPMs use. Industry is also included as control variable. Indeed it can be argued that industry is an important variable driving the type and degree of external pressures organizations are facing with respect to social responsibility issues (Adams et al. 1998); thus, industry can alter organizations' responses to such issues and, consequently, also their use of SPMs for decision-making and control (Adams 2002). Performance measurement quality, i.e. the perceived quality of SPMs, is also included as control. Indeed, studies from the performance measurement systems literature (Cavalluzzo et al. 2004; Abernethy et al. 2004) find a direct relationship among performance measurement perceived quality (e.g. relevance, reliability, accuracy) and performance measurement system use. Thus, if the quality of SPMs is perceived to be particularly low, it is likely that their use is hindered. Finally, the presence of a SA8000 or OHSAS 18001 certified management system is also included as control variable.

Figure 1 provides an overview of the proposed theoretical model concerning drivers and performance effects of social performance measurement systems.

[Figure 1 about here]

2.9 Endogeneity concerns

One central issue in the interpretation of this study's results - similarly to any other cross-sectional analyses of survey-data - is whether endogeneity impairs their reliability. Specifically, in this study the two main sources of

endogeneity concerns are represented by reverse causality and potential respondent's bias (being the latter a specific manifestation of correlated omitted variable bias, with respondents' personal values and commitment towards social responsibility issues influencing both the independent and dependent variables in the model).

The first kind of endogeneity concern is addressed on a theoretical basis, i.e. by leveraging on theoretical arguments suggesting reverse causality does not represent a plausible alternative to the hypothesized relationships. Indeed, concerning the determinants of social performance measurement systems, the study's hypotheses (H1-H3) are based on the well-established stream of studies in CSR literature - reviewed in the previous paragraphs - extensively documenting how the three identified motivations influence companies' social and environmental initiatives, and thus possibly also SPMs use. While it may also be argued that this latter variable in turn influences managers' perceptions regarding the business case rationale for CSR, stakeholders' concern and even their personal commitment towards social responsibility, it seems likely that such an effect will materialize only over the very long-run. Indeed, top management beliefs, attitudes and values, being part of a company's culture (Hermalin 2007) or ethical climate (Abernethy et al. 2012), evolve only slowly, if at all (Sørensen 2002). In contrast, senior managers can change the weight placed on SPMs for decision-making or control purposes relatively easily. Thus, it seems plausible to consider expected competitive advantage, stakeholders' concern and top management social commitment as pre-determined to the purpose of this study, while any feedback relations from SPMs use are likely to materialize too slowly to be captured within the time frame of this work (Luft et al. 2003).

Coming to the effects of SPMs use, the main reverse causality concern regards probably the social performance-economic performance relationship (H6). In this respect Orlitzky et al. (2003), in their already cited meta-analysis of the CSP-CFP literature, explore in details the direction of causality among the two constructs by examining their meta-analytic data set separately for three sets of temporal associations: (a) prior CSP related to subsequent CFP; (b) prior CFP related to subsequent CSP; and (c) contemporaneous (cross-sectional) associations. Their results are consistent with a virtuous cycle between CSP and CFP with quick cycle times or concurrent bidirectionality. Indeed, both the prior CFP and subsequent CFP subsets yield identical correlations at two digits (0.29). Therefore the authors conclude that, although a positive association between CFP and lagged CSP is also supported by their analyses, this relationship “does not dominate a weaker CSP \rightarrow lagged CFP correlation and distort results [...] We can, therefore, state with some confidence that the association between CSP and lagged CFP is not negative. Moreover, the causation seems to be that CSP and CFP mutually affect each other through a virtuous cycle: financially successful companies spend more because they can afford it, but CSP also helps them become a bit more successful.” (Orlitzky et al. 2003, page 424). Based on these arguments, this study’s choice is to model social performance as causal determinant of economic performance.

With respect to the second kind of endogeneity concern (namely, potential respondent’s bias), this is instead addressed empirically in the analyses that follow, by controlling for respondent’s function (dichotomized into

CSR/Health & Safety function versus other function) as a proxy of respondent's personal commitment towards social responsibility issues⁸⁶.

3. Research method

3.1 Sample selection and data collection

Data were collected using a web-based questionnaire administered to a target sample of Italian organizations from a wide variety of industries. Survey method is the most diffused approach of data collection in extant management accounting literature and it is particularly suitable for the investigation of phenomena about which publicly data are not available (Ryan et al. 2002), as it is in my case⁸⁷. The survey was administered under the sponsorship of SDA Bocconi School of Management and of the Italian branches of two of the world's leading bodies in the field of management systems certification services - Bureau Veritas and DNV Business Assurance - who acted as 'legitimate authority' as a strategy to increase response-rate (Dillman 2000). A non-random purposive sampling strategy was applied as it was considered better suited than a fully random sampling approach given the novelty of the field under investigation. In particular, two sampling criteria were applied. First, I included companies – as listed in the sponsors' client databases - with certified management systems in order to reduce the risk of not finding empirical evidence of the phenomenon object of study, i.e. the use of SPMs for decision-making and control⁸⁸. Secondly, only

⁸⁶ More details on this robustness check are provided in the next section.

⁸⁷ Obviously, survey method is not without limitations; for some considerations about this point, refer to the final section.

⁸⁸ However, in order to increase sample size and to reduce sample selection bias as much as possible, it was also decided not to limit the target sample to companies with SA8000 or OHSAS 18001 certified management systems, but to include also companies with certified quality or environmental management systems (according to ISO 9001 and ISO 14001/EMAS standards, respectively). Thus, the decision on

companies above a hundred employees were selected because they were expected to have more sophisticated management accounting techniques (Bouwens et al. 2000; Henri et al. 2010) and therefore also more developed social performance measurement systems. A total of 443 potential respondents comprised the final target sample. It was requested that the company's CSR or Sustainability manager (or, in absence, the person most responsible for social aspects within the firm) be involved in the survey. Such a profile, indeed, was considered to be the most knowledgeable respondent about the central topic in the study, i.e. the use of SPMs. In some instances, respondents were senior officers from the CSR/Sustainability or H&S (Health & Safety) functional areas, in others they were general managers, quality, HR, manufacturing or financial managers. To control for potential respondent's bias – and particularly for the endogeneity concern that function systematically influences respondents' perceptions with regard to both the independent and dependent variables in the theoretical framework, I performed a robustness check by adding to the PLS structural model a control variable equal one if the respondent came from the CSR/Sustainability or H&S functional areas, and zero otherwise. The findings (not reported) show that: a) such control variable does not significantly influence the other variables in the model (with the exception of SPMs perceived quality); and b) results for the hypothesized paths are not affected by its inclusion in the model.

whether the issues investigated were pertinent to the company was left to the individual respondent. In this respect, the first question in the questionnaire asked whether social performance indicators were regularly measured within the companies. Respondents answering negatively to this first item were directed to a separate set of questions and were considered not eligible to the ends of the present study.

The web-survey was administered using a slightly modified version of the four-step implementation strategy suggested by Dillman (2000): a pre-notice mail to alert about the study two days before the first mailing; a first mailing containing the link to access the web-based platform for questionnaire completion; and two follow-ups (made respectively two weeks and six weeks after the initial mailing). To encourage completion of the questionnaire, participants were promised a summary of the results and assured confidentiality (Dillman 2000).

