

**A FRAMEWORK FOR THE INTEGRATION OF
ENVIRONMENTAL LEGITIMACY, ACCOUNTABILITY AND PROACTIVITY
(ELAP)**

**Bakhtiar Alrazi
Charl de Villiers***

Department of Accounting and Finance
The University of Auckland Business School, New Zealand

Chris van Staden
Department of Accounting and Information Systems
University of Canterbury, New Zealand

Paper submitted to the 6th Asia Pacific Interdisciplinary Research in Accounting (APIRA)
Conference 2010, Sydney, New South Wales, Australia

*Corresponding author:
c.devilliers@auckland.ac.nz

A FRAMEWORK FOR THE INTEGRATION OF

ENVIRONMENTAL LEGITIMACY, ACCOUNTABILITY AND PROACTIVITY (ELAP)

Abstract

Purpose - This paper shows linkages between three conceptually distinct, but interrelated dimensions of corporate environmental behaviour, namely environmental legitimacy, environmental accountability and environmental proactivity, in a single framework.

Design/methodology/approach - The framework takes a managerial perspective. It is developed with reference to prior studies, ranging from literature reviews to original research, on the determinants of corporate environmental actions and disclosures. The paper also discusses some of the measures used in the literature to proxy for the concepts in the framework.

Findings - The framework sets environmental legitimacy as the aim of an organisation in its environmental endeavours. To maintain legitimacy, organisations must ensure a reasonable level of stakeholder satisfaction. This requires attention to aspects of environmental performance and environmental reporting (environmental accountability), which in turn, require proper environmental management and accounting systems and stakeholder engagement (environmental proactivity). This proclivity (to be proactive) is determined by certain company, stakeholder and other characteristics.

Originality/value - Our framework is the first to explain the relationship between environmental legitimacy, environmental accountability and environmental proactivity. Secondly, the framework includes many characteristics that influence legitimacy, accountability and proactivity. Thirdly, we identify the strengths and weaknesses of the measures for legitimacy, accountability and proactivity used in the prior literature. The framework can be used, along with the measures discussed, in the design of future research.

Keywords - Environmental accountability, Environmental legitimacy, Environmental proactivity.

Paper type - Conceptual paper

1. Introduction

Environmental issues are at an all time high. Climate change, global warming, ozone depletion, species extinction, oil spills, overfishing and the like have received major media

attention. Furthermore, the signatures of environmental treaties including the Kyoto Protocol (1997), the United Nations Framework Convention on Climate Change (1992), the Montreal Protocol (1989), the Nitrogen Oxide Protocol (1988), the China Australia Migratory Bird Agreement (1986) and the Sulphur Emission Reduction Protocol (1985) attest to commitments by leaders around the globe to mitigate environmental problems.

In line with the increased attention being paid to, and concerns about environmental problems, there is a general perception that organisations' activities are to be blamed, albeit not entirely, for causing these problems. Moreover, this perception is not without its grounds. For instance, the Intergovernmental Panel on Climate Change (IPCC, 2007) reveals that the main cause of climate change is the emissions of greenhouse gas (GHG), including carbon dioxide (CO₂) emissions. Furthermore, the International Energy Agency (IEA, 2009) claims that, in 2007, the electricity sector alone contributed 41% of the emissions, followed by the transportation sector (23%) and the industrial sector (20%). In addition, as the general public become more aware of the constant degraded state of the environment, they have started to demand greater corporate environmental responsibility. This awareness has also led to legal actions and product boycotts against those organisations with poor environmental records. One example is the boycott campaigns organised by environmental groups against ExxonMobil, a large US multinational oil company, for causing the catastrophic oil spill in the Prince William Sound, Alaska and for not being serious in instituting efforts to combat global warming (Overby, 2005).

