



*Citation for published version:*

Iatridis, K & Kesidou, E 2018, 'What drives substantive versus symbolic implementation of ISO 14001 in a time of economic crisis? Insights from greek manufacturing companies', *Journal of Business Ethics*, vol. 148, no. 4, pp. 859–877. <https://doi.org/10.1007/s10551-016-3019-8>

*DOI:*

[10.1007/s10551-016-3019-8](https://doi.org/10.1007/s10551-016-3019-8)

*Publication date:*

2018

*Document Version*

Peer reviewed version

[Link to publication](#)

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**In press.**

**Journal of Business Ethics**

**DOI: 10.1007/s10551-016-3019-8**

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# **What Drives Substantive versus Symbolic Implementation of ISO 14001 in a Time of Economic Crisis? Insights from Greek Manufacturing**

## **Companies**

**Abstract:** This paper analyses the role of external pressures, internal motivations and their interplay, with the intention of identifying whether they drive substantive or instead symbolic implementation of ISO 14001. The context is one of economic crisis. We focus on Greece, where the economic crisis has weakened the country's institutional environment, and analyse qualitatively new interview data from 45 ISO 14001-certified firms. Our findings show that (a) weak external pressures can lead to a symbolic implementation of ISO 14001, as firms can defend their legitimacy without incurring the costs of internalization in the local market; (b) weak external pressures can lead to substantive implementation of ISO14001 when firms have strong internal motivations seeking to strategically differentiate from competitors in international markets. Firms internalize ISO 14001 so as to restore their legitimacy and reputation in foreign markets and stimulate their competitiveness; and (c) strong internal motivations pave the way for companies to stimulate their competitiveness by enhancing their efficiency, as some companies might strengthen their position in the local market by implementing ISO 14001 substantively. The contribution of this paper to the literature on ISO14001 internalization lies in refining existing theory on the importance of internal motivations for the substantive implementation of ISO 14001 in the context of economic crisis. Additionally, this paper extends current theory by challenging studies that dismiss the importance of external pressures. We argue that the intensity of external pressures influences the internalization of ISO 14001, but propose that this relationship might not be linear.

**Keywords:** ISO 14001 · Environmental management · Motivations · Internalization · Economic crisis · Greece.

## **Introduction**

Despite the exponential growth of ISO 14001 certification (ISO 2013), the adoption of the standard does not always result in improved environmental performance by certified firms (Barla 2007; King et al. 2005; Nawrocka and Parker 2009). Recent research shows that this is because firms often implement the standard in a symbolic way that is decoupled from business practices (Aravind and Christmann 2011; Gavronski et al. 2008). This phenomenon has led to a growing number of studies that attempt to understand the implementation process of ISO 14001 by considering the external and/or internal motivations of firms (Boiral 2011; Zailani et al. 2012).

‘External motivations’ refers to firms adopting an ISO 14001 certificate as a result of outside pressures, while ‘internal motivations’ refers to the internal managerial behaviour of a firm (Liu et al. 2010). Studies focusing on external pressures have not clearly concluded whether these pressures induce firms to commit fully to the standard’s requirements or not (Boiral 2007; Castka and Prajogo 2013). In contrast, scholars who focus on internal motivations seem to agree on their importance in driving substantive implementation of ISO 14001 (Heras-Saizarbitoria et al. 2011; Guoyou et al. 2012).

The aim of this article is to analyse not only the factors driving ISO 14001 internalization, but also their interplay, in a time of economic crisis. Previous studies have not fully engaged with the many issues that affect the interplay between external pressures and internal motivations, and the impact of these issues upon the internalization of ISO 14001. However, understanding this relationship could enhance knowledge of the ISO 14001 implementation processes, as the intensity of external pressures can influence managers’ motivations for implementing the standard. Furthermore, by examining the drivers of ISO 14001

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internalization in the context of an economic crisis, we seek to provide deeper insights into the literature, because a “common element in advancing theory development by applying it in a new setting, is the need for a theoretical feedback loop” (Whetten 1989, p. 493). This unique context creates discontinuities<sup>1</sup> that change the nature of the existing variables and their underlying relationship. For example, an economic crisis may alter the competitive advantage of established firms, which in turn, could modify firm’s internal motivations for implementing the standard.

Based on our initial research question – which factors affect the substantive implementation of ISO14001 in a time of economic crisis? – this paper argues that during an economic crisis the institutional context is weakened, and that when firms react in different ways to the resulting shocks or discontinuities, their internal motivations also change. Specifically, when fundamental shocks occur, some firms remain passive while others proactively exploit the opportunities that these shocks generate (Schumpeter 1964). In such a context, our research shows that (a) weak external pressures can lead to a symbolic implementation of ISO 14001, as firms can defend or maintain their legitimacy without incurring the costs of internalization in the local market; (b) weak external pressures can lead to substantive implementation of ISO14001 when firms have strong internal motivations seeking to strategically differentiate from competitors in international markets. If strong external pressures characterize foreign markets, then firms with an eye on these markets will internalize ISO 14001 so as to restore their legitimacy and reputation; and (c) strong internal motivations pave the way for companies to stimulate their competitiveness by enhancing their efficiency, as some companies might strengthen their position in the local market at times of economic crisis by implementing ISO 14001 substantively.

The context of the study is Greece immediately after 2008. The financial debacle of that year significantly weakened the institutional context of several European Union member

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states, especially Greece, Spain and Portugal. We focus on Greece for three main reasons. First, the financial crisis led Greece into a “second Great Depression” (Krugman 2009, 2015), when the country became the first developed economy to be downgraded to emerging-market status (Dunkley 2013). Second, while the stagnating state of the Greek economy weakened the country’s institutions, it did not halt ISO 14001 certifications, which increased by a staggering 225 per cent during the course of the crisis (ISO 2013). Third, the few studies on ISO 14001 in Greece (Georgiadou and Tsiotras 1998; Kassolis 2007; Lagodimos et al. 2007; Nikolaou et al. 2012; Psomas et al. 2011) do not focus on factors influencing substantive implementation of the standard, making the Greek context of ISO 14001 internalization relatively unexplored.

The theoretical contribution of this paper in the literature on ISO14001 internalization lies in providing new insights into whether, in a unique context of economic crisis, external and/or internal motivations lead to substantive implementation of ISO 14001, or instead to a symbolic implementation. The paper refines knowledge on the importance of internal motivations for the substantive implementation of ISO 14001 (Boiral 2011; Heras-Saizarbitoria et al. 2011) by proposing that even in a time of economic crisis internal motivations maintain their significance in driving substantive implementation of ISO14001. Furthermore, the paper challenges studies that dismiss the importance of external pressures in driving internalization of ISO 14001 (Boiral 2007; Castka and Prajogo 2013). Our results indicate that weak external pressures, found oftentimes in a context of economic crisis, might not unavoidably lead to symbolic implementation of ISO 14001, but can also result in substantive implementation of the standard when firms have strong internal motivations.

These findings have important managerial implications for firms operating in a time of economic crisis and for those active in developing countries (often characterized by weak institutional pressures). The results of this research show that the internalization of

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ISO 14001 may generate important benefits for these firms by increasing their internal productive efficiency and/or by stimulating their external legitimacy and reputation, thus allowing them to improve their global competitiveness and access to international markets.