Of the 443 distributed questionnaires, 100 were received (22.6%). Of these returned questionnaires, thirteen were dismissed since the respondent declared the issues investigated were not applicable to the company⁸⁹. Moreover, eleven questionnaires with multiple missing values on dependent variables were excluded from hypothesis testing to avoid any artificial increase in relationships with independent variables (Hair et al. 2010). For the remaining sample of 76 cases, the level of randomness in missing values was tested with Little's missing completely at random (MCAR) test and the result was found acceptable ($\chi^2 = 804.9$, DF 854, and Sig. 0.884). Therefore, given that the level of missing data was acceptably low and missing data did not seem to occur in a specific non-random fashion, in a small number of other cases individual missing values were replaced with mean values (Hair et al. 2010; Chapman et al. 2009). This resulted in a complete data set of 76 responses, which provides a response rate of 17.2%. The response rate is similar to those reported in recent accounting surveys (Hall 2008; Ferreira et al. 2010; Moores et al. 2001; Widener 2007b) and it is deemed satisfactorily given the length of the questionnaire (Moores et al. 2001). However, due to

⁸⁹ On this regard, see footnote n. 88.

the relatively low response rate, I investigated the possibility of non-response bias. In particular, early and late responses were compared in paired samples of 30 and 15 using an independent samples *t*-test. Results (not reported) show that there are no significant differences on any of the study variables with the exception of the ‘strategic’ component of SPMs use, which is slightly significantly higher for late respondents as compared to early respondents⁹⁰. In addition, during some follow-up phone calls, I discussed with approximately 40 non-respondents their reason(s) for not completing the questionnaire. These reasons were mainly time pressures and receiving too many surveys, which are similar to the reasons for non-response reported in other studies (Hall 2008). These tests indicate that non-response bias does not seriously affect the results of this study.

I also estimated the extent to which common method variance affects my findings by performing two statistical tests: Harman (1976)’s one factor test and partialling out a “marker variable” (Lindell et al. 2001). According to the first test, if a substantial amount of common method variance exists in the data then either a single factor will emerge out of an exploratory factor analysis or one factor will account for the majority of the variance in the

⁹⁰ ‘Strategic’ use of SPMs is one of the two components emerged from an exploratory factor analysis on the items used to measure SPMs use, as explained in section 3.2.1. When applied to paired samples of 30, the independent samples *t*-test shows that mean strategic use of SPMs is higher for late respondents ($\bar{X} = 4.12$) compared to early respondents ($\bar{X} = 3.48$) ($t = 1.993$, $p = 0.051$). Similarly, when considering paired samples of 15, mean strategic use of SPMs is higher for late respondents ($\bar{X} = 4.13$) compared to early respondents ($\bar{X} = 3.18$) ($t = 2.095$, $p = 0.045$). This finding is somehow unexpected. Indeed, one would expect early respondents to be more interested in and committed to the topic under investigation, and thus indicating a higher use of SPMs as compared to late respondents. However, this counterintuitive result lets me conclude that any eventual non-response bias in this respect does not seriously harm my inferences, which are likely to be underestimated at worst.

measurement items used in the model. The un-rotated exploratory factor analysis using the eigenvalue-greater-than-one criterion revealed six distinct factors that accounted for 70.3% of the variance, with the first factor capturing only 29.5% of the variance in the data. According to the second test, if a variable can be identified that is theoretically unrelated to at least one other variable in a study, preferably the dependent variable, then it can be used as a marker variable in controlling for common method variance (Lindell et al. 2001). Following the approach by Elbashir et al. (2011), I used respondents' age as unrelated marker variable as a surrogate for common variance and examined the PLS structural model both with and without the marker variable. The findings (not reported) show the marker variable is not statistically significant and the original results are not affected by its inclusion in the model. Together these procedures suggest that common method bias does not seriously affect the results of this study.

Demographic information was collected from respondents regarding role, job tenure, company tenure, hierarchical level, education level, age, gender, company size (number of employees), and main industry. Table 1 reports descriptive statistics and frequencies for these variables.

[Table 1 about here]

3.2 Variable measurement

The questionnaire obtained information on the use of SPMs for decision-making and control, expected competitive advantage, stakeholders' concern, top management social commitment and social performance. Economic performance was instead measured by relying on archival data. Given the absence of established scales for several of the study variables, measurement items were newly developed by adapting instruments used in prior survey studies.

An initial survey draft was circulated among four academic scholars with substantive or psychometric expertise and was pre-tested with four professionals from the two survey sponsors and three managers (not part of the sample) for clarity, understandability, ambiguity, and face validity (Dillman 2000). The review process and the pilot test resulted in minor changes to the wording of some items and to the layout of the questionnaire. Once revised on the basis of this feedback, the questionnaire was translated into Italian by applying the back-translation procedure proposed by Behling and Law (2000). The wording of items in the questionnaire is provided in the Appendix.

The psychometric properties of the measurement scales were extensively assessed prior to including them in the PLS measurement model. In particular, after checking the factorability of items⁹¹, the design of all measurement instruments was based on the results of principal components analysis with oblique Oblimin rotations⁹², and Cronbach alpha statistics of internal reliability (Nunnally 1978). Table 2 contains an overview of the wording of items in the final analysis together with the results of the factor and reliability analysis. Descriptive statistics, based on the average scores of multi-item variables, are presented in Table 3.

⁹¹ The Bartlett test of sphericity showed that nonzero correlations existed at the significance level of 0.000 for all the variables. The Kaiser–Meyer–Olkin measures of sampling adequacy were above 0.6 in all cases (Hair et al. 2010).

⁹² According to Hair et al. (2010), the oblique rotation method is more flexible and more realistic, because the theoretically important underlying dimensions are not assumed to be uncorrelated with each other. However, Varimax rotations were also checked and found to provide identical components. Given the sample size (n. 76), an objective of obtaining a power level of 80% and the use of a 0.05 significance level, factor loadings were expected to be above 0.6 to be considered significant (Hair et al. 2010). Raw data rather than factor scores were used in the PLS analysis however (Chapman et al. 2009).

[Table 2 and Table 3 about here]

3.2.1 Use of SPMs

As already noticed, this paper explores the extent to which SPMs are used within organizations⁹³ for a wide array of different purposes pertaining to both the “decision-making” and decision-control (“decision-influencing”) roles of management accounting information (Luft et al. 2003). In this way, this paper attempts to contribute to extant performance measurement literature that tended to examine only one or few uses of performance measures (e.g. compensation) while ignoring other potential uses (Ittner et al. 2001)⁹⁴.

Given the absence of an established scale simultaneously capturing the extent to which SPMs are used by managers for both internal decision-making and control, the instrument for SPMs use was newly developed for this study by adapting to the social responsibility context items from Ittner et al. (2001),

⁹³ Indeed, this study investigates the use of SPMs at the corporate level of analysis, consistently with prior environmental management accounting literature (e.g. Henri et al. 2010; Perego et al. 2009). The corporate level of analysis is also particularly appropriate given the respondents’ mean profile. Indeed, respondents were in general members of the top-management team (as shown in Table 1, only 1.58 hierarchical levels separate, on average, respondents from their companies’ CEOs).

⁹⁴ Indeed, some studies refer to the decision-control role of management accounting information (e.g. Abernethy et al. 1995; Chenhall 1997), while other studies refer instead to its decision-making role (Bouwens et al. 2000; Gerdin 2005). Concerning the nature of the relationship between the two different uses (i.e. complementary or orthogonal), performance measurement literature provides contrasting arguments; for example, Zimmerman (2003) describes several examples of a trade-off between decision-making and control, while Drake et al. (1999) and Sprinkle (2000) lend experimental support in favor of an interdependent effect of incentive (i.e. control) systems on decision-making purposes. Given the absence of unambiguous arguments from which to motivate expectations concerning the use of SPMs for decision-making and control, in this study I make the less restrictive assumption that the two uses do not represent orthogonal constructs. Therefore, the two uses are simultaneously investigated.

Perego et al. (2009) and Gerdin (2005). The instrument consists of seven items measured over a seven-point fully-anchored Likert scale and asking the respondent to rate to what extent (ranging from 1=not at all to 7=totally) his firm uses SPMs for a variety of internal decision-making and control purposes. In particular, for decision-making, two items (namely, establishing formal strategic objectives and evaluating capital expenditures) were derived by Ittner et al. (2001) and three items (regarding product decisions, suppliers' selection and operational decisions) were adapted from Gerdin (2005)'s comprehensive list of different classes of decision-making problems for which management accounting information can be used by managers. For decision-control, one item (i.e. evaluating managerial performance) was derived by Ittner et al. (2001) and one item (incentivizing and rewarding managers) was adapted from Perego et al. (2009).

