



Translating environmental motivations into performance: The role of environmental performance measurement systems



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ABSTRACT

Although corporate environmentalism has achieved great momentum and the literature has examined both its motivations and performance outcomes, relatively little is known about the specific managerial processes whereby companies may translate their motivational factors into improved performance. In this respect, the environmental accounting literature suggests the introduction of specific control mechanisms such as environmental performance measurement systems. Yet, in the environmental domain, driving performance through measurement may be less straightforward than often realized because of various technical and motivational challenges. To examine further the theoretically questionable role of performance measurement in the environmental context, this study proposes a model in which the use of environmental performance measures for a variety of decision-making and control purposes mediates the links between firms' environmental motivations and corporate performance. The results from a survey of 91 Italian companies provide support for the hypothesized relationships, while offering several insights into the differential strength of business-oriented, stakeholders-oriented and ethical motivations and their implications for environmental performance measurement systems. The paper concludes with some avenues for future research revealed by this work.

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1. Introduction

Over recent decades, companies in every sector have been confronted with increasing pressures to control and improve their operations' impacts on the natural environment (Burnett and Hansen, 2008). Corporate environmental proactivity, in turn, is claimed to be associated with favorable internal outcomes such as reduced waste and discharges, increased efficiency, reduced energy and resource costs, lower risk and better reputation, and

reduced compliance costs (Sharma and Vredenburg, 1998). As managers recognize these advantages, they in many cases commit substantial resources toward environmental protection initiatives (Roewer, 2008).

To date, environmental management research has extensively examined environmental motivations as a basic trigger of organizations' environmental proactivity. Those motivations can basically reflect a mix of business-oriented, stakeholders-oriented and ethical motivations (Bansal and Roth, 2000). However, this literature is relatively silent on which specific managerial processes may translate such motivational factors into improved performance (Wisner et al., 2006).

The management control literature has started to analyze this issue by discussing the potential role of specific

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environmental performance measurement and control systems in supporting companies' environmental initiatives (Gond et al., 2012). As a particular application of management control systems, they are expected to foster the translation of companies' environmental motivations into improved performance by better aligning organizational and behavioral structures with firms' objectives and underlying value drivers (Henri and Journeault, 2010). More specifically, it is suggested that environmental performance measurement and control systems are important to: identify emerging threats and opportunities, facilitate environmental decision-making and coordination by managers, promote goal and value congruence between the individual and the organization, and facilitate learning (see, e.g., Arjaliès and Mundy, 2013; Henri and Journeault, 2010; Virtanen et al., 2013).

Yet, these alleged positive effects might be less straightforward than often realized, for at least two reasons. First, similar to performance measurement systems in general, environmental performance measurement systems are also fraught with commensuration problems, which may hamper their effectiveness. Indeed, the technical challenges implied in the measurement of many environmental impacts – such as those associated with carbon emissions or water use – are well recognized (Unerman and Chapman, 2014). If environmental performance measures are perceived to have low controllability or technical validity, their use – particularly when linked with rewarding – can have dysfunctional effects (Virtanen et al., 2013). Second, the environmental domain represents a particularly challenging decision-making setting, in which ethical motivations play a crucial role (Bansal and Roth, 2000), but they may sometimes conflict with economic considerations (Figge and Hahn, 2013). In such a context, the introduction of ad hoc systems aimed at quantifying the environmental actions of an organization and at formally integrating the environmental concerns into the organizational routines may even be counterproductive, as the risk exists of undermining employees' intrinsic motivation to work toward environmental goals (Virtanen et al., 2013). Based on such arguments, it therefore seems possible to question the supposedly unproblematic role of environmental performance measurement systems as a mechanism for translating companies' environmental motivations into performance.

To address this puzzle, this paper develops a comprehensive model in which the use of Environmental Performance Measures (EPM) for a wide variety of decision-making and control purposes acts as an intervening variable among business motivations, perceived stakeholders' pressures and top management's environmental commitment on the one hand, and environmental and economic performance on the other hand. The theoretical perspective underlying this model leverages the concept of environmental performance measurement systems as tools to deal with various forms of uncertainty (Davila, 2000). Building on Galbraith (1973), the different types of uncertainty under consideration in this study refer to the differences between the amount of information required to meet the various environmental concerns and expectations held by managers and external stakeholders and the amount of information already possessed by the

organization. By supplying the information required to deal with uncertainty related to the environmental implications of a range of decision-making and control contexts (e.g., capital expenditures' approval, suppliers' selection or product decisions), EPM address Galbraith's (1973) information gaps and foster the translation of companies' environmental motivations into improved performance.

The model is tested using survey data from a sample of 91 Italian firms. The empirical results, based on Partial Least Squares (PLS) structural equation modeling (Chin, 1998), confirm the hypothesized mediation role for the use of EPM. In particular, the use of EPM for decision-making and control appears to partially mediate the relationship among firms' business motivations and environmental performance and to fully mediate the links between the other two motivations (i.e., perceived stakeholders' pressures and top management's environmental commitment) and environmental performance. The results also show that EPM use positively influences economic performance indirectly through environmental performance.

This study contributes to the literature by developing insights into the link between environmental motivations and performance. More specifically, it investigates the processes through which companies may translate their motivational factors into enhanced performance. The use of EPM for decision-making and control is shown to represent an effective mechanism in that respect. In so doing, this paper also contributes to the performance measurement literature, in which the empirical evidence supporting the link between performance measurement systems and economic performance is limited and conflicting (see, e.g., Franco-Santos et al., 2012; Melnyk et al., 2014). This study's results contribute to this stream of research by suggesting that the influence of a performance measurement system on economic performance is mediated by one intervening variable (environmental performance) that depicts the operational consequences of the actions induced by the system. Finally, this work reinforces the initial insights on the economic effects of environmental performance measurement and control systems (Henri et al., 2014; Henri and Journeault, 2010; Wisner et al., 2006) by using objective – rather than subjective – economic performance data.

The remainder of the paper is organized as follows. The next section develops the theoretical model. Section 3 clarifies the research method, including sample selection and variable measurement. This is followed by a 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 framework and hypotheses

2.1. Environmental motivations, corporate performance and environmental performance measurement systems

The literature provides various explanations for corporate environmental proactivity, reflecting a combination of business-oriented, stakeholders-oriented and ethical motivations (see, e.g., Banerjee et al., 2003; Bansal and Roth, 2000). Some authors adopt an economics-based paradigm

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