Research article

'Too-much-of-a-good-thing'? The role of advanced eco-learning and contingency factors on the relationship between corporate environmental and financial performance

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ABSTRACT

Inspired by the natural-resource-based view (NRBV) theory, we attempt to shed light on a controversy which has been persistent over the last decade, concerning the relationship between corporate environmental performance (CEP) and corporate financial performance (CFP). Using the 'too-much-of-a-good-thing' (TMGT) concept, which suggests that "too much can be worse than too little," we link mixed results and consider the roles of advanced eco-learning and contingency factors in influencing the CEP-CFP relationship. Based on a sample composed of ISO 14001 certified companies in Indonesia, and analyzing the data using consistent Partial Least Squares (PLSc), we found that: the CEP-CFP relationship follows an inverted U-shape; advanced eco-learning is a significant predictor of the CEP-CFP relationship, meaning that organizations able to develop higher eco-learning capability will be better able to identify the ideal boundaries of investment in environmental performance without reducing their financial performance; and that contingency factors such as environmental strategy and firm size have a significant role in influencing the CEP-CFP relationship. The study's limitations, implications for practitioners and a future research agenda are also detailed.

1. Introduction

The environmental issues faced by society have never been so intensely discussed (Christ and Burritt, 2017; Journeault, 2016; Vastola et al., 2017), as evidenced by the Paris agreement (COP21)—a continuation of the Kyoto protocol—which concluded that every country has the same responsibility to reduce carbon emissions, conserve forests, and increase renewable energy use. As such, companies are beginning to take responsibility for environmental issues and to manage their environmental performance to achieve competitive advantage (Hart and Dowell, 2011; Journeault et al., 2016; Lu and Taylor, 2016; Russo and Fouts, 1997). However, recent debate has not yet reached a resolution as to whether or not improvements in environmental performance (CEP) will be followed by a corresponding rise in financial performance (CFP) (Beurden and Gossling, 2008; Brammer and Millington, 2008; Dixon-Fowler et al., 2013; Grewatsch and

Kleindienst, 2015). For example, Molina-Azorín et al. (2009), in their literature review on CEP-CFP, found mixed results and a need to keep exploring this complex relationship.

CEP can be defined as the result of a company's environmental management, which includes use of natural resources, waste disposal, greenhouse gas emissions and water consumption, while CFP can be defined as the economic results derived from the interconnectedness of attributes, actions, and environment. On the one hand, achieving better CEP involves additional costs, such as risk management or extra funding for capital, operations and energy, which in turn leads to a decrease in CFP. On the other hand, improved CEP can lead to better access to markets and product differentiation, which increase CFP (Ambec and Lanoie, 2008; Lankoski, 2008; Stanwick and Stanwick, 1998).

Although much research has been conducted on the CEP-CFP relationship, the discussion remains mixed and confusing (Grewatsch and

Kleindienst, 2015; Trumpp and Guenther, 2017; Ullmann, 1985). Several studies using linear modeling have variously found positive relationships (Journeault, 2016; Russo and Fouts, 1997; Waddock and Graves, 1997), non-significant relationships (Al-Tuwaijri et al., 2004; Henri and Journeault, 2010; Wagner, 2015), and negative relationships (Qi et al., 2014; Tan et al., 2017; Vastola et al., 2017). Other studies using non-linear modeling have found U-shaped relationships (Barnett and Salomon, 2012; Trumpp and Guenther, 2017), inverted U-shaped relationships (Brammer and Millington, 2008; Fujii et al., 2013; Wagner and Blom, 2011) and bidirectional relationships (Martínez-Ferrero and Frías-Aceituno, 2015; Testa and D'Amato, 2017). As Pierce and Aguinis (2013) argue, such inconsistent results arise because of the 'too-much-of-a-good-thing' (TMGT) effect on the CEP-CFP relationship. The TMGT effect is caused by a favorable antecedent/predictor reaching a turning point after which its relationship with the desired result/outcome ceases to be linear, and becomes nonlinear (Pierce and Aguinis, 2013; Vergauwe et al., 2017). Specifically, the relationship between CEP and CFP is expected to change as the value of this particular predictor varies, so that it also serves as a moderator in both relationships.

In this article, we argue that previous research focuses too much on the CEP-CFP relationship, and that there is an opportunity to explore the influence of other concepts on this relationship. In the context of this work, understanding of the CEP-CFP relationship is furthered by adding contingency factors (e.g., firm size, industry type, and environmental strategy) and advanced eco-learning to the classic CEP-CFP dynamic. We argue that the literature on CEP-CFP has provided inconsistent results regarding the validity of the relationship (Lu and Taylor, 2016; Trumpp and Guenther, 2017; Ullmann, 1985; Wang and Sarkis, 2017). This diversity of results on the link between CEP and CFP may have arisen due to variables that we further explore in this research. Additionally, the advance represented by the natural-resource-based view (NRBV) theory, as stated by Hart and Dowell (2011), also calls for further investigation of the relationships between advanced eco-learning, CEP and CFP (Guenther et al., 2016). Here, we emphasize that advanced eco-learning acts as an antecedent to the CEP-CFP relationship, provides additional explanatory power and constitutes a key element in influencing it. The purpose of this study is therefore to investigate how the impact of TMGT and the roles of both contingency factors and advanced eco-learning bridge the understanding gap in CEP-CFP relationships in the Indonesian context.