Exploratory factor analysis supported the use of only six items. One item was eliminated from the measurement list due to low factor loadings (<0.6), as suggested by Hair et al. (2010). As reported in Table 2, the results of an exploratory factor analysis with oblique Oblimin rotation⁹⁵ on the remaining six items show that the scale is bi-dimensional, with each item loading on the corresponding factor above 0.724. More specifically, the first component (53.10% of variance, $\alpha=0.844$) includes the two items related to the decision-control use of SPMs (namely, evaluating managerial performance and incentivizing and rewarding managers) and one item related to the decision-making use of SPMs (namely, establishing formal strategic objectives). The remaining three items for SPMs use, all referring to decision-making

⁹⁵ The oblique rotation method is particularly appropriate due to the theoretical dependence of the two constructs (i.e. decision-making and control) as suggested in the literature (Sprinkle 2000).

purposes (namely, evaluating and approving capital expenditures, making product decisions and taking operational decisions) load on a second component (23.43% of variance, $\alpha=0.821$)⁹⁶. Since the three items making up the first component all refer to more high-level, ‘strategic’ kinds of use, as compared to the more ‘operational’ purposes referring to the second component, the first factor is named ‘strategic’ SPMs use while the second factor is named ‘operational’ SPMs use. The Cronbach alpha statistics of internal reliability are well above the conventional lower limit of 0.7 for both factors.

However, since the scale has not been used in prior research, I performed additional tests to examine the extent to which both components converged with an alternative measure of SPMs internal use. Specifically, respondents were asked whether there were any social targets amongst the objectives formally assigned to managers within their firms (yes/no). A dichotomous variable was then obtained by coding 1 affirmative answers and 0 negative ones. I deliberately chose an alternative measure which was quite different in format (forced choice) from the seven-point Likert type scale to be consistent with the principle of maximally-dissimilar forms of ratings, urged in the literature on convergent validation (Hall 2008; Abernethy et al. 1999). The point-biserial correlation between the multi-item measure and the dichotomous measure is 0.418 ($p < 0.001$) for the strategic component of SPMs use and 0.312 ($p < 0.01$) for its operational component. This provides support for the convergent validity of the two three-item measures used in the

⁹⁶ These results provides some support for the theoretical distinction among decision-making and decision-control use of management accounting information, given that all items load on the expected factor with the exception of only one item (establishing formal strategic objectives).

study⁹⁷. Moreover, an independent samples *t*-test shows that the mean scores on both the strategic and the operational three-item scales are significantly higher for those respondents answering “yes” to the above mentioned question ($\bar{X} = 4.167$ and 4.690 , respectively) compared to those respondents answering “no” ($\bar{X} = 3.093$ and 3.933 , respectively) ($p < 0.01$). This supports the ability of the two three-item scales to distinguish between more or less intensive uses of SPMs.

3.2.2 Expected competitive advantage, stakeholders' concern and top management social commitment

The items to measure expected competitive advantage, stakeholders' concern and top management social commitment were all developed by adapting the instruments devised by Banerjee et al. (2003). Indeed, these instruments were originally developed to measure the antecedents to corporate environmentalisms; therefore, I shifted their focus from the environmental component of CSR to its social dimension.

Specifically expected competitive advantage was measured by asking respondents their agreement (ranging from 1=completely disagree to 7=completely agree) on six statements concerning the competitive advantage benefits (in term of cost savings, quality improvements and growth opportunities) perceived to derive from social initiatives and strategies. Exploratory factor analysis supported the use of only 4 items. Two items were eliminated from the measurement list due to their small communalities (<0.5), as suggested by Hair et al. (2010). The results from the exploratory factor analysis show the remaining four items load, as expected, on a single

⁹⁷ I calculated the scores for each respondent on the two three-item scales as an average of the corresponding three items.

factor, explaining 67.58% of the variation. The Cronbach alpha for the scale is 0.838.

Stakeholders' concern was measured by asking respondents their agreement (ranging from 1=completely disagree to 7=completely agree) on four statements concerning their perceptions of importance assigned by the company's stakeholders to a socially responsible corporate conduct. Exploratory factor analysis supported the use of only 3 items. One item was eliminated from the measurement list due to its small communality (<0.5), as suggested by Hair et al. (2010). The results from the exploratory factor analysis show the remaining three items load, as expected, on a single factor, explaining 65.61% of the variation. The Cronbach alpha for the scale is 0.722.

Finally, top management social commitment was measured by asking respondents their agreement (ranging from 1=completely disagree to 7=completely agree) on three statements concerning their perceptions of top management's commitment to and support for social responsibility initiatives. The results of an exploratory factor analysis show that the three-item scale is unidimensional, with each item loading on the same factor above 0.95. This factor explains 93.21% of the variation. The Cronbach alpha for the scale is 0.963.

3.2.3 Social and economic performance

Social performance is measured using a perceptual instrument developed by adapting to the social dimension the instrument originally devised by Judge and Douglas (1998) to measure environmental performance. In particular, four questions asked the respondent to rate its firm's performance in 2010, compared to other competitors across the industry, on several social dimensions (such as compliance with social regulations and limitation of

social impact beyond compliance). Answer categories ranged from 1=much worse to 7=much better. The results of an exploratory factor analysis show that the four-item scale is unidimensional, with each item loading on the same factor above 0.75. This factor explains 69.27% of the variation. The Cronbach alpha for the scale is 0.851. As several authors argue, in terms of consistently providing valid and reliable performance assessment, neither objective nor subjective measures are superior (Henri et al. 2010; Chenhall 2003). However, in order to establish the validity of the answers provided by the respondents, the mean score of the items was compared with an objective measure of social performance - 2010 injury rate (number of work-related injuries divided by total number of hours actually worked) – collected through a specific question positioned elsewhere in the questionnaire⁹⁸. The Pearson correlation coefficient is negative (-0.26) and slightly significant ($p=0.05$), thus providing some support for the validity of the subjective measure.

Economic performance is instead measured by relying on archival data. Prior environmental studies have used both accounting-based and market-based measures to represent economic performance. For example, Spicer (1978) used both accounting-based and market-based measures (profitability and the price-earnings ratio). King et al. (2002) used accounting-based (ROA and Tobin's q), while Al-Tuwajri et al. (2004) preferred a market-based metric (annual stock returns). In this study, since the majority of firms in the sample

⁹⁸ I decided to collect precise quantitative data on this specific social performance dimension because, even if it represents a limited aspect of a company's overall social performance, it is certainly one of its most important facets. Moreover, injury rate emerged as the social performance indicator most frequently measured by firms during the pre-tests of the questionnaire with several professionals and practitioners in the field.

is not publicly quoted, I used return on capital employed (ROCE), a standard accounting measure of operating profitability calculated by dividing EBIT by net operating assets. ROCE data were collected from the AMADEUS database⁹⁹. However, the PLS structural model was also tested with alternative measures of economic performance (return on total assets and cash flow divided by operating revenues), obtaining similar results (not reported). These checks provided evidence for the robustness of the identified relationships.

3.2.4 Control variables

Size is measured using the natural log of the number of employees (Henri et al. 2010; Perego et al. 2009). Industry is measured as a dummy variable distinguishing among manufacturing (US SIC codes 20-39 inclusive) and non-manufacturing firms, since companies in consumer goods markets are considered as acting in a more ‘socially sensitive’ area and may therefore face particular demands to operate in socially responsible ways (Adams et al. 1998). Companies’ industrial codes were also derived from the AMADEUS database. The perceived quality of SPMs is measured through a single-item instrument derived from Abernethy et al. (2004). Finally, the presence of a certified social management system is measured through a dummy variable based on the respondents’ answers to a question asking them whether the majority of their firms’ facilities is certified according to the SA8000 or OHSAS 18001 standards.

⁹⁹ The AMADEUS database, developed by the company Bureau Van Dijk Electronic Publishing, contains financial data about, among others, companies operating in Italy.