The paper is organized as follows. First, we review the literature on the internalization of ISO 14001 in order to conceptually differentiate between substantive and symbolic implementation of the standard. Second, we build on insights from the literature on the sources of ISO 14001 motivations in order to develop a conceptual framework that examines how the interplay between external and internal factors affects ISO 14001 internalization. Thereafter we discuss the research methodology and findings of our analysis of information from a novel qualitative study of 45 companies operating in Greece. We conclude by discussing the implications of the study, its limitations and directions for future research.

### **Theoretical Approach**

#### Substantive versus Symbolic Implementation of ISO 14001

ISO 14001 is the most popular environmental management standard worldwide, with more than 285,000 companies having adopted it as their main means of dealing with corporate environmental challenges (ISO 2013). The standard has been written in such a way that it includes all types and sizes of organizations and addresses diverse geographical, cultural and social conditions. ISO 14001 is a certifiable environmental management standard, meaning that external auditors, known as certification bodies, are called in by firms to certify their commitment to the standard's requirements.

The standard requires a company to develop an environmental management system through which it will achieve environmental protection and prevention of pollution in balance with socio-economic needs. The obligations of ISO 14001 are continual, so that the

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environmental operations and action plans are constantly improved. The operating principle underlying continuous improvement in ISO 14001 is the Deming cycle, otherwise known as the Plan-Do-Check-Act (PDCA) cycle (Deming 1982). According to this principle, firms have to comply with the following four steps to obtain the standard's certification.

First, companies must analyse their current position and identify their 'environmental aspects', which include energy use, water consumption, waste management – everything the firm exerts control over, or which it could be expected to influence. Once these aspects are identified, the company uses them to establish an environmental policy with specific objectives and targets that need to be pursued ('Plan').

Second, firms must put these plans into action, meaning that they need to integrate ISO 14001 into their everyday business operations. This is achieved through various arrangements such as the daily use of environmental management documentation, the training of employees in the environmental management system, the assignment of clear duties and responsibilities, frequent meetings and the use of sufficient resources for the implementation of ISO 14001 ('Do').

Third, firms have to monitor their environmental performance and measure it against the set objectives and targets. Such monitoring takes place through actions like internal audits, third-party audits, assessment of customer satisfaction, supplier evaluation and management reviews ('Check').

Fourth, firms have to ensure that there are no major or secondary deviations from the ISO 14001 requirements, also known as major or secondary non-conformities. In the case of non-conformities, firms must apply the required corrective actions to rectify flaws and preventive actions to avoid potential problems ('Act').

Based on this approach, a company that is environmentally truly committed can implement ISO 14001 in a substantive way only if it designs, develops and implements an

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environmental management system that effectively addresses all four components of the PDCA cycle. Such a company will not decouple actual practices from ISO 14001, but will continuously apply ISO 14001 procedures and practices and integrate its environmental management system into its daily operations. In doing so, the company will adopt substantive actions that significantly influence its business model, goals and processes. This is what the literature calls ‘substantive implementation’ (Aravind and Christmann 2007; Bansal and Kistruck 2006; Boiral 2011; Perez-Batres et al. 2012).

In contrast, ‘symbolic implementation’ of ISO 14001 describes the approach of firms that do not use the environmental management system in their daily routines, or that comply with certain components of the PDCA cycle only and attempt to produce evidence of implementation at the last minute, merely in order to pass the annual certification audit (idem). In such a case, the company will not be genuinely attempting to conform to ISO 14001 requirements and improve its environmental performance.

### External and Internal Factors Influencing ISO 14001 Implementation

While numerous studies indicate that external pressures such as government regulation and institutional and commercial pressures are important for the adoption of the ISO 14001 standard (Darnall and Edwards 2006; Delmas 2002; Jiang and Bansal 2003; de Oliveira et al. 2010; González et al. 2008; Prajogo et al. 2012; Nishitani et al. 2012; Singh et al. 2014, 2015), the literature remains inconclusive on whether external pressures contribute to the substantive implementation of ISO 14001, or instead to its superficial implementation.

Research by Zailani et al (2012), for instance, identifies governments as among the main external drivers that increase the use of internal proactive environmental strategies such as eco-design. However, other studies question the influence of external factors and maintain

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that government pressures might encourage firms to adopt ISO 14001, but may not be sufficient to make companies implement the standard in a substantive way (Lannelongue et al. 2013). This is because a company can gain its legitimacy by merely implementing a standard in a symbolic manner (Boiral, 2007; Castka and Prajogo, 2013), thus minimizing the costs of complying with prevailing regulations.

Other scholars (Barkley 2002) focus on external pressures exerted by business customers and end consumers, and suggest that the importance of these two stakeholder groups as factors influencing the implementation of ISO 14001 seems to have increased as demand for 'green markers' has grown. Yet the pressures exerted by business customers or end consumers might not lead to substantive implementation of ISO 14001, according to recent studies showing that the environmental intentions of consumers rarely translate into environmental purchase decisions (Barr 2004; Bray et al. 2011; Carrington et al. 2010; Young et al. 2010). Such pressures may lead to substantive implementation only if they are strong enough (Anton et al. 2004; Darnall and Carmin 2005).

In contrast to external factors, existing evidence on the importance of internal factors pinpoints that internal motivations are crucial for the substantive implementation of ISO 14001. 'Internal motivation' entails various factors such as a firm's strategy, intangible resources and capabilities (Heras-Saizarbitoria et al. 2011), which may, in turn, boost a firm's competitive advantage (Hart 1995).

Often studies categorize internal motivations as competitive or ethical (Gonzalez-Benito and Gonzalez-Benito 2005). Competitive motivations arise from the expectation of efficiency gains, namely the prospect of enhancing the productivity, performance and profitability of the firm (Bansal and Bogner 2002; Neumayer and Perkins 2005). Specifically, the internalization of ISO 14001 may allow firms to reduce their costs by saving resources or using them more efficiently (Porter and Van der Linde 1995). Competitive motivations also arise from the

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expectation of increased sales owing to the ability of an ISO 14001-certified firm to strategically differentiate<sup>2</sup> itself from competitors and capture new or expanding green markets (Lannelongue et al. 2013). Recent empirical evidence indicates that when firms adopt environmental management systems in order to increase their competitiveness and profits, they are more likely to implement these systems in a substantive way (Heras-Saizarbitoria et al. 2013; Kesidou and Demirel, 2012).

Ethical motivations, on the other hand, arise from increased environmental awareness and responsibility on the part of the firm's managers and employees (Bansal and Roth 2000). In particular, the internalization of ISO 14001 may be more successful in firms with high employee involvement and managers that demonstrate conviction in and support for environmental management (Boiral 2011; Guoyou et al. 2012).

### **Conceptual Framework: How the Interplay between External and Internal Factors Affects ISO 14001 Implementation**

In sum, our review of the literature on factors influencing the implementation of ISO 14001 underlines a lack of agreement regarding the influence of external factors in driving substantive implementation of the standard, while there seems to be a consensus on the influence of internal factors associated with substantive implementation of ISO 14001.