In this work, the concept of advanced eco-learning is anchored in the concept of organizational learning. In order to understand organizational learning, we adopt the perspective of Kloot (1997), for whom 'organizational learning is the process of changing the organization to fit the changed environment'. We argue that organizational learning concerning environmental issues is a topic best suited to firms that adopt advanced and pro-active environmental management measures (Epstein and Roy, 1997). Additionally, advanced eco-learning can enhance firms' performance (Sánchez-Triana and Ortolano, 2001). In this work, advanced eco-learning is derived from the works cited, and deals with the extent to which firms are aware of some of the most compelling contemporary environmental issues, such as climate change, waste management and best practice in business sustainability.

While Indonesia has not been properly studied in terms of the CEP-CFP relationship, and thus presents a valuable opportunity, the relationship may also be affected by national culture (Vastola et al., 2017). It is therefore important to keep investigating different countries in order to build up robust knowledge on CEP-CFP (Albertini, 2013). By exploring the Indonesian context, our findings add a new perspective to the state-of-the-art literature. Moreover, previous studies which have found an inverted U-shape for the CEP-CFP relationship (Fujii et al., 2013; Wagner and Blom, 2011) analyzed either the context of developed countries (e.g. Japan and Sweden) or the context of high profile (e.g. high profitability or technology-based) companies. It is thus relevant to explore the reality of different country and company contexts in order to meaningfully compare such results.

Our work contributes to the literature on this topic by deepening insights into development theory. Primarily, our study extends the understanding of the CEP-CFP relationship by using the meta-theory of TMGT (Pierce and Aguinis, 2013; Vergauwe et al., 2017). Although several previous studies have tested this model using similar concepts (Trumpp and Guenther, 2017), their results have been inconsistent. For example, Wagner and Blom (2011) and Fujii et al. (2013)find an inverted U-shaped CEP-CFP relationship, while Trumpp and Guenther (2017) find a U-shaped relationship using the 'too-little-of-a-good-thing' (TLGT) concept. Our study uses the TMGT concept to further explore the previous findings of Wagner and Blom (2011) and Fujii et al. (2013) by adding evidence from an emerging economy – Indonesia. In doing so, we also explore the perspective proposed by Lankoski (2008), who found the CEP-CFP relationship to be quadratic (inverted U-shaped).

The remainder of this article is organized as follows. The next section presents the relevant theoretical background and development of hypotheses, and is followed by our research method design. Next, we present and discuss our empirical results, and provide implications which may be useful for both academics and practitioners.

2. Theoretical background and development of hypotheses

The recent debate on the CEP-CFP relationship has reached one important conclusion; namely, that this relationship is non-linear (Barnett and Salomon, 2012; Fujii et al., 2013; Trumpp and Guenther, 2017; Wagner and Blom, 2011). It is also established that the relationship is important to answering critical questions as to whether "it pays to be green" or "it costs to be green", as put forward in linear-based modeling research (Brammer et al., 2006; Russo and Fouts, 1997; Stanwick and Stanwick, 1998; Waddock and Graves, 1997). The progress of such CEP-CFP research is here supported by the idea of TMGT, which forms the basic philosophical foundation to address the controversy surrounding such research (Pierce and Aguinis, 2013; Vergauwe et al., 2017). The TMGT principle states that "too much of any good thing is ultimately bad", and has become the forerunner in research re-examining the CEP-CFP relationship. However, for a better understanding of the CEP-CFP relationship, the impact of previously omitted variables, such as contingency factors and advanced eco-learning, should also be considered, as we acknowledge and utilize herein (see Beurden and Gossling, 2008; Dixon-Fowler et al., 2013; Grewatsch and Kleindienst, 2015; Lu and Taylor, 2016; Ullmann, 1985). The following sections will explain in more detail the theoretical model and hypotheses proposed in our study, which are illustrated in Fig. 1.

2.1. It pays to be green or it costs to be green?

Ever since Porter and Linde (1995) and Hart (1995) proposed hypotheses suggesting the use of environmental management to achieve competitive advantage, support for such propositions has both increased and been challenged. It can be shown by the corroboration of many studies that an increase in CEP will be followed by an increase in CFP, indicating a positive correlation between the two (Beurden and Gossling, 2008; Dixon-Fowler et al., 2013; Henri et al., 2017; Journeault, 2016; Russo and Fouts, 1997). The basic logical argument behind this positive relationship is that pressure for firms to become greener has increased, for example in the case of the ratification of COP21 for many countries in the world, including Indonesia. This environmental regulation promotes the adoption of environmentally friendly technologies and strategies aimed at achieving efficiency, which ultimately improves CEP and CFP together as a whole (Pondeville et al., 2013; Porter and Linde, 1995). More specifically, companies concerned with CEP will have increased legitimacy and meet stakeholder expectations (Pondeville et al., 2013; Sundin and Brown, 2017), thereby fostering positive corporate image, tax reduction