3.3 Partial Least Squares regression

PLS regression analysis was used to test the research model and hypotheses¹⁰⁰. PLS is a component-based structural equation modeling (SEM) technique that simultaneously tests the psychometric properties of the scales used to measure the constructs (i.e., measurement model) and examines the strength of the relations between the constructs (i.e., structural model) (Chin 1998). Over the last few years, a growing number of accounting studies using PLS have been published (Elbashir. M.Z. et al. 2011; Chapman et al. 2009; Hall 2008; Chenhall 2005). PLS was chosen for this study because it is suitable for causal-predictive analysis of complex relationships with multiple dependent variables, when there is scarcity of prior theoretical knowledge, and/or when the sample size is relatively small (Chin et al. 1999; Hair et al. 2010)¹⁰¹; it also makes minimal data assumptions. In this study, PLS was used to test reflective links between constructs and measures (indicators) meaning that indicators are believed to reflect the unobserved, underlying construct, with the construct giving rise to

¹⁰⁰ I use Smart PLS 2.0 (Ringle et al. 2005).

¹⁰¹ Chin's (1998) rule of thumb suggests that the sample size for a PLS study should be 5 to 10 times for either: 1) the largest number of formative indicators for a particular construct in the measurement model; or 2) the largest number of structural paths directed at a particular construct in the structural model. In this study, the dependent latent variables with the largest number of structural paths directed at them are the two components (i.e. strategic and operational) of SPMs use, each one with seven independent variables (namely, expected competitive advantage, stakeholders' concern, top management social commitment and the four control variables). Thus, the sample size of 76 cases satisfies this requirement. In addition, I also employed power analysis to investigate the issue in more details (Chin et al. 1999; Abernethy et al. 2010). In particular, under the assumption that the SPMs use regression is a regular OLS regression (Abernethy et al. 2010) and setting α to 5% (two-tailed) and power to 80%, my sample is able to detect a true effect size of 0.2, which can be considered a medium effect size according to the operational definition suggested by Cohen (1988).

the observed measures (Chapman et al. 2009; Chenhall 2005). As already noticed, PLS comprises a measurement model and a structural model, which are estimated simultaneously. However, to maximize the interpretability of both models, the PLS model is typically interpreted in two stages: first, the reliability and validity of the measurement model is assessed, and then the structural model is assessed. As such, the results from the measurement model are presented first followed by an examination of the hypothesized relations between the constructs.

4. Results

4.1 Measurement model

The preliminary analyses of uni-dimensionality and reliability of multi-item constructs (i.e., the factor analysis and Cronbach alphas) were reported and presented above (see Table 2). As Table 4 shows, the output from PLS in relation to the measurement model confirms these preliminary tests by showing high (over 0.70) loadings of all items on their respective latent variables. As sole exception, item6 for expected competitive advantage displays a item loading of 0.687, which however can be considered acceptable (Hulland 1999).

[Table 4 about here]

In addition, the high composite reliability measures for all latent variables (i.e. from 0.83 to 0.98) confirm the previously presented alpha scores by demonstrating acceptable reliability (Nunnally 1978).

Convergent validity of constructs is assessed by examining the average variance extracted (AVE) statistics. As the last row of Table 4 shows, the AVE for each variable is well above 0.50, which demonstrates adequate convergent validity (Chin 1998; Hair et al. 2010).

Finally, concerning discriminant validity, Table 5 shows that the square roots of the AVEs (diagonal) are all greater than the respective correlations between constructs (Chin 1998). This indicates that all measures have appropriate discriminant validity.

[Table 5 about here]

An additional test of discriminant validity assesses each measurement item to ensure that it has a higher loading on its assigned factor than on the other factors (Chin 1998). As Table 4 demonstrates, each measurement item loads higher on the appropriate construct than on any other construct, providing additional support as to the discriminant validity of the measures.

Overall, the results from the PLS measurement model indicate that each construct exhibits satisfactory reliability and validity.

4.2 Test of hypotheses

I estimate a structural model in PLS to test the hypotheses. PLS produces standardised β -statistics for each path coefficient, which are interpreted in the same way as in OLS regression. As PLS makes no distributional assumptions, bootstrapping (1000 samples with replacement) is used to evaluate the statistical significance of each path coefficient (Chin 1998)¹⁰².

Since the objective of PLS is to maximise variance explained rather than fit, the overall incidence of significant relationships between constructs and the explained variance of the dependent variables (i.e. the R^2 measures) are used to evaluate the PLS model instead of goodness-of-fit measures (Chin 1998; Chenhall 2005). Another assessment of the structural model involves the model's capability to predict, as expressed by the Stone-Geisser's Q^2

¹⁰² Statistical significance is determined using the reported original PLS estimates and bootstrapped standard errors.

measure of predictive relevance¹⁰³. The R^2 and Q^2 for each endogenous variable, together with path coefficients and the corresponding t -statistics, are shown in Table 6 and 7 and, graphically, in Figure 2.

[Table 6 and Table 7 about here]

As shown in Fig. 2, the research model tests the extent to which expected competitive advantage, stakeholders' concern and top management social commitment are variously associated with the two components (i.e., strategic and operational) of SPMs use (H1-H3), the extent to which these two components are associated with social and economic performance (H4 and H5) and the extent to which social performance is associated with economic performance (H6).

[Figure 2 about here]

Overall, the results suggest the model has good predictability. As Table 6 and Table 7 show, the coefficients for 7 out of 11 hypothesized paths in the model are statistically significant at the 0.05 level or better. The results also indicate that nearly 22 percent of SPMs strategic use, 25 percent of SPMs operational use, 23 percent of social performance and 12 percent of economic performance are explained by the model. In addition, Stone-Geisser's Q^2 is larger than zero for all endogenous latent variables, providing support for the

¹⁰³ Stone-Geisser's Q^2 is the predominant measure of predictive relevance (Henseler et al. 2009) and it can be measured, by using blindfolding procedures, only for endogenous latent variables that have a reflective measurement model operationalization. The Stone-Geisser criterion postulates that the model must be able to provide a prediction of the endogenous latent variable's indicators. The technique represents a synthesis of function fitting and cross-validation. As Chin (1998) points out, "the prediction of observables or potential observables is of much greater relevance than the estimator of what are often artificial construct-parameters" (p.320). Notwithstanding its prominence in management and marketing PLS research (Henseler et al. 2009), I was unable to find any mention of the Q^2 measure in accounting research.

predictive relevance of the corresponding explanatory variables (Henseler et al. 2009).

In particular, H1 predicts that there is a positive relationship between expected competitive advantage and the use of SPMs for decision-making and control. The results shown in Figure 2 and Table 6 strongly support the hypothesis. Indeed, expected competitive advantage - i.e. the belief that social strategies and initiatives lead to economic benefits and improve long-term profitability – is positively and significantly associated with SPMs use both for its strategic component (0.260, $p < 0.05$) and for its operational component (0.424, $p < 0.01$), the link being stronger for the latter. These results support the prediction that the ‘business case’ rationale for social responsibility is a major determinant behind social performance measurement systems adoption and use.

H2, by making reference to CSR management research applying insights from stakeholder theory to the study of corporate social and environmental initiatives, predicts that there is a positive relationship between stakeholders’ concern and SPMs use. As shown in Figure 2 and Table 6, this hypothesis is not supported. Indeed, the association between stakeholders’ concern and SPMs use is negative and statistically insignificant for both components. These results indicate that, contrary to what expected, stakeholders’ pressures towards social responsibility do not represent an effective mechanism in stimulating the integration of social and ethical concerns into companies’ decision-making and control processes. This evidence seems to provide some partial support for the ‘window dressing’ concerns which have diffused over

the last few years against corporate social commitments and disclosures (Adams 2004; Moerman et al. 2005)¹⁰⁴.