However, the current literature analyses the external and internal factors that affect a company's environmental commitment separately, and overlooks the interplay between these factors. This interplay is important, though, in that the institutional context can influence the internal benefits related to ISO 14001 implementation. A few studies (Goedhuys and Sleuwaegen 2013; Potoski and Prakash 2013; Schaefer 2007) take this interrelationship into account and contend that oftentimes strong institutional pressures deter firms from adopting

ISO 14001 in the first place. This is the case because in strong institutional environments<sup>3</sup> firms have little internal motivation to adopt and internalize ISO 14001, as the marginal gains in efficiency and strategic differentiation are very small (Potoski and Prakash 2013). In contrast, when firms operate in weak institutional environments found in developing countries and seek to export to countries characterized by strong institutional regimes, they tend to adopt and substantively implement ISO 14001 because of strong internal motivations to improve their internal efficiency and to strategically differentiate by boosting their reputation and legitimacy (Goedhuys and Sleuwaegen, 2013).

We take this research a step further and argue that as a result of the on-going economic crisis in Europe, weak institutional environments are nowadays found in developed economies as well. More precisely, the prolonged economic crisis in the European Union has weakened the institutional environment of countries on the so-called periphery of the union such as Greece, Spain and Portugal. The economic crisis<sup>4</sup> in Greece has deepened and the institutional environment<sup>5</sup> has weakened. Despite the fact that firms in Greece have been severely hit by the country's problematic economic situation (Wehinger 2014), ISO 14001 certifications have rocketed through the years of economic crisis: from 455 in 2009 to 1025 in 2013 (ISO 2013). Yet, we do not know whether firms in this context implement the standard in a substantive or rather symbolic way and which factors are driving the substantive implementation of ISO14001.

The setting of the conceptual framework in this study is that of an economic crisis (Figure 1). The framework takes into account not only the impact of external and internal factors, but it also considers how their interplay influences the internalization of ISO14001. In Figure 1 the circles display the external and internal factors that affect the implementation of ISO14001. The overlap of these circles shows the interplay of external and internal factors. In particular:

- a) We expect that weak external pressures lead to a symbolic implementation of ISO 14001. The deterioration of the Greek institutional environment will have a qualified impact on ISO 14001 implementation. A weak institutional environment influences the transparency and independence of external audit (Jiang and Bansal 2003), which are crucial in ensuring that firms abide by all four steps of the PDCA cycle and implement ISO 14001 in a substantive manner. ISO 14001 certification is problematic when auditors are appointed and paid by the very company that seeks certification. This can compromise the independence of the auditors – and the firm might select lenient auditors who provide certification even where ISO 14001 requirements have not been met in full (Dogui et al. 2014; Heras-Saizarbitoria et al. 2013). Another potential problem that might compromise auditors' independence is the fact that national accreditation bodies might not monitor auditors' activities effectively<sup>6</sup> (Yeung and Mok 2005). Thus, auditors may grant the ISO 14001 certificate to undeserving firms either because they lack technical knowledge (Aravind and Christmann 2011) or because they have developed commercial relationships with the companies they audit (Boiral 2007). This undermines the rigour, reliability and accountability of these audits (Boiral and Gendron 2011; Dogui et al. 2013; Boiral 2011), raising concerns about their predictability and difficulty (Boiral 2012).
- b) We anticipate that the interplay between weak external pressures and strong internal motivations leads to a substantive implementation of ISO14001. An economic crisis may drive proactive firms to exploit the opportunities that these shocks generate (Schumpeter 1964). When firms have strong internal motivations in increasing their competitiveness they may seek to strategically differentiate from competitors in international markets (Lannelongue et al. 2013). Yet, the weakened local institutional

environment influences negatively the reputation and corporate profile of the local firms. Figure 1 shows that the impact of weak external factors is non-linear as some firms could substantively implement ISO14001 when they have strong internal motivations so as to strategically differentiate in international markets. The latter enables these firms to restore their reputation and increase their competitiveness.

- c) We expect that strong internal motivations lead to a substantive implementation of ISO14001. As already mentioned above in (b), an economic crisis is conceptualised as a shock or discontinuity that may create economic opportunities; highly proactive firms may strive to exploit these opportunities (Schumpeter 1964). Specifically, firms with strong internal motivations seeking to increase their competitiveness could substantively implement ISO14001 so as to reduce their costs by saving resources or using them more efficiently (Porter and Van der Linde 1995).

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Insert Figure 1 about here  
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## **Methodology**

### Data Collection

In-depth, semi-structured interviews were conducted anonymously with representatives of 45 manufacturing firms. The participating companies were randomly selected on the basis of information provided by certification bodies. These bodies hold information on firms' environmental management practices that is not publicly available. To ensure that all the firms selected would take part, senior auditors from the certification bodies were approached and asked to encourage the firms to participate.

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Table 1 describes the participating companies. Nineteen are medium-sized and twenty-six are small, and all are located in the county of Attica. This area was chosen because it is the dominant region of Greece in terms of economic activity, accounting for half of the Greek GDP. Also, the fact that all the companies surveyed are located in a geographically limited area means that they share a similar cultural and institutional context. In other words, all are likely to face similar levels of scrutiny to the extent that they conform to the same social and environmental demands and hence can be analysed alike (Hoffman 2001; Long and Driscoll 2008).

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Insert Table 1 about here

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### Development of Interview Guide

To identify the factors influencing substantive versus symbolic implementation of ISO 14001, we needed first to clarify the content of these two types of implementation. To do so, we consulted the ISO 14001 requirements (ISO 2009), also called clauses, and the relevant literature (see Table 2). We used the PDCA cycle and ended up with the interview questions and topics presented in Table 2. Respondents who answered all these questions positively and provided relevant documents supporting their actions were considered to be cases of substantive implementation of ISO 14001.

First, according to ISO 14001 and the relevant literature, substantive implementation of the standard requires the development of an environmental policy, the determination of environmental aspects and assessment of environmental impacts, keeping records of environmental legislation in order to follow changes in legal requirements, and setting

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environmental objectives. These topics were addressed during interviews and are presented in the table in the thematic area 'Plan'.

Second, ISO 14001 stipulates the application of a documented system that takes into account training procedures, operational controls, environmental work instructions on how to carry out certain tasks, and dealing with emergency situations. The literature cited above and the standard's requirements provide a very detailed account of how to implement an environmental management system effectively. Prior to the interviews we consulted these sources of information and ended up with the questions presented in the thematic area 'Do'.

Third, substantive implementation of ISO 14001 entails the monitoring and measurement of operational activities, especially those that can have significant environmental impacts and frequent internal audits. The management system must therefore be dynamic and continually adjust to change. These issues were addressed during interviews and are presented under the thematic area 'Check'.

Last, but not least, substantive implementation implies that companies have in place procedures for determining responsibilities, for allocating the authority to handle and investigate non-conformance, and for taking action against present and future potential impacts. Firms need to identify the causes of non-conformance, implement the necessary corrective actions, make sure that non-conformance will not happen again and record in writing all procedures resulting from the corrective action. Firms that apply a standard meticulously make changes as required in the course of their daily operation, while firms that adopt the standard for symbolic reasons only update documentation at the last minute purely to pass the external audits. All these topics were addressed during interviews and are presented in the thematic area 'Act'.

The clarification of what substantive implementation entails enabled us to analyse the factors influencing substantive versus symbolic implementation of ISO 14001. To identify

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those factors and explore their influence on firms' approach to ISO 14001, we consulted the relevant literature (see Table 3). We then divided these factors into external and internal.

