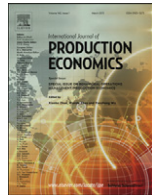


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Turning sustainability into action: Explaining firms' sustainability efforts and their impact on firm performance

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ABSTRACT

This research seeks to shed more light on how manufacturing firms adjust their strategy according to the sustainability challenge. Strategic decisions are influenced by strategic long-term considerations, which take into account aspects that lie within firms' boundaries and beyond. Therefore, the first step of this paper is to operationalise the sustainability challenge by identifying relevant drivers for sustainability that firms are exposed to. Second, we develop a framework showing which dimensions affect decisions concerning a sustainability move and which dimensions are affected by these decisions. A sustainability move can contain initiatives emphasising the adoption of new manufacturing technologies, the development of new, sustainable products or the integration of green practices into the supply chain. Next to the influence of sustainability drivers, we explain firms' decisions concerning a sustainability move with past performance, firm size and current level of sustainability action. Depending on whether initiatives are led by strategic or ad-hoc decisions, firms have to explore new knowledge and/or exploit existing knowledge to realise competitive advantage. The goal of this research is to provide an explanation of how decisions of sustainability moves are motivated and which dimensions in the firm are affected by these moves.

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1. Introduction

The sustainability challenge has increasingly become a key-item on the management agenda of manufacturing firms since global warming and the finiteness of important resources, for instance, have caused different stakeholder groups to adjust their expectations on firms. Wu and Pagell state that "the need for environmental protection and increasing demands for natural resources are forcing firms to reconsider their business models and restructure their supply chain operations" (Wu and Pagell 2011: 577). Growing interest in sustainability has been found in both academia and industry (Linton et al., 2007), especially in the cross-disciplinary field of green supply chain management (GSCM) defined as "integrating environmental concerns into the inter-organisational practices" (Sarkis et al., 2011: 3). From a firm's perspective, sustainability can be defined as meeting the needs of a firm's direct and indirect stakeholders without compromising its ability to meet the needs of future stakeholders (Dyllick and Hockerts, 2002). The notion of sustainability is rather broad in nature as it entails the three pillars of the triple bottom line,

namely environmental, social and economic aspects (Hart and Milstein, 2003). We recognise the importance of the triple bottom line for manufacturing firms, however, we focus on the ecological aspect, which we refer to as sustainability in this article. While the focus rests on the ecological aspect, the economic aspect is assumed to be accounted for in any given activity that firms undertake as their main goal is to generate profits and to grow. In line with the notion that all three aspects are integrated in the triple bottom line (e.g., Dyllick and Hockerts, 2002; Hart and Milstein, 2003), the ecological aspect has an impact on the social aspect as well. For instance, successful measures to reduce emissions at a manufacturing site have a positive impact on the quality of life of the wider community in the neighbourhood. Vice versa, the social aspect (while it is regarded important in its own right) has only a limited impact on the ecological aspect. Therefore, this research does not focus on the social aspect explicitly but solely on the ecological aspect. The interrelations between the three pillars of the triple bottom line are not emphasised in this research. The dominant debate regarding the manufacturing industry's environmental footprint, the likelihood of this trend continuing as well as significant business opportunities that might arise for manufacturing firms (in the form of eco-efficiency and resulting cost-savings, for instance) are the reasons for this emphasis.

Developments in the sustainability arena have significant implications on the strategic decision-making process of the firm as the sustainability challenge requires the revision of current management practices. Managers have to take into account latest

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developments in the market context of the firm, assess the competences of the firm and anticipate further developments to define strategy (Schweiger et al., 1986; Iaquinto and Fredrickson, 1997; Ferrier, 2001). Especially manufacturing firms are affected as manufacturing processes are energy intensive and consume significant amounts of resources. Numerous papers investigated the relationship between environmental efforts of a firm and its effects on performance and found mixed results (e.g. Hart and Ahuja, 1996; Anstine, 2000; Jacobs et al., 2010). On the one hand, studies investigating the relationship between environmental efforts and financial performance, measured as stock market performance, predominantly found a positive relationship (Hart and Ahuja, 1996; Klassen and McLaughlin, 1996; Jacobs et al., 2010). On the other hand, studies focusing on the relationship between sustainability efforts and the consumers' willingness-to-pay (WTP) found no positive relationship (Anstine, 2000) or even a negative relationship (Luchs et al., 2010) meaning that consumers value sustainable products less than non-sustainable products. The literature on sustainability provides limited answers to the questions why certain firms adopt sustainability management practices while others do not and under which circumstances firms can realise competitive advantage by the adoption of sustainable practices (e.g., Delmas and Toffel, 2004; Etzion, 2007; Rivera-Camino, 2007). Our assumption is that the answer can be found in different dimensions that drive the development of the firm as well as different moderating effects like the past performance of the firm: Whether firms initiate a higher focus on sustainability is determined by past performance as past success results in greater strategic persistence even after radical changes in the market (Anstine, 2000). In contrast, unsatisfying performance leads to re-evaluation of past and current patterns of business and therefore provides motivation for strategic change (Lant et al., 1992; Ferrier, 2001). To the best of our knowledge, there is no descriptive model, which supports decision-making of firms facing a sustainability challenge by linking all relevant dimensions in a transparent way. So far, it is not clear how managers should handle the various ambiguous facets of the sustainability challenge in order to turn them into action. Furthermore, it is not clear how firms can control the relevant stock of knowledge, which is necessary to realise sustainable activities. Prior work on knowledge management has pointed out the importance of knowledge exploration and exploitation (e.g., March, 1991; Gupta et al., 2006; Jansen et al., 2006; Lichtenthaler and Lichtenthaler, 2009). Interestingly, the knowledge perspective has not been used so far to explain mixed results in the relationship between sustainability efforts and performance.