H3 predicts that there is a positive relationship between top management social commitment and the use of SPMs for decision-making and control. The results shown in Figure 2 and in Table 6 support the hypothesis. Indeed, top management social commitment is positively and significantly associated with SPMs use both for its strategic component (0.300, $p < 0.05$) and for its operational component (0.215, $p < 0.05$). These results support the belief that a company's top management commitment towards social responsibility is an influential determinant behind social performance measurement systems' adoption and use, nearly as much as the 'business case' motivation.

H4 predicts that there is a positive relationship between SPMs use and social performance. As shown in Figure 2 and Table 7, also this hypothesis is supported with a positive and significant relationship, both for the strategic component of SPMs use (0.219, $p < 0.05$) and for its operational component (0.275, $p < 0.01$). This finding supports the argument that the integration of social and ethical matters within a company's management control system effectively assists managers in formulating and communicating social strategies and targets, monitoring social performance through measurement and motivating employees to achieve social goals.

H5 is formulated in the null form and predicts that SPMs use is not associated with economic performance. The results shown in Figure 2 and Table 7 fail to reject this null hypothesis. Indeed, the association between SPMs use and economic performance is close to zero and statistically

¹⁰⁴ In the final section, these unexpected findings are discussed more in depth.

insignificant for the strategic component of SPMs use, whereas it is negative but still statistically insignificant for its operational component.

Finally, H6 predicts that there is a positive relationship between social performance and economic performance. As shown in Figure 2 and Table 7, the results strongly support the hypothesis (0.290, $p < 0.01$) and thus provide additional confirmatory evidence for the idea that corporate social performance and financial performance are positively associated (Margolis et al. 2003; Orlitzky et al. 2003). Taken together, the results for H4, H5 and H6 echo – for the social dimension of CSR - Henri et al. (2010)'s findings concerning a full mediating effect of environmental performance on the link between 'eco-control' and economic performance. Indeed, consistently with their results, Figure 2 indicates that SPMs use is related to economic performance only indirectly through social performance.

5. Discussion and conclusions

This study aimed at improving our understanding of the determinants and performance effects of the performance measurement systems adopted by companies to manage their social responsibility activities. Specifically, a structural model was tested using PLS to examine how the three main motivations for CSR - namely expected competitive advantage, stakeholders' concerns and top management social commitment - are variously associated with the use of SPMs for decision-making and control and how such use is in turn associated with social and economic performance.

Concerning the determinants of SPMs use, the results show that, as hypothesized, expected competitive advantage is strongly associated with SPMs use for decision-making and control purposes. This result confirms the idea that the 'business case' for CSR is the most influential motivation behind corporate adoption of CSR initiatives and strategies (Porter et al.

2006; Plaza-Úbeda et al. 2009). Similarly, top management social commitment is also rather strongly associated with SPMs use. This finding reinforces those claims emphasizing the importance of a strong and committed leadership in bringing about social improvements (Hemingway et al. 2004; Agle et al. 1999). So far, these results parallel very closely those of my study on the determinants and performance effects of environmental performance measurement systems (Lisi 2012). An interesting difference, instead, emerges with regard to the relationship among stakeholders' concern and SPMs use, which appears to be insignificant in the context of the present study. Indeed, in the environmental paper, stakeholders' concern is found to be significantly associated with the use of environmental performance measures for decision-making and control, suggesting that - in the environmental domain - pressures from the institutional environment lead companies to substantively integrate environmental concerns into their business processes and operations. In the present study - i.e. in the social responsibility domain - it seems instead that stakeholders' pressures are not functional in fostering a substantive integration of social and ethical concerns into companies' processes. This unexpected result can be better interpreted by making reference to the general findings from social and environmental accounting research on the drivers of social and environmental external reporting. Indeed, as already noticed, accounting researchers have so far extensively investigated the determinants of social and environmental disclosures (for noticeable reviews, cf. Gray et al. 1995; Gray 2002; Adams 2002; Owen 2008; Deegan et al. 2007). Legitimacy theory in particular has been widely applied as main interpretive focus (Deegan 2002; Owen 2008; Adams et al. 1998). The result has been that, more often than not, corporate social and environmental disclosure strategies have been linked to

legitimizing intentions (Deegan 2002), with the partial and selective nature of such reporting being also variously documented (Moerman et al. 2005; Adams 2004). Indeed, social and environmental disclosures have been described as impression management techniques (Neu et al. 1998) or ‘window dressing’ phenomena aimed at maximizing perceptions of legitimacy but with little, if any, effects on the real work of organizations (Larrinaga-Gonzalez et al. 2001; O’Dwyer 2003, 2005). This study’s finding that stakeholders’ concern does not significantly influence the use of SPMs for internal decision-making and control somehow complements and reinforces the above mentioned ‘window dressing’ arguments. Indeed, it is supportive of the view that companies are mainly reacting to increasing external pressures concerning CSR through façade activities (such as the publication of a CSR report) aimed at restoring or enhancing their image and legitimacy but without substantive effects on their internal business processes. Future research could explore the motivations behind the differential influence that stakeholders’ concern exerts on companies’ performance measurement systems in the environmental domain as opposed to the social responsibility one. One possible explanation for the insignificant association among stakeholders’ concern and SPMs use could be related to the peculiarities of the social domain, and specifically to the lower degree of ‘measurability’ of social initiatives and performance as opposed to their environmental counterparts. Indeed, corporate environmental activities (e.g. investments in state-of-the-art technologies to abate emissions) and performance (e.g., toxic emissions levels, materials consumption, waste produced) can be measured quite precisely and therefore can also be observed and judged by external stakeholders relatively easily. For example, several models and tools have been developed for computing the

environmental footprint (the carbon footprint, water footprint and so on and so forth) of companies, some of which are even available for free on the web. On the contrary, nothing similar is available with respect to companies' social responsibility activities and performance, which are less prone to exact definition and quantification¹⁰⁵ and thus also less observable by external audiences. Therefore, it seems reasonable to expect that stakeholders' pressure represents a relatively weak incentive towards the integration of social responsibility concerns into companies' everyday business processes, since stakeholders are not likely to easily distinguish - and thus appreciate - a substantive commitment to social responsibility on the part of companies. Future work could investigate these initial thoughts more in depth.

Coming to the performance effects of social performance measurement systems, the results show that, as expected, SPMs use is significantly associated with social performance. This finding echoes my environmental study (Lisi 2012) and, more generally, recent evidence from environmental management accounting research (Henri et al. 2010). Specifically, this result confirms the important role played by social performance measurement systems in helping managers better facing their companies' social responsibilities. Indeed, the use of SPMs for decision-making and control purposes (such as goal setting, capital investment decisions, performance evaluation and rewarding) allows for the integration of social concerns within organizational routines and processes. It supports effective resource management and corporate social performance. Indeed, by clarifying and communicating vision and strategy, SPMs use directs managers to critical

¹⁰⁵ In this respect, it is exemplary the case of the Enron which, according to Basu and Palazzo (2008) "looked like an exceptional corporate citizen, with all the corporate social responsibility and business ethics tools and status symbols in place" (page 123).

areas of social matters, communicates the associations between employees' actions and social goals, improves the allocation of resources, and encourages the establishment of priorities based on such social goals. Finally, the results also provide confirmatory evidence for an indirect relationship among SPMs use and economic performance through social performance. In this regard it is interesting to notice that, consistently with the findings from the meta-analysis by Orlitzky et al. (2003), the link among social performance and economic performance (0.290, $p < 0.01$) is stronger than the path among environmental performance and economic performance as emerged from the environmental study (0.211, $p < 0.05$).