Under external factors, we explored the influence of government and market pressures, i.e. pressures exerted by business customers and end consumers, on ISO 14001 implementation. We chose to focus on these two groups as they are identified in the literature as the most significant that can negatively affect a company if their environmental concerns are not satisfied. Under internal factors, we focused on the most widely quoted factors in the literature, namely access to international markets, cost reductions, efficiency improvements and greater productivity, profit maximization and corporate profile.<sup>7</sup> We explored the influence of these factors on how firms approach ISO 14001 implementation.

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Insert Tables 2 and 3 about here  
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### Interviews

We chose to conduct semi-structured interviews because they can provide a greater breadth of data than structured interviews (Denzin and Lincoln 2005). They give the interviewer a better understanding of an interviewee's understanding of the substantive implementation of ISO 14001.

Interviews lasted approximately 60 minutes, were conducted in person and involved one or two representatives of the firm concerned. Respondents were guaranteed compliance with ethical restrictions such as those relating to informed consent, respect for privacy, and avoidance of harm and deception (Diener and Crandall 1978; Fontana and Frey 2005).

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Interviewees had to answer all questions. In all instances, the interviewer made sure that the respondent fully understood the questions being asked and was responding in the appropriate context. To triangulate the responses, the interviewer asked for key pieces of information used in external audits, such as recorded corrective actions, minutes from management reviews and recorded performance indicators (Welch, 2000). Where respondents replied positively that their companies did implement ISO 14001 substantively, but did not give proof of implementation, such companies were not counted among those that substantively implemented the standard.

Throughout each meeting, the interviewer would note and record the respondent's use of nonverbal modes of communication, which provided additional insights into the veracity of the responses. Additionally, to avoid a biased or incomplete interpretation and to allow the interviewee to evaluate the adequacy of the interviewer's interpretation (Healey and Rawlinson 1994), the researcher would summarize the explanations provided by the interviewees. Occasionally, in order to test whether the response had been understood correctly, the interviewer would deliberately misrepresent what the respondent had said. This generally elicited a correction and further explanation from the interviewee. At the end of the procedure, the interviewee would be shown the interviewer's notes and invited to evaluate their accuracy, and would be thanked for cooperating.

To minimize external distortions, interviews were conducted in a quiet, private setting. Based on suggestions in the literature on how to control bias and produce reliable data after an interview (Healey and Rawlinson 1994; Saunders et al. 2012), the following contextual data about the interview were recorded: location, date and time, setting, background information on the interviewee and the researcher's immediate impression of how the interview went.

## Interviewees

Senior environmental managers were targeted for interview. In several small companies, the owner of the firm performed this function. In line with previous research (Banerjee 2001; Darnall 2006), we focused on managers responsible for implementing ISO 14001, as it has been shown that they play a significant role in designing, developing and implementing environmental management practices.

In medium-sized firms, the interviewees had titles such as 'EMS manager' or 'environmental and health and safety manager', and in most cases (75 per cent) managed a department of three. Only a few companies employed more than three persons for the implementation of ISO 14001. In most small companies, this was the responsibility of just one person, who did not have an official title. Where the function was performed in a small firm by someone other than the owner or founder, the owner was also interviewed. The interviewees from medium-sized companies all had scientific backgrounds, a third directly related to environmental science. In small companies, six of the owners interviewed had no scientific background, and only seven interviewees had a background in environmental science.

## Data Analysis

Data analysis followed an iterative process, not as a repetitive mechanical approach but as a reflexive exercise. Iteration is used in qualitative analysis to facilitate the development of meaning and involves a sequence of tasks carried out multiple times and executed in exactly the same manner each time (Denzin and Lincoln 2005; Miles and Huberman 1994; Bassett 2010; Srivastava and Hopwood 2009).

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Our approach had two main phases. In the first phase, we listened to all interview recordings and transcribed the parts of interviews that were deemed interesting and useful. This approach is in line with existing studies suggesting that the identification of themes from qualitative data does not necessarily require comprehensive verbatim transcripts. Rigour in qualitative analysis can also be ensured through the transcription of relevant and useful information only (Bogdan and Biklin 1998; Creswell 2009; Seale and Silverman 1997; Silverman 1993). Each interview was listened to twice to ensure that all important issues had been noted. The texts were checked for accuracy and transcription errors were corrected. Transcriptions were saved in a word-processed file using filenames that maintained confidentiality and preserved the anonymity of interviewees while allowing easy identification of each interview. All interviews were digitally recorded, transcribed and coded using the QSR NUD\*IST Vivo (NVivo) software.

The second phase of the data analysis set out to track information on factors influencing substantive versus symbolic implementation of ISO 14001. To do so, the transcribed texts were systematically studied. The first reading of each interview transcript was undertaken with the audio recording running. This allowed the researcher to focus on emphasis, mood and intonation. Analysis proceeded in an iterative way, with the transcripts read and reread several times to form a comprehensive image of the data. During this phase, the researcher marked portions of the interview texts that revealed information on the area of interest and made marginal notes on the transcribed text (memos). As the reading progressed, these memos were refined into codes. Codes that referred to less than two firms were discarded. To facilitate the coding procedure, free nodes were used; this enabled the researcher to include all quotes on a certain topic from all interviews combined. Bringing data from many documents together in the same node was significantly important, as it allowed the authors to analyse the interview texts more effectively and focus consistently on the topic of interest.

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The iterative process continued, and, as codes were refined, themes related to factors influencing ISO 14001 implementation emerged.

The final set of codes relating to factors influencing substantive versus symbolic implementation of ISO 14001 fell into eleven categories: substantive implementation, symbolic implementation, public projects, government pressures, end consumer pressures, business customer pressures, accessing international markets, cost reductions, efficiency improvements, profit maximization and corporate profile. Table 4 presents the code book from the data analysis.

The next section of this article is organized around the main themes, which are described together with illustrative quotes from the interviewees that encapsulate their meaning.

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Insert Table 4 about here

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### **Findings**

#### Substantive versus Symbolic Implementation of ISO 14001

Our analysis of interviewees' responses on the implementation of ISO 14001 revealed that most companies (65 per cent) did not follow every step of the Deming cycle and implemented it only symbolically. Regarding the 'Plan' component of the cycle, all of these companies had an environmental policy and had identified their environmental aspects. They also kept records of environmental legislation and had set environmental objectives. However, interviewees' replies revealed that they either did not follow changes in environmental legislation closely or did not collect data on the actions taken to meet the environmental objectives set. With reference to the 'Do' component of the Deming cycle,

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respondents' replies revealed that although they had a documented environmental management system in place, they viewed that system as a managerial tool that did not assist firms, but instead increased red tape, complicated business operations and led to delays in production. As, one interviewee explained:

OK...to be honest...ISO 14001, and standards in general, help pacify end consumers' concerns...when they see a certification...it is like a recognition...because I am technocrat and I am interested in getting the essence of things...the truth is that ISO 14001 is very bureaucratic...we have to adopt it to play the game the market requires...we don't have the luxury to note everything down...at the end of the day, there is no need to write down all things... [Environmental Manager, (Resp. 19)].

Respondents treated ISO 14001 as a means to conform to the market's requirements, to improve their chances of surviving the economic crisis and to satisfy end consumers' concerns. As an interviewee said:

Environmental matters seem to have some importance these days. The market has a preference for it [ISO 14001] and the government too. So [pause] we decided to go for it; it's our last chance...if this doesn't work either then I am afraid that's the end of the road for us. [big pause] After 25 years, there is a good chance to go out of business! [Son of the company's founder / Environmental manager / Owner, (Resp. 4)].