Various concepts have emerged in the extant literature to describe corporate environmental behaviour, or at least how organisations should conduct their operations. These include environmental legitimacy (for example, Bansal and Clelland, 2004; Aerts and Cormier, 2009; De Villiers and Van Staden, 2009), environmental accountability (for example, O'Riordan, 1989; Burritt and Welch, 1997; Al-Tuwaijri *et al.*, 2004) and environmental proactivity (for example, Gonzalez-Benito and Gonzalez-Benito, 2006; Wisner *et al.*, 2006). Despite this proliferation, none of the previous studies made an attempt to discuss how these concepts are similar and/or dissimilar, let alone to integrate them in a single framework and put them in a unified, meaningful context. This paper intends to make this contribution.

The objectives of our paper are threefold. Firstly, we develop a framework which incorporates three conceptually distinct but interrelated dimensions of corporate environmental behaviour: environmental legitimacy, environmental accountability and environmental proactivity (ELAP). An improved understanding of the interrelationships

between these concepts will ensure a more holistic approach in assessing corporate environmental behaviour. Secondly, we identify some characteristics and types of characteristics that influence corporate environmental behaviour. This provides a basis for future researchers to develop expectations and to identify possible gaps in the literature. Thirdly and finally, we discuss some of the measures used in the prior literature to proxy for the concepts in the framework. Hence, future research designs can be built around these measures.

The framework adopts a managerial viewpoint in its approach. It helps to explain some of, if not all, the reasons for corporate environmental behaviour, and develops an understanding of the means managers use to steer the organisation toward achieving its environmental goal(s). The framework identifies environmental legitimacy as the aim of the organisation in its environmental endeavours. To maintain environmental legitimacy, an organisation will manage the relationships with its influential stakeholders in order to secure their satisfaction. This requires attention to environmental performance and environmental reporting, the two components of environmental accountability. These, in turn, require environmental proactivity through environmental management and accounting systems, and stakeholder engagement. Furthermore, the inclination for an organisation to be proactive depends on certain factors encompassing company features (company size, internationalisation, position in the value chain, managerial motivations and attitude, strategic attitude, financial performance and position, organisational culture, and corporate governance), stakeholder pressure (media and regulators) and external factors (industry and geographical location).

The remainder of the paper is structured as follows. In section 2, we focus on defining the concepts, while we also discuss some of the measurements used as proxy for each concept. In section 3, we describe the links between the concepts and present the framework in diagrammatic form. Section 4 discusses the characteristics that influence legitimacy, accountability and proactivity. In section 5, we briefly describe the impact of our framework on financial performance and stakeholder pressure, before we conclude in section 6.

2. An overview of environmental legitimacy, accountability and proactivity

2.1 Environmental legitimacy – a corporate goal

According to Brønn and Vidaver-Cohen (2009), the motives for companies engaging in social responsibility initiatives can be legitimacy (image building), sustainability (altruism) or

bottom line (profitability). However, as they found in their study, legitimacy motives, which include “improve our image”, “be recognised for moral leadership” and “serve long-term company interests”, have emerged as the most important consideration. This is consistent with the Solomon and Lewis (2002) study which found enhancing corporate image as the main reason for corporate environmental disclosure (see also Adams, 2002), and the predominance of studies utilising legitimacy theory to explain the reporting practice (see for example, Deegan, 2002; Parker, 2005; Owen, 2008). Based on this evidence, we argue for environmental legitimacy as the aim of the organisation in its environmental endeavours.

2.1.1 Definition and scope of environmental legitimacy

Environmental legitimacy is “the generalised perception or assumption that a firm’s corporate environmental performance is desirable, proper, or appropriate” (Bansal and Clelland, 2004, p. 94). Bansal and Clelland (2004) further assert that an organisation earns legitimacy when its environmental performance conforms to the stakeholders’ expectations, including those of managers, customers, investors, and community members. In short, environmental legitimacy is achieved when stakeholders (or a group of stakeholders) are satisfied with the organisation’s environmental actions or behaviour.