These findings need to be interpreted in light of the limitations of this study. First, as previously noticed, a new instrument was developed to measure SPMs use for decision-making and control and all other instruments were derived by extending to the social dimension of CSR measurement scales originally developed with respect to the environmental area. Although the instruments exhibited satisfactory psychometric properties, they could be refined and further validated by future research. Second, even if I discussed in some details the identification strategy underlying the direction of proposed relationships, no clear evidence of causality can be established with survey-data obtained from cross-sectional analyses. Rather the evidence must be considered consistent with theoretical arguments and predicted hypotheses. Third, the survey data report managers' perceptions and, therefore, may not accurately represent actual business practice – with particular regard to the extent of SPMs use - and actual social performance. Fourth, although tests seem to indicate non-response does not seriously harm my inferences, the relatively low response rate is a limitation of the study. Finally, the study's focus of analysis – i.e. social performance measurement

systems – should be taken into consideration when interpreting the findings. Indeed, performance measurement systems represent only one component of firms' overall “control package” (Abernethy et al. 1996). While this study's particular focus was motivated by the fact that performance measurement systems are key foundations of companies' overall management control systems (Otley 1999) and they are particularly suitable to the investigation of a wide variety of decision-making and control problems for which management accounting information can be used by managers, it nevertheless excludes other types of management control systems, and in particular more informal ones such as social (Ouchi 1979) or personnel (Merchant et al. 2003) controls.

Notwithstanding these various limitations, this study is believed to contribute valuable theoretical and empirical insights to both researchers (in different disciplines) and practitioners.

Concerning contributions to research, this investigation firstly contributes to social and environmental accounting research by shifting the focus of analysis from external reporting to internal performance measurement systems, as suggested by recent calls urging more management accounting research in the area (Owen 2008; Gray 2002). In particular, the study is among the first to investigate both the determinants and the performance effects of social performance measurement systems. In so doing, it also contributes to the ‘window dressing’ debate in social and environmental accounting research (Adams 2004; Larrinaga-Gonzalez et al. 2001; O’Dwyer 2003, 2005; Moerman et al. 2005) by showing that, in the social responsibility domain, external pressures towards CSR are not sufficient in ensuring the integration of social and ethical concerns into companies' decision-making and control processes. In addition, by showing that there is

a positive relationship among a company's social performance and its bottom line, this investigation contributes to the CSP-CFP literature in CSR research (Margolis et al. 2003; Orlitzky et al. 2003).

This study is also of practical significance for management accountants, CSR managers, top management in general and other professionals in the field of CSR/Sustainability. In particular, it provides empirical support for the business case rationale for CSR and thus encourages managers to adopt effective strategies and initiatives aimed at improving their companies' social performance as a way to contribute to corporate economic well-being. The use of SPMs for internal control is shown to represent an example of such effective mechanisms. The study's findings concerning the determinants of SPMs use have highly relevant implications for academia, too. Indeed the two most influential determinants of SPMs use emerging from this work, namely top management perceptions about the business case for CSR and its commitment towards social responsibility, depend to a large extent on our efforts as researchers and teachers. Therefore, ever more convincing empirical evidence on the business case for CSR and more attention to the inclusion of social and environmental accounting courses into universities' and business schools' programs are needed in order to contribute shaping management's attitudes towards CSR and, therefore, to incentivize the diffusion of appropriate social performance measurement systems leading to enhanced corporate social performance. This study also opens up avenues for future research. In particular, as already noticed, it could be interesting to investigate in details the reasons why the stakeholders' concern rationale is not a significant determinant of SPMs use, contrary to what observed with respect to the environmental domain. In this regard, it could be also useful to adopt a more fine-grained operationalization of stakeholders' concern,

distinguishing among different categories of stakeholders (cf., for example, Buysse et al. 2003). Such an analysis could be interesting to investigate whether the (overall insignificant) link among the stakeholders' concern rationale and SPMs use turns out to be significant at least as far as some specific stakeholders' categories are considered.

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Figure 1 – Theoretical model (paths for control variables not shown)

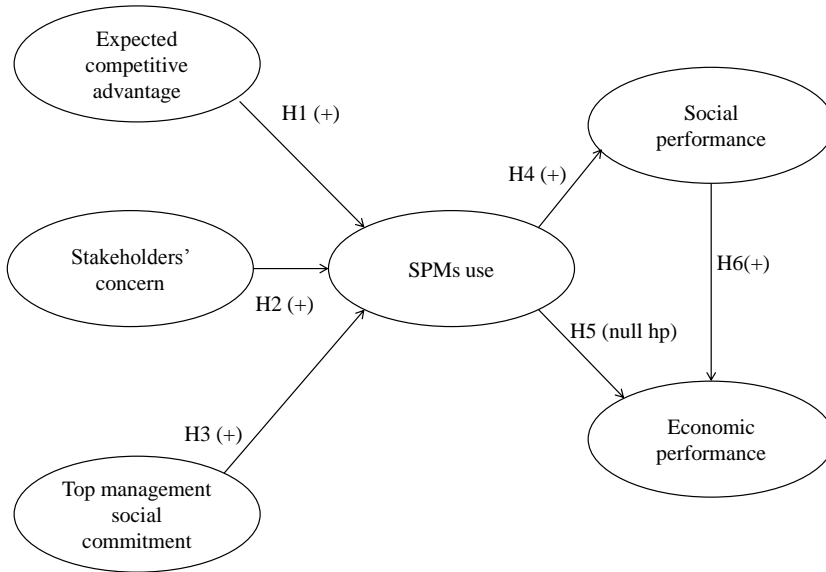


Table 1 – Demographic variables and sample composition (n = 76)

Panel A: Descriptive statistics for demographic variables				
Variable	Minimum	Maximum	Mean	SD
Job tenure (years)	1	25	8.49	5.61
Company tenure (years)	2	34	12.54	8.11
Age (years)	30	62	44.19	8.01
Hierarchical level ^a	0	5	1.58	0.91
Company size (n. of employees)	75	79,941	3,610.84	1,4361.90
Panel B: Respondents by functional area			Frequency	%
CSR/Health and Safety			30	42.3
General management			9	12.7
Quality			18	25.4
HR			7	9.9
Other			7	9.9
Panel C: Respondents by education			Frequency	%
High school			24	32.4
University degree			31	41.9
Master degree			15	20.3
Doctorate degree			4	5.4
Panel D: Respondents by gender			Frequency	%
Male			45	60.8
Female			29	39.2
Panel E: Respondents by industry category (US SIC codes)			Frequency	%
Agriculture, mining and construction (01-19)			8	10.53
Manufacturing (20-39)			39	51.32
Transportation and utilities (40-49)			6	7.89
Wholesale and retail (50-59)			6	7.89
Services (70-89)			17	22.37

^a Measured by asking respondents how many hierarchical levels separate them from their companies' CEOs.

Table 2 – Principal component analysis (Oblimin rotated) and Cronbach alphas (n = 76)

Factors and Cronbach alphas	Factor loadings	
	I	II
Panel A: SPMs use		
I. SPMs use: strategic ($\alpha = 0.844$, Eigenvalue= 3.19, 53.10 % of variance)		
Evaluate managers' performance (Item1)	0.920	-0.088
Incentivize and reward managers (Item2)	0.927	-0.015
Establish formal strategic objectives (Item 3)	0.724	0.206
II. SPMs use: operational ($\alpha = 0.821$, Eigenvalue= 1.41, 23.43 % of variance)		
Evaluate and approve capital expenditures (Item 4)	0.181	0.765
Make product decisions, e.g.: product price, product mix (Item 5)	0.140	0.841
The daily management and operational decisions, e.g.: assess make-or-buy alternatives, assess the manufacturing process to use (Item 7)	-0.186	0.916
Panel B: Expected competitive advantage ($\alpha = 0.838$, Eigenvalue = 2.70, 67.58% of variance)		
Being socially conscious can lead to substantial cost advantages for our firm (Item1)	0.777	
Our firm can enter lucrative new markets by adopting social strategies (Item 4)	0.827	
Our firm can increase market share by reducing the social impact of our current products (Item 5)	0.924	
Reducing the social impact of our firm's activities will lead to a quality improvement in our products and processes (Item 6)	0.750	
Panel C: Stakeholders' concern ($\alpha = 0.722$, Eigenvalue = 1.97, 65.61% of variance)		
Our stakeholders feel that social responsibility is a critically important issue facing the world today (Item 1)	0.807	
Our customers are increasingly demanding healthier and safer products and services (Item 3)	0.714	
Our stakeholders expect our firm to be socially responsible (Item 4)	0.899	
Panel D: TM social commitment ($\alpha = 0.963$, Eigenvalue = 2.80, 93.21% of variance)		
The top management team in our firm is committed to social issues (Item 1)	0.969	