As far as the 'Check' component of the Deming cycle was concerned, the replies did not suggest frequent monitoring and measurement of business operations. Last, but not least, some responses provided evidence of the responsibility and authority to identify non-conformance, while others did not. In either case, answers indicated that the 'Act' component

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of the Deming cycle was not integrated and that these firms only updated documentation at the last minute to pass the external audits.

In contrast to the comments above, sixteen accounts, coming from eleven medium-sized and five small firms, provided evidence of substantive implementation. About half of these referred frequently to the negative impact of the economic crisis on the company's financial performance, while the rest treated the crisis as a business opportunity. In every instance, the firm had integrated the application of ISO 14001 into its everyday activities by following every step of the Deming cycle as presented in Table 1. Interviewees' replies demonstrated that these firms had integrated the 'Plan' part of the Deming cycle into their daily routine. More precisely, they had put in place an updated environmental policy, identified their environmental aspects and assessed the environmental impacts of their operations. They also provided evidence of updated records of environmental legislation and of having measured their firm's performance against laid-down environmental objectives.

With reference to the 'Do' component of the Deming cycle, respondents' answers indicated the integration of a documented environmental management system into everyday business conduct. These managers had adapted the ISO 14001 to their own needs and provided detailed proof of documented procedures and work instructions. They also highlighted the time needed to enjoy the benefits flowing from the implementation of the standard. An interviewee explained the continuous organizational changes that are necessary when ISO 14001 is implemented in a substantive way:

...the adoption of ISO 14001 is an ongoing procedure. There are some [requirements] that are very general and are applicable to all processes of the company; these requirements demand big and time-consuming changes and cannot take place overnight...we are committed, however, and as time passes we'll proceed into further investments. [Environmental Health and Safety Manager, (Resp. 5)].

Regarding the 'Check' part of the Deming cycle, these respondents did not wait for the annual external audit, but performed frequent internal audits to ensure that their system stayed 'alive' and adapted to their firm's needs. Their intention was to integrate ISO 14001 as well as possible into their everyday activities. In this context, they perceived audits as an excellent means of monitoring the level of integration of the standard into their business operations.

Finally, the 'Act' component of the Deming cycle was satisfactorily addressed in these respondents' replies, in that they provided evidence of documented non-conformances, and of corrective and preventive actions. Also, their replies indicated how these actions were fed into management reviews and the decisions taken to correct and prevent flaws.

#### Factors Encouraging Substantive or Symbolic Implementation of ISO 14001

##### *External Factors*

**Public projects:** The majority of the interviewees argued that they had been certified because that enabled them to participate in public projects granted by the government. These participants claimed that they were not necessarily interested in implementing ISO 14001 and improving their environmental performance. They also claimed that the government, hit by the economic crisis, could not monitor ISO 14001 implementation, giving companies plenty of opportunity to implement the standard symbolically. Responses from the vast majority of interviewees (29 out of 33) suggested that the stagnating Greek economy had seriously threatened their companies' survival and that, owing to the lack of other options, they saw participation in public projects as a major, if not the only, chance of survival, as such projects are usually big and well paid. As an interviewee said:

They're trying to restructure the economy [a reference to the measures taken to get out of the economic crisis]...at least this is what they say [pause]...Truth is that we haven't seen any benefits until now. In our case, we've witnessed a dramatic decrease in our sales.....whether we like it or not, we need to participate in public projects... and you know what's funny? There are major delays in payments and participation rules are sometimes vague....in some cases they [the government] already know who is going to take which project [laughter]. [Environmental Manager, (Resp. 24)].

**Government and end consumer pressures:** The discussion on ISO 14001 implementation unavoidably included government and end consumer awareness. Regarding government awareness, thirty-two interviewees indicated that most public sector employees who dealt with ISO 14001 implementation lacked sufficient knowledge of the topic. The government was seen as merely paying lip service to the implementation of ISO 14001, without sufficient knowledge of the Deming cycle and corporate responsibility – an impression based on the perceived lack of pressure from the government on firms to apply the standard. The following short dialogue between the interviewer (IV) and the owner of a small company (OW) helps characterize the problematic situation around auditing procedures:

OW: An auditor once told me: I know that I'm a burden to you; what you want to do is to produce and increase your profits. Instead you have me here asking you whether you have written procedures about aspects of your business or not and whether these procedures are correctly written or not. Things that don't make any sense.

IV: Did you ask her why she said that?

OW: [puzzled] Why bother? I called her to come, she came, got her money, got my certification. End of story. [Owner / Environmental Manager, (Resp. 28)].

The only pressures noted in most accounts related to a number of state-promoted programmes purporting to encourage firms to get certified. However, interviewees generally agreed that the implementation of these programmes was superficial and that the state, especially in the prevailing financially turbulent environment, was more interested in securing a minimum, typical implementation of ISO 14001 than encouraging companies to integrate the standard into their everyday operations. The following comment illustrates this view:

Nowadays with the crisis and shrinking public sector, the government lacks the resources needed to monitor implementation of ISO 14001 and sanction any violations. [Environmental Manager, (Resp. 29)].

As far as end consumer awareness is concerned, the findings indicated a general acknowledgement of the fact that although end consumers may not be very well informed about ISO 14001 and corporate responsibility, they have the potential to influence business operations significantly. Analysis of the transcribed texts indicated a common perception that end consumers can affect the firm in a number of ways, including boycotts and picketing. In addition, the interviewees generally felt that end consumers who were more aware of ISO 14001 were encouraged in their belief that corporations were not stepping up to their social and environmental responsibility. All interviewees recognized this as an important issue that needed to be addressed. In this sense, the role of end consumers in the way firms apply ISO 14001 was identified as potentially significant. Here are two extracts from the interviews that illustrate views on customer awareness:

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At times of financial turmoil, the ISO 14001 certificate plays a more important role than ever before for our consumers. [Safety, Health, Environment and Quality Manager, (Resp. 41)].

End consumers.....may not know every little detail, but they do have some knowledge and can evaluate whether the firm applies ISO 14001 substantially or not. [Environmental Manager, (Resp. 32)].

**Business customer pressures:** Twenty-eight interviewees described significant business customer forces as they talked about pressure exerted on them by certified business customers or competitors to obtain an environmental management system certification. These respondents did not see any benefit in adopting ISO 14001, but instead regarded it as a ‘ticking the box’ exercise. This is why they were not interested in substantively implementing the standard. Two comments illustrate this view:

Within this economic climate, everybody asks for it [ISO 14001]. As others require us to adopt it, we do so. [Environmental Manager, (Resp. 16)].

If we didn’t have it [ISO 14001 certification] we would have problems. Now that we have it, it does not mean that we see benefits from it. [Owner, Environmental Manager, (Resp. 9)].

### *Internal Factors*

**Access to international markets:** Eight interviewees indicated that certification had been part of their internal strategy for accessing international markets. These respondents represented companies that had an explicit export strategy and were not interested in doing business in Greece, as they believed that the Greek business environment has been utterly

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destroyed by the economic crisis. In these cases, the adoption of ISO 14001 was regarded as a sine qua non for accessing an international market. As one interviewee explained:

There are countries that require ISO 14001 because they don't trust us. You know...the economic crisis has played a major role in this lack of trust. The standard provides a common basis for evaluating our performance. The latter is constantly assessed by our partners in these countries; hence, there is no room for not complying with the standard's requirements. [Environmental Manager, (Resp. 45)].