Furthermore, environmental legitimacy can be factual as well as perceptual. It is factual whenever an organisation’s actions or behaviour are visible to the stakeholders. One such example is when a factory’s dumping activities become known to the employees and the surrounding community. In this sense, the definition of environmental legitimacy is based on something which is visible. However, environmental performance is not easily visible (Neu *et al.*, 1998; Hunter and Bansal, 2007), in particular to the stakeholders external to the organisation. This phenomenon results in environmental legitimacy based on mere perceptions. Therefore it depends to a large extent on the ability of the organisation to communicate with its stakeholders (Suchman, 1995). Hence, an organisation could achieve legitimacy by having extensive reporting, with or without a corresponding good environmental performance. Moreover, according to Lindblom (1993), organisations use four legitimating strategies. It can use disclosures to educate the relevant public on its intention to improve performance, change the public perceptions regarding its performance, shift the public attention away from the current problem, or change the public expectation about its performance. Additionally, Suchman (1995) asserts that an organisation can still achieve legitimacy when a departure from societal norms is unique or in isolation (i.e. non-recurring in nature), has gone unnoticed (e.g. the environmental problems have not been brought into

the public domain), or is without consensus public disapproval (the primacy of collective values instead of individuals' values). This brings us to the discussion on the measures of environmental legitimacy used in previous studies.

2.1.2 Measures for environmental legitimacy

The most commonly used measure of environmental legitimacy is the extent of media coverage (for example, Bansal and Hunter, 2003; Bansal and Clelland, 2004; Clarkson *et al.*, 2008; Aerts and Cormier, 2009). This is operationalised by using the Janis-Fadner coefficient of imbalance. The value ranging from -1.0 to +1.0, with a value of +1 indicates a high presence of favourable articles while, -1.0 indicates a high presence of unfavourable articles. In arguing for this measure, Bansal and Clelland (2004) claim that media articles have been used in prior research to assess investors' reaction and are used primarily by investment fund managers in assessing environmental legitimacy.

However, they also pointed out several problems that can make the measure inadequate. Firstly, there is an issue of which database source (and thus media publications) to use. For instance, Bansal and Clelland (2004) used the Wall Street Journal, Clarkson *et al.* (2008) used the Factiva database and Aerts and Cormier (2009) used the ABI/Inform Global database. Essentially, different media sources may have different levels of credibility and reliability. This further complicates the comparison of findings from one study to another. Secondly, it could be that some of the media coverage actually represents summaries of press releases or other corporate documents that may not indicate the extent of satisfaction of the media (as a stakeholder group), which is the basis of our framework. Other than those problems, studies that used media coverage so far have focused on the U.S. and Canada. Thus, it is far from certain as to whether this measure will be feasible in a cross country study. Finally, in a study by Gago and Antolin (2004), the media was ranked as among the stakeholder groups with the least 'legitimate' demands, whilst in Neu *et al.* (1998), environmental criticisms by the media caused lower environmental disclosure by the companies. This may raise a question on the use of media coverage as a 'legitimate' measure of stakeholders' satisfaction (or environmental legitimacy).

An alternative is to use questionnaire surveys to determine environmental legitimacy. For example, Bortree (2009) conducted an online experiment involving 289 undergraduate students at a university to gauge their perception of a company's television advertisement on the environmentally friendly aspect of its new products. Here, the students acted as the general public or potential customers to rate the campaign made by the company (which is

also a form of environmental reporting). However, since the study only used a particular stakeholder group, and students as surrogates, it may affect the external validity of the findings. Future researchers may need to consider expanding the scope of stakeholders. Furthermore, as conducting a questionnaire survey involves huge amounts of cost and time, the feasibility of this type of data collection method also needs to be carefully considered.

Another measure that may be of relevance to proxy for environmental legitimacy is the number of awards obtained for excellence in corporate environmental performance and reporting. Nowadays, various organisations provide awards to companies that achieve a high quality of environmental reporting. Likewise, companies are rewarded for their achievements in environmental performance, including for example, the U.K. Green Business Awards and the Malaysian Prime Minister's Hibiscus Award. Since the number of awards is possibly limited (as not all companies have the chance to win the awards in a particular year) researchers may consider other variations including the number of shortlist occurrences.