To address the illustrated gaps, we first show possible initiatives firms can engage in to address the sustainability challenge (i.e. product-, process- and supply-chain-related) and explain the decision-making within the firm with the literature on rational-comprehensive strategy development. In doing so, the topic of decision-making is analysed as a response to the sustainability challenge from a managerial perspective. Taking into account various drivers, management is ultimately responsible for the firm's sustainability decisions in order to maintain or increase competitive advantage. We use past performance, firm size and the current level of environmental action as moderators to explain differences in the level of sustainability efforts a firm undertakes. The construct "level of sustainability effort" is used to evaluate the volume of a sustainability move, the duration of the move, the complexity of the move, and the unpredictability of a move in sustainability issues in order to consolidate single decisions into an integrated construct. Following Ferrier's (2001) notion of "attack", we label actions or initiatives undertaken in order to address sustainability as "sustainability move". If looking at the business environment of a given industry, efforts to become more competitive can be understood as winning a campaign against relevant

competitors. There is a risk that a competitor moves first, which provides that firm with the first mover advantage. By moving into the market environment with a new sustainability initiative, a firm forms the rules for the market environment and, when successful, forces competitors to follow the given direction. With a successful sustainability move, a firm has gained at least a temporary competitive advantage. Furthermore, we illustrate relevant knowledge-related capabilities of the firm to explain how the decisions regarding sustainability need to be implemented to generate competitive advantage. By doing so, we provide fundamental work for future research on sustainability to overcome shortcomings of today's results.

Thus, this study makes theoretical as well as managerial contributions. First, it operationalises the sustainability challenge by defining the relevant drivers of sustainability. By listing and explaining drivers holistically, we want to raise the awareness of practitioners and academics as to how they might be influenced by changing environmental characteristics. Decision makers typically have blind spots (Zajac and Bazerman, 1991), although literature suggests that decision comprehensiveness is related to performance (Atuahene-Gima and Li, 2004). By reducing those blind spots with regard to sustainability, we aim to convert managers' limited perceptions of the most salient sustainability drivers into a more objective perception that takes all drivers into account holistically.

Second, this paper provides an explanation of decision-making with emphasis on sustainability by resorting to the decision-making literature. We have not come across conceptual frameworks which comprehensively present relevant drivers of sustainability and indicate the link to the strategic decisions of manufacturing firms. Past performance, firm size and the current level of environmental action are crucial for decision-making and determine the outcome of such decisions (Lant et al., 1992; Audia et al., 2000; Ferrier, 2001), because the ability to execute certain strategic decisions is influenced by those factors. To implement the decisions, firms can take action that is of a strategic, radical nature with a long-term perspective. Otherwise, firms take an incremental approach and implement ad-hoc steps to improve current business processes with a rather short-term perspective. The knowledge perspective completes our explanatory framework. In order to implement sustainability efforts, firms have to explore and/or exploit knowledge, depending on the ad-hoc or strategic character of the action. Organisational knowledge reflects the view of how resources should be used in order for the firm to benefit (Smith et al., 2005).

2. Decision-making regarding sustainability

This paper aims to explain why certain firms engage in strategic initiatives in support of sustainability while others do not. We use the literature on strategic process research to explain the phenomena in strategic decision-making. Strategic decisions are defined as "important, in terms of the actions taken, the resources committed, or the precedents set" (Mintzberg et al., 1976: 246). Those decisions are "infrequent decisions made by the top leaders of an organisation that critically affect organisational health and survival" (Eisenhardt and Zbaracki 1992: 17). In our understanding, decisions on how to deal with the sustainability challenge have the characteristics of being strategic. Therefore, the literature on strategic decision-making as one aspect of strategic process research can explain why firms interpret drivers of sustainability differently and consequently start diverging strategic initiatives.

2.1. Strategic decision-making

Strategic decisions not only have a major impact on the future of a firm, they are also characterised by a high degree of complexity,

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