These interviewees argued that their approach to ISO 14001 was not superficial and that they implemented the standard substantively. Their argument was that foreign markets were wary of Greek companies and, for that reason, wanted tangible evidence of environmental performance, such as ISO 14001 certification. Respondents claimed that the growing mistrust of the credibility of Greek firms, resulting from the economic crisis, gave them no choice but to commit themselves to the values and principles of ISO 14001 in a substantive way. They said that if they failed to do so, their access to international markets would be jeopardized, which would threaten their companies' survival. These respondents belonged to the minority of firms that substantively implemented the standard, positively answered all interview questions presented in Table 1 and provided detailed evidence on the implementation of ISO 14001.

**Cost of production, efficiency improvements and profit maximization:** Ten interviewees related the implementation of ISO 14001 to cuts in the cost of production, greater productivity and profit maximization. One interviewee explained:

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The certificate is a proof of applying certain actions. Sometimes a company may already have in place certain procedures and be very close to the desired result [i.e. improving the efficiency of its business operations]. In some other cases, a standard guides the company on how to get better and improve its profits. For us, it was like marrying both factors.... [Quality and Environment Manager, (Resp. 11)].

No ethical reasoning manifested itself in the responses of these interviewees. They acknowledged the problematic situation of the Greek economy and saw in ISO 14001 an opportunity to achieve competitive benefits and improve their sales. They argued that the economic crisis provided them with an opportunity to strengthen their position in the local market and increase their market share, and maintained that ISO 14001 could significantly help them achieve their aims. That is why most of these respondents (eight out of ten) provided evidence of substantive implementation of ISO 14001. These eight positively answered all interview questions and provided documented supporting evidence. They said that the use of by-products, recycling practices and energy-saving policies had enabled them to decrease the cost of production, improve the efficiency of their business activities and maximize their profits. Two comments illustrate this view:

Environmental protection has an excellent potential to improve profits, enhance our productivity and significantly reduce our cost of production. During these times [of economic crisis] this is hugely important. [Quality, Safety and Environment Manager, (Resp.37)].

It's a win-win situation: we protect the environment and at the same time we have significant competitive benefits. Luckily for us, many of our competitors either don't realize this yet or due to the economic crisis don't have the money needed to get this [ISO 14001]. [Environmental Health and Safety Manager, (Resp. 12)].

## **Discussion and Research Implications**

This article has focused on ISO 14001 in Greek manufacturing firms and analysed factors that induce substantive versus symbolic implementation of the standard in a time of economic crisis. Existing literature on the topic maintains that substantive implementation of ISO 14001 is driven mainly by internal factors (Boiral 2011; Gavronski et al. 2008; Heras-Saizarbitoria et al. 2011; Guoyou et al. 2012), whereas the importance of external factors remains inconclusive: some scholars argue that external pressures lead to the symbolic implementation of the standard (Boiral 2007; Castka and Prajogo 2013), while others suggest that the intensity of external pressures increases the internalization of the standard (Christmann and Taylor 2006; Zailani et al. 2012). Despite the fruitful insights it offers, this literature does not take into account that external pressures may have a qualified impact on firms' internal motivations to implement ISO 14001.

This study contributes to the literature on ISO 14001 internalization in that, to the best of our knowledge, it is the first that analyses factors driving the substantive implementation of the standard and their interplay in a time of economic crisis. The use of existing knowledge in a new setting allows us to advance theory on ISO 14001 internalization through a theoretical feedback loop (Whetten 1989). Indeed, by doing so we enhance knowledge about when internal motivations and external pressures lead to substantive implementation of ISO 14001.

Our findings demonstrate that weak external pressures found oftentimes in a context of economic crisis might not unavoidably lead to symbolic implementation of ISO 14001, but can also result in substantive implementation of the standard when firms have strong internal motivations. Insights from this study indicate that in weak institutional environments some companies are driven mainly by external pressures and adopt ISO 14001 for purposes of

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legitimacy. Previous studies (Aravind and Christmann 2011) have shown that firms acquiring ISO 14001 certification for such purposes do not implement the standard substantively. We have extended this literature by showing that external pressures may lead to either symbolic or substantive implementation of the standard depending on the strength of the internal motivations of the firm.

First, firms operating in weak institutional environments implement ISO 14001 symbolically so as to enhance their legitimacy in the local institutional context without incurring the cost associated with substantive implementation. These firms take advantage of the weakened institutional environment, lack of monitoring mechanisms, sanctions and information asymmetries relating to ISO 14001 implementation.

Second, when firms operating in weak institutional environments have strong internal motivations, implement ISO 14001 substantively so as to improve or restore their legitimacy in other institutional environments. In this case, firms, driven by their internal motivations to overcome the economic crisis, develop a clear export strategy. These firms implement the standard in a substantive manner so as to abide by the requirements set in foreign institutional environments. Foreign markets do not trust Greek companies, particularly because of the weakened local institutional environment, and insist on tangible evidence of environmental performance. Driven by the on-going crisis, Greek companies implement ISO 14001 substantively, as they want to restore their reputation in foreign markets.

Finally, our findings suggest that some proactive firms driven by strong internal motivations see the economic crisis as a business opportunity and attempt to strengthen their position in the local market. These companies implement ISO 14001 in a substantive way for the internal benefits that ISO 14001 generates. In these cases, the standard is seen not as an obligation or burden, but as an opportunity to improve business. Crucially, these findings generate important theoretical implications by demonstrating that even in the context of

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economic crisis internal motivations maintain their significance in driving substantive implementation of ISO14001. This strategy may generate important gains for firms operating in the context of a crisis, as the ISO14001 benefits might enable them to improve their competitiveness in international markets (Goedhuys and Sleuwaegen, 2013).

This paper also contributes to the literature about ISO auditing mechanisms. Our findings enrich those of other studies questioning the effectiveness of ISO 14001 audits (Boiral 2007; Boiral 2011; Boiral and Gendron 2011; Dogui et al. 2013; Gavronski et al. 2008; Guoyou et al. 2012; Heras-Saizarbitoria et al. 2013), especially in weak institutional environments (Jiang and Bansal 2003). The results show that in weak institutional environments auditing mechanisms might indeed be biased and, especially at times of economic crisis, significantly influenced by commercial interests. However, we have contributed to the literature by showing that some firms, driven by their own strategic goals, might still substantively implement ISO 14001, notwithstanding the deterioration of auditing procedures. This implies that substantive implementation of ISO 14001 can be influenced more by a firm's own priorities than by the quality of auditing mechanisms. In contrast to existing research (King and Toffel 2009), we show that even in the absence of auditing mechanisms, firms may implement environmental management standards, such as ISO14001, in a substantive manner.

### **Conclusions and Directions for Future Research**

The purpose of this study was to analyse factors that drive substantive versus symbolic implementation of ISO 14001 in a time of economic crisis. Apart from its theoretical contribution, the paper's results have implications for practitioners and policy-makers. Regarding the former, the paper's findings can help managers operating during an economic

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crisis, or in a similar setting in an emerging economy, become aware of the benefits that the substantive implementation of ISO 14001 may generate in the form of increased efficiencies, improved international competitiveness and reputation. Also, our study offers managers a road map for substantively implementing ISO 14001. More specifically, the information presented in Table 2 provides a detailed account of topics companies need to pay attention to in order to comply fully with the standard's requirements.