Our firm's social efforts receive full support from our top management (Item 2)	0.957
Our firm's social strategies are driven by the top management team (Item 3)	0.970
Panel E: Social performance ($\alpha = 0.851$, Eigenvalue = 2.77, 69.27% of variance)	
Complying with social regulations (i.e. health and safety, human rights) (Item 1)	0.870
Limiting social impact beyond compliance (Item 2)	0.885
Preventing and mitigating social crises (i.e. work-related fatal injuries, incidents of discrimination, incidents of human rights violations across the supply chain) (Item 3)	0.817
Educating employees and the public about social issues (i.e. health and safety, human rights) (Item 4)	0.750

Table 3 – Descriptive statistics for variables (n = 76)

<i>Panel A: Descriptive statistics (for scale variables)</i>				
Variable	Mean	SD	Theoretic al range	Actual range
SPMs use: strategic	3.79	1.23	1.00-7.00	1.00-6.67
SPMs use: operational	4.44	1.14	1.00-7.00	2.00-7.00
Expected competitive advantage	5.01	1.03	1.00-7.00	2.75-7.00
Stakeholders' concern	5.52	0.86	1.00-7.00	2.67-7.00
Top management commitment	5.62	1.32	1.00-7.00	1.00-7.00
Social performance	5.53	0.81	1.00-7.00	3.75-7.00
Economic performance	0.13	0.17	NA	0.001-0.896
Size (ln n. employees)	5.95	1.49	NA	4.30-11.29
SPMs perceived quality	5.04	1.25	1.00-7.00	1.00-7.00
<i>Panel B: Frequencies (for dummy variables)</i>				
Variable	Frequency		%	
Industry = 1 (manufacturing)	39		51.32	
Industry = 0 (non manufacturing)	37		48.68	
Certification = 1 (certified social management system)	36		48.00	
Certification = 0 (no certified social management system)	39		52.00	

Table 4 – Item Loadings^a and Cross Loadings; Composite Reliability and AVE statistics (*n* = 76)

	SPMs use: strategic	SPMs use: operational	Expected competitive advantage	Stakeholders' concern	Top management commitment	Social performance	Economic performance	Size	Industry	SPMs perceived quality	Certification
SPMs use: strategic											
Item1	0.914	0.266	0.291	0.126	0.284	0.329	0.091	0.245	-0.190	0.155	-0.002
Item 2	0.931	0.323	0.282	0.095	0.252	0.258	-0.022	0.281	-0.021	0.101	-0.085
Item 3	0.756	0.414	0.141	0.057	0.218	0.143	-0.030	0.182	-0.135	0.114	0.043
SPMs use: operational											
Item 4	0.401	0.794	0.190	0.012	0.060	0.201	-0.242	-0.080	0.147	0.016	-0.095
Item 5	0.429	0.899	0.441	0.180	0.166	0.241	-0.121	-0.031	0.020	0.100	-0.085
Item 7	0.166	0.881	0.294	0.112	0.236	0.387	-0.109	-0.116	0.052	0.341	-0.089
Expected competitive advantage											
Item 1	0.272	0.250	0.788	0.402	0.272	0.241	0.174	0.134	-0.161	0.089	-0.064
Item 4	0.316	0.361	0.872	0.374	0.133	0.185	0.077	0.216	-0.131	0.229	0.008
Item 5	0.213	0.328	0.913	0.405	0.101	0.106	0.199	0.117	-0.038	0.139	0.093
Item 6	0.066	0.242	0.687	0.274	0.085	0.049	0.264	0.098	-0.133	0.074	0.161
Stakeholders' concern											
Item1	0.019	0.126	0.395	0.711	0.482	0.279	-0.018	0.136	-0.215	0.212	0.276
Item 3	0.111	0.140	0.334	0.862	0.305	0.278	0.000	-0.009	-0.086	0.389	0.121
Item 4	0.149	-0.046	0.374	0.790	0.478	0.327	0.046	0.274	-0.099	0.368	0.335

Tesi di dottorato "Exploring the design and functioning of management control systems for CSR: three essays"

di LISI IRENE ELEONORA

discussa presso Università Commerciale Luigi Bocconi-Milano nell'anno 2013

La tesi è tutelata dalla normativa sul diritto d'autore (Legge 22 aprile 1941, n.633 e successive integrazioni e modifiche).

Sono comunque fatti salvi i diritti dell'università Commerciale Luigi Bocconi di riproduzione per scopi di ricerca e didattici, con citazione della fonte.

	SPMs use: strategic	SPMs use: operational	Expected competitive advantage	Stakeholders' concern	Top management commitment	Social performance	Economic performance	Size	Industry	SPMs perceived quality	Certification
Top management commitment											
Item1	0.313	0.220	0.206	0.426	0.974	0.412	-0.007	0.202	-0.206	0.360	0.258
Item 2	0.228	0.199	0.193	0.556	0.954	0.407	-0.018	0.170	-0.233	0.479	0.246
Item 3	0.290	0.139	0.124	0.444	0.970	0.408	0.038	0.154	-0.274	0.409	0.246
Social performance											
Item1	0.245	0.203	0.125	0.187	0.307	0.845	0.137	-0.086	-0.088	0.058	0.104
Item 2	0.227	0.240	0.095	0.333	0.436	0.872	0.199	0.042	-0.245	0.254	0.121
Item 3	0.279	0.341	0.160	0.365	0.369	0.828	0.139	-0.058	-0.132	0.360	0.092
Item 4	0.224	0.315	0.235	0.284	0.290	0.782	0.197	-0.026	-0.220	0.321	0.040
Economic performance	0.023	-0.169	0.196	0.004	0.004	0.203	1.000	0.064	-0.144	0.039	-0.008
Size	0.276	-0.091	0.181	0.109	0.183	-0.036	0.064	1.000	-0.289	0.121	0.268
Industry	-0.128	0.075	-0.137	-0.159	-0.244	-0.210	-0.144	-0.289	1.000	-0.172	-0.120
SPMs perceived quality	0.142	0.206	0.175	0.412	0.426	0.311	0.039	0.121	-0.172	1.000	0.195
Certification	-0.026	-0.103	0.044	0.259	0.259	0.106	-0.008	0.268	-0.120	0.195	1.000
COMPOSITE RELIABILITY	0.903	0.894	0.890	0.832	0.977	0.900	NA ^b	NA ^b	NA ^b	NA ^b	NA ^b
AVE	0.758	0.738	0.672	0.624	0.933	0.693	NA ^b	NA ^b	NA ^b	NA ^b	NA ^b

^a All loadings reported in this table are statistically significant at $p < 0.001$.

^b Composite reliability and AVE will only be suitable to use for multi-item constructs.

Table 5 – Inter-Construct Correlations and Square Root of AVE statistics^a (n = 76)

	SPMs use: strategic	SPMs use: operational	Expected comp. adv.	Stakeholders' concern	TM commit.	Soc. perf.	Eco perf.	Size	Industry	SPMs perceived quality	Certif.
SPMs use: strategic	0.871										
SPMs use: operational	0.363	0.859									
Expected comp. adv.	0.286	0.367	0.820								
Stakeholders' concern	0.112	0.127	0.449	0.790							
TM commitment	0.290	0.194	0.182	0.487	0.966						
Soc. perf.	0.294	0.336	0.188	0.358	0.423	0.832					
Eco perf.	0.023	-0.169	0.196	0.004	0.004	0.203	1.000				
Size	0.276	-0.091	0.181	0.109	0.183	-0.036	0.064	1.000			
Industry	-0.128	0.075	-0.137	-0.159	-0.244	-0.210	-0.144	-0.289	1.000		
SPMs perceived quality	0.142	0.206	0.175	0.412	0.426	0.311	0.039	0.121	-0.172	1.000	
Certification	-0.026	-0.103	0.044	0.259	0.259	0.106	-0.008	0.268	-0.120	0.195	1.000

^a Diagonal elements are the square roots of the average variance extracted statistics. Off-diagonal elements are the correlations between the latent variables calculated in PLS. AVE will only be suitable to use for multi-item constructs.