With reference to policy-makers, the article's findings raise concerns about the reliability of ISO 14001 as a governance tool of corporate environmental performance. We suggest that in institutional environments hit by prolonged economic crisis not all firms implement the standard in a substantive manner. Yet, there is some room left for environmental protection, but this is contingent on the interplay between external pressures and internal motivations. Taking into account that our sample is based on SMEs, this finding has important implications at a European Union level in the light of steadily increasing international initiatives for the implementation of environmental management practices in the SME sector, such as the European Commission's 2014 Green Action Plan for European SMEs (European Commission 2014).

The limitations of our research provide anchors for future research. First, this research was based on an exploratory design; the aim of the study was to investigate a relatively under-researched area without any preconceptions. The strength of the design is that it enabled us to bring new insights into the interplay among factors driving substantive versus symbolic implementation of ISO 14001 in a time of economic crisis. Its weakness, however, is that it does not allow the researchers to make valid speculations about the efficacy of the suggested relationships. Future research could test the validity of the article's findings.

Second, most interviews involved one person who provided a single perspective on a firm's operations. In line with previous research, these are persons who played a major role in

their company's environmental management practices, and company records were used to triangulate the information provided. However, a more in-depth account of internalization issues should include middle-level managers and employees, as their views on ISO 14001 implementation might differ. Future studies could analyse substantive versus symbolic implementation of the standard by drawing on different sources of information.

Another possible problematic issue relates to the sampling method. The fact that senior auditors from the certification bodies intervened to encourage companies to participate in this survey might have encouraged some of the sampled firms to present an exaggeratedly favourable picture of themselves. We cannot know whether the results would have been different if the authors had approached the sampled companies without this intervention.

Moreover, the fact that 99.9 per cent of companies in Greece are SMEs (European Commission 2012) limited our sample to such companies, and prevented us from capturing the views of big firms operating in Greece. Future research could test the views of these firms and compare them with the results of this paper.

Last, but not least, future studies could analyse the interplay between institutional and competitive factors in other institutional environments hit by the economic crisis, within or outside the European Union, and test whether those are in line with the findings of this paper.

## Notes

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<sup>1</sup> A 'discontinuity' is "a temporary or permanent, sometimes unexpected, break in a dominant condition in society" (van Notten et al. 2005 p.179). It is an abrupt or sudden change that can be triggered, for example, by "unexpected discrete events, such as the oil shocks of 1973 and 1979..." (van Notten et al. 2005 p.179).

<sup>2</sup> On one hand, companies may implement ISO 14001 so as to generate eco-innovative products and services (Kesidou and Demirel 2012) that will serve consumers willing to pay a premium for environmental quality (Arora and Gangopadhyay 1995). On the other hand, companies may use ISO 14001 to 'signal' to the market their environmental commitment and thus improve their reputation. The strategic goal in both cases is to

increase the company's competitiveness by differentiating it from other competitors. In the first case, ISO 14001 is used in conjunction with other investments that seek to improve the environmental quality of the company's products or services, whereas in the latter case ISO 14001 is used to improve the image of the company.

<sup>3</sup> Strong institutional environments are characterized by stringent regulation for environmental protection, the existence of watchdog groups, activists and a strong responsible investment movement.

<sup>4</sup> From 2009 onwards, Greece's GDP has contracted by 25 per cent, unemployment has rocketed to more than 25 per cent, real wages have fallen by 30 per cent and industrial output has declined by 35 per cent (Lapavitsas, 2014).

<sup>5</sup> On one hand, formal institutions are enfeebled due to deregulation, increasing corruption and judicial bias. On the other hand, informal standards such as norms, values, reputation and trust are also affected by the negative impact of the economic crisis on social cohesion.

<sup>6</sup> National accreditation bodies are the sole national agencies licensed by their governments to provide various accreditation services to certification bodies. Examples are the United Kingdom Accreditation Service (UKAS), the Japan Accreditation Board (JAB), the German Accreditation Body (DAkkS) and the Hellenic Accreditation System (ESYD).

<sup>7</sup> Ethical motivations and employee motivation were also considered as potential factors driving ISO 14001 internalization, but it became apparent from the first interviews that they were not significant. This could be because such motivations are not a priority for firms in time of crisis.

## **Acknowledgements**

The authors would like to thank the associate editor of the Journal of Business Ethics, Julia Roloff, and the two anonymous reviewers for their insightful comments. We are also grateful to Emmanuella Plakoyiannaki for her useful comments on an earlier version of the manuscript.

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**Table 1: Participating Companies**

<b>Sector</b>	<b>Number of Companies</b>	<b>Min Turnover (in mil. €)</b>	<b>Max Turnover (in mil. €)</b>	<b>Average Turnover (in mil. €)</b>	<b>Number of Employees</b>
1. Aluminium production	7	1.09	46	12.95	710
2. Manufacture of plastics	4	12.69	47.10	16.32	426
3. Manufacture of paper and paperboard	4	.24	32.59	8.53	254
4. Manufacture of paints, varnishes and similar coatings, mastics and sealants	2	3.26	7.60	5.43	154
5. Production of meat and poultry meat products	2	3.90	4.30	4.10	100
6. Manufacture of other food products	6	.77	5.05	1.50	150
7. Manufacture of other products of	4	2.27	7.60	5.74	318

wood					
8. Manufacture of cement	2	n/a	2.63	2.63	148
9. Other treatment of petroleum products	4	.67	21.24	5.47	114
10. Manufacture of other chemical products n.e.c <sup>a</sup>	2	n/a	31.10	31.10	261
11. Casting of light metals	2	.81	45.00	15.27	234
12. Other manufacturing n.e.c.	6	1.40	148.65	26.47	507

<sup>a</sup> non classified elsewhere

**Table 2: Exploring substantive implementation of ISO 14001**

<b>Literature</b>	<b>Concepts that capture substantive implementation of ISO 14001</b>	<b>Interview topics</b>
Allur et al. (2014)	<b>Plan</b> (Analyse current position/identify environmental aspects)	Identification of environmental aspects and environmental impact assessment
		Setting annual environmental targets, objectives and indicators
		Identification of legal and other normative requirements
Aravind and Christmann (2007) Bansal and Kistruck (2006)	<b>Do</b> (Integrate ISO 14001 in the everyday activities of the company)	Daily use of EMS documents
		Frequent executive meetings/ informal management meetings on ISO 14001
		Frequent meetings with employees
		Ease of access of EMS documents/ frequent updates of documents
		Avoidance of inappropriate or excessive documentation