Table 6 – PLS structural model for the determinants of SPMs use: path coefficients, t -statistics, R^2 and Q^2 ($n = 76$)

Paths from	Paths to	
	SPMs use: strategic	SPMs use: operational
Expected competitive advantage	0.260 (1.989)*	0.424 (3.246)**
Stakeholders' concern	-0.151 (1.154)	-0.174 (1.238)
Top management commitment	0.300 (2.164)*	0.215 (1.917)*
Size	<i>0.228</i> <i>(2.171)*</i>	<i>-0.140</i> <i>(1.507)</i>
Industry	<i>0.011</i> <i>(0.138)</i>	<i>0.134</i> <i>(1.320)</i>
SPMs perceived quality	<i>0.033</i> <i>(0.413)</i>	<i>0.173</i> <i>(1.441)</i>
Certification	<i>-0.143</i> <i>(1.438)</i>	<i>-0.113</i> <i>(1.362)</i>
R^2	0.215	0.245
Stone-Geisser's Q^2	0.138	0.167

Each cell reports the path coefficient (t-value).

Bold style denotes hypothesized paths, while italic style denotes control paths.

* and ** denote significance at the 5 and 1 percent levels using a one-tailed test for hypotheses with predicted sign and a two-tailed test for non-directional hypotheses (i.e. control paths).

Table 7 – PLS structural model for the performance effects of SPMs use: path coefficients, t -statistics, R^2 and Q^2 ($n = 76$)

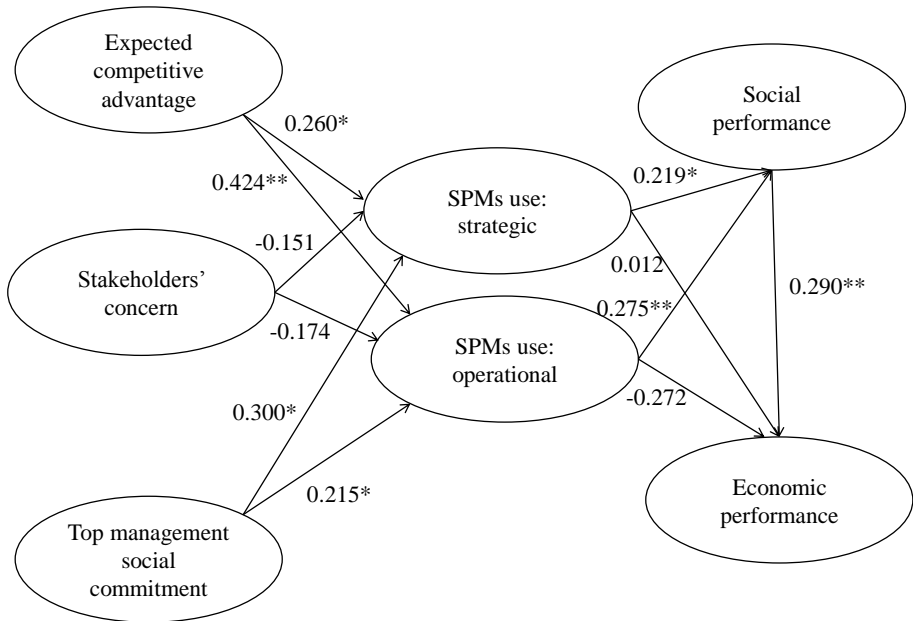
Paths from	Paths to	
	Social performance	Economic performance
SPMs use: strategic	0.219 (2.096)*	0.012 (0.168)
SPMs use: operational	0.275 (2.383)**	-0.272 (1.724)
Social performance	-	0.290 (3.192)**
Size	<i>-0.183</i> <i>(1.536)</i>	<i>0.054</i> <i>(0.745)</i>
Industry	<i>-0.237</i> <i>(2.364)*</i>	<i>-0.056</i> <i>(0.635)</i>
Certification	<i>0.161</i> <i>(1.588)</i>	<i>-0.088</i> <i>(0.973)</i>
R^2	0.230	0.117
Stone-Geisser's Q^2	0.156	0.176

Each cell reports the path coefficient (t-value).

Bold style denotes hypothesized paths, while italic style denotes control paths.

* and ** denote significance at the 5 and 1 percent levels using a one-tailed test for hypotheses with predicted sign and a two-tailed test for non-directional hypotheses (i.e. H5 and control paths).

Figure 2 – PLS structural model (paths for control variables not shown)
($n = 76$)



* and ** denote significance at the 5 and 1 percent levels using a one-tailed test for hypotheses with predicted sign and a two-tailed test for non-directional hypotheses (H5)

Appendix: Main survey items

I. Use of SPMs (1=not at all, 7=totally)

Explanatory statement: “The aim of this section is to collect information on the extent to which social performance indicators are used within your firm for different purposes. The adjective social is related to: labor practices (i.e., occupational health and safety), human rights (i.e., child labor), society (i.e., relations with local communities), product responsibility (i.e., customer health and safety). Please, indicate to what extent your firm uses social performance indicators for each of the following purposes:”

- | | |
|-------|---|
| Item1 | Evaluating managerial performance |
| Item2 | Incentivizing and rewarding managers (e.g.: determining salary increases, annual bonus and/or career advances) |
| Item3 | Establishing formal strategic objectives (or goals) |
| Item4 | Evaluating and approving capital expenditures |
| Item5 | Making product decisions (e.g.: product price, product mix, new product development) |
| Item6 | Defining standards for the selection/retention of external suppliers (DROPPED) |
| Item7 | The daily management and operational decisions (e.g.: assessing make-or-buy alternatives, assessing the manufacturing process to use) |

II. Expected competitive advantage (1=completely disagree, 7=completely agree)

Explanatory statement: “Indicate your agreement on the following statements:”

- Item1 Being socially conscious can lead to substantial cost advantages for our firm
- Item2 Our firm has realized significant cost savings by experimenting with ways to reduce the social impact of our products and processes (DROPPED)
- Item3 By regularly investing in research and development on healthier and safer products and processes, our firm can be a leader in the market (DROPPED)
- Item4 Our firm can enter lucrative new markets by adopting social strategies
- Item5 Our firm can increase market share by reducing the social impact of our current products
- Item6 Reducing the social impact of our firm's activities will lead to a quality improvement in our products and processes

III. Stakeholders' concern (1=completely disagree, 7=completely agree)

Explanatory statement: "Indicate your agreement on the following statements:"

- Item1 Our stakeholders feel that social responsibility is a critically important issue facing the world today
- Item2 The public is very concerned about social problems (i.e. work-related injuries, human rights violations, corruption) (DROPPED)
- Item3 Our customers are increasingly demanding healthier and safer products and services
- Item4 Our stakeholders expect our firm to be socially responsible

IV. Top management social commitment (1=completely disagree, 7=completely agree)

Explanatory statement: “Indicate your agreement on the following statements:”

- Item1 The top management team in our firm is committed to social issues
- Item2 Our firm's social efforts receive full support from our top management
- Item3 Our firm's social strategies are driven by the top management team

V. Social performance (1=much worse, 7=much better)

Explanatory statement: “Rate your firm’s overall performance in 2010, compared to other competitors across the industry, on each of the following objectives:”

- Item1 Complying with social regulations (i.e. health and safety, human rights)
- Item2 Limiting social impact beyond compliance
- Item3 Preventing and mitigating social crises (i.e. work-related fatal injuries, incidents of discrimination, incidents of human rights violations across the supply chain)
- Item4 Educating employees and the public about social issues (i.e. health and safety, human rights)

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