Boiral (2011)		EMS designed to serve the firm's needs
Boiral and Henri (2012)		Clear duties and responsibilities/ Accurate environmental work instructions
Castka and Prajogo (2013)		Training/ awareness of the EMS/ continuous training
Christmann and Taylor (2006)		Sufficient resources for the implementation of ISO 14001
		Clear communication channels
		Awareness of the emergency preparedness and response procedure in case of accident
		Existence of major-non-conformances
		Awareness of environmental management procedures (i.e. air pollution, waste management, noise control)
Heras-Saizarbitoria (2011)	<b>Check</b> (Monitor and measure environmental performance)	Daily monitoring of ISO 14001 implementation
Lannelongue et al. (2013)		Monitoring of annual environmental targets, objectives and indicators
		Monitoring of the firm's environmental performance/ Frequency of internal audits
		Customer satisfaction and supplier evaluation
Perez-Batres et al. (2012)	<b>Act</b> (Correct flaws/ prevent potential problems)	Monitoring and measurement of environmental aspects
		Corrective and preventive actions related to ISO 14001 implementation
		Follow-up and system continuity/ Keeping the EMS system alive/ In-house enthusiasm for the intrinsic pertinence of ISO 14001
Yin and Schmeidler (2009)		Last minute preparation of the EMS before external audit/ Dependence on external consultants

**Table 3: Exploring factors influencing substantive implementation of ISO 14001**

	Literature	Factors influencing substantive implementation of ISO 14001	Interview topics
External Factors	Anton et al. (2004)	Government	Strictness of government regulation
	Barr (2004)		Sanctions
	Bray et al. (2011)		Government's ability to distinguish between companies substantively implementing ISO 14001 and ones that don't
	Carrington et al. (2010)		
	Darnall (2006)	End consumers	ISO 14001 requirements from end consumers
	Darnall and Carmin (2005)		End consumers' ability to distinguish between companies substantively implementing ISO 14001 and ones that don't
	Johnstone and Labonne (2009)		
	Lannelongue et al. (2013)	Business customers	Competitiveness of business environment
Young et al. (2010)	ISO 14001 requirements from business customers		
Internal Factors	Arora and Gangopadhyay (1995)	International Markets	Importance of doing business with international markets
	Bansal and Bogner (2002)	Cost reduction	Importance of cost reductions
	Heras-Saizarbitoria et al. (2011)	Improve efficiency/ Greater productivity	Importance of enhanced efficiency/ productivity
	Kesidou and Demirel (2012)		
	Lannelongue et al. (2013)	Profit maximisation	Importance of increased profits/ increase in sales
Melnyk et al. (2003)			

**Table 4: Code book**

	Code	Definition	Sources	References	Example from text	
Implementation type	Substantive	Plan	Text coded around issues of defining environmental aspects, setting environmental policy and objectives/ targets	16	81	“This is the latest version of our environmental policy. In it we express our thought into how to get better and our commitment towards our stakeholders” (Resp. 11).
		Do	Text coded around issues of integrating the documented environmental management system into daily business operations	16	70	“Last year we reduced our waste by 15%, we invested in new technology to cut down our emissions and eliminated any noise coming from our operations” (Resp. 5).
		Check	Text coded around issues of monitoring environmental performance and measuring this against the set objectives and targets.	16	66	“We constantly audit our procedures and assess our improvement. Here are the records related to our actions [she presented several documents to the interviewer]. Because we do what we do quite seriously, we are thinking to adopt the GRI framework so that we provide our stakeholders with credible and comparable information” (Resp.38).
		Act	Text coded around issues of major/ non-conformities, corrective/ preventive actions	16	59	“No major non-conformances were noted. Had we any, we wouldn’t be able to pass the external audits! From time to time we identify secondary non-conformances which we record and undertake actions for correcting them and preventing from happening again” (Resp. 12).
	Symbolic	Plan	Text coded around issues of defining environmental aspects, setting environmental policy and objectives/ targets	29	120	“Yes, we do have an environmental policy; it’s over there on that wall. None reads that actually” (Resp. 28)  “We’ve set objectives, targets and indicators; our consultant take cares of that!” (Resp. 4)
		Do	Text coded around issues of integrating the documented environmental management system into daily business operations	29	108	“ISO 14001 is too bureaucratic; Our consultants help us to pass the ISO 14001 external audits” (Resp. 42).
		Check	Text coded around issues of monitoring environmental performance and measuring this against the set objectives and targets.	29	69	“We know who is who; we know who gives certificates easily and who’s not. The current situation [he means the economic crisis] has made many to lower their standards. We contacted the appropriate certification body for our purposes and got the certificate without too much fuss” (Resp.44).  “To be honest we have two major non-conformities from last year. I am confident that our consultant will undertake all actions needed so that they won’t impose any

					problems in next external audit” (Resp. 19)
	Act	Text coded around issues of major/ non-conformities, corrective/ preventive actions	29	90	“Corrective/ preventive actions are too time-consuming. If we see a problem we solve it directly. Had we written all things down, we wouldn’t be able to sort out any flaws” (Resp. 8).
External factors	Public projects (government procurement projects)	Text coded around issues of state, national projects, public sector	33	425	“ISO 14001 certification is mandatory if you want to tender for public sector work” (Resp. 1).  “Public projects is a big deal, if not the only one nowadays [he implies the bad shape of the economy]. So, if ISO 14001 is what it takes to access these projects we will adopt it but we will not implement it” (Resp. 3)
	Government pressures	Text coded around issues of state, awareness, market, competition, monitoring, audits/ auditors, fines/ sanctions, Greek accreditation system (E.SY.D)	32	478	“The state could force companies implement environmental protection activities, but with what’s going on in the Greek economy prefers not to do so. Thus, I wouldn’t say that the state drives substantive implementation of ISO 14001” (Resp. 25).  “...The state does not truly care whether you implement ISO 14001 or not...Big companies continue to pollute because for them it is cheaper to be polluters than to invest and apply environmentally friendly practices. If the state was acting as it should, then we would not have cases of EMAS/ ISO 14001 certified companies polluting rivers like it happened in the Asopos river” (Resp. 18).
	Business customers’ pressures	Text coded around issues of industry sector, certificates, forces, requirements, information etc.	28	296	“We demand our business customers to apply environmental practices and comply with the ISO 14001 requirements” (Resp. 6).  “The leader in our sector got certified. This company doesn’t need ISO 14001; it doesn’t even need publicity to differentiate its position. For us... [pause]... this firm is the benchmark. The fact that this company got certified was a major driver for us to also obtain ISO 14001 certification” (Resp. 8).
	End consumer pressures	Text coded around issues of awareness, information, certification, competition, credibility, boycotts/ picketing	37	456	“We do think that our consumers perceive this [she means ISO 14001] as something positive. Nowadays with economic mess [she implies the economic crisis] even more” (Resp. 2).
Internal factors	Access to international markets	ISO 14001 is a prerequisite for operation into foreign markets	8	112	“Accessing a market nowadays presupposes that the company adopts the standards this market requires. For instance, if we want to export to European countries, apart from environmental management standards, we

					might need to adopt other management standards as well to demonstrate that we comply with market's requirements. The companies that export into these markets are certified....if we want to access these markets we also need to adopt certain standards" (Resp. 21)
	Cost reduction/ Efficiency improvements/  /Profit maximisation	Text referring to cost reductions, production, productivity, efficiency, profits, shareholders	10	178	<p>"These are turbulent times for our economy. We needed to adopt clever strategies that could drop our cost of production and maximize our profits." (Resp. 36).</p> <p>"I think the more you do [in the case of ISO 14001] the better for you...For instance, many companies apply Best Available Techniques [BATs]. Their decision, however, to adopt such practices is based on financial criteria...environmental performance is not of equal importance, especially nowadays [he implies the on-going financial crisis]" (Resp. 17).</p>

**Figure 1: Interplay between external and internal factors**