2.2 Environmental accountability – the outcome

2.2.1 Definition and scope of environmental accountability

The accountability concept entails “the duty to provide an account (by no means necessarily a financial account) or reckoning of those actions for which one is held responsible” (Gray *et al.*, 1996, p. 38). Gray *et al.* (1996) further assert that accountability renders two types of responsibility, namely responsibility for actions and responsibility to report. In the context of the natural environment, this means that organisations must not only be environmentally responsible by preserving the natural environment and/or minimising the environmental impacts of their activities, but they must also report any efforts undertaken in this regard to the public.

Several definitions of environmental accountability were offered in the prior literature. O’Riordan (1989, p. 141) defines environmental accountability as “a metaphor for socially responsible management practice, sanctioned by regular public reporting and by demonstrable responsiveness to the public interest”. Meanwhile, Burritt and Welch (1997, p. 534) define environmental accountability as “the actions made on behalf of organisations and the impacts of resulting activities on ecological systems”. They further assert that the “environmental accountability mechanisms...cannot function without information being provided to stakeholders about actual and potential environmental performance” (p. 541).

Other studies used this concept, although without trying to define it in a systematic manner. Al-Tuwajri *et al.* (2004, p. 447) affirm that corporations must conduct business

within the norms and expectations of the society which is increasingly demanding greater environmental accountability through “heightened public scrutiny of both the firm’s environmental performance and its public disclosure of that performance”. Meanwhile, Shafer (2006) and Fukukawa *et al.* (2007) adopted the description of environmental accountability used by the Canadian Democracy and Corporate Accountability Commission in their questionnaire surveys. The respondents were asked whether corporations and their executives should be held accountable on environmental issues (‘performance’ component) and whether the government should adopt standards for environmental accountability and force corporations to publish what they are doing to meet the standards (‘reporting’ component).

In summary, it can be deducted that environmental accountability is a concept encompassing both environmental performance and environmental reporting. Thus, in this study, we define environmental accountability as the extent to which an entity acts responsibly towards the natural environment and reports on its environmental performance. However, it is of importance to highlight that we use environmental accountability here to identify the components of the concept, i.e. environmental performance and environmental reporting, rather than environmental accountability as a theory. This is essential as legitimacy, the concept elucidated earlier, is by its nature a positive and managerialist theory (De Villiers and Van Staden, 2006; Deegan, 2006), and therefore explains corporate environmental behaviour from the viewpoint of the corporation. By contrast, accountability as a theory is normative and stakeholder-centered (Gray *et al.*, 1996; Deegan, 2006) and therefore is not useful in explaining corporate behaviour. This brings us to the discussion of environmental performance and environmental reporting.

2.2.2 Environmental performance

Environmental performance, also referred to as the environmental results measurement in Miakisz and Miedema (1998), reflects the effects company operations have on the environment. These include, among others, materials, energy and water usage; the impacts of the organisation’s activities on the biodiversity; emissions, effluents and waste discharges; impacts of products and services; and compliance to environmental regulations (GRI, 2009). This interpretation also encompasses environmental impacts and regulatory compliance aspects in Ilinitch *et al.* (1998) and environmental impact indicators and environmental condition indicators in Kolk and Mauser (2002).

Ilinitch *et al.* (1998) proposed four aspects of environmental performance: (1) organisational systems – the organisational processes in place including environmental audit programs, accounting systems and the environmental management system, (2) stakeholder relations – the interaction between the company and its various stakeholders including reporting on the environment and engaging stakeholders to improve actual performance, (3) regulatory compliance – the organisational compliance to environmental regulations, and (4) environmental impacts – including pollution, toxic releases, oil spills, and long-term impacts on the ecosystem and community health.

Based on the ISO 14031 standard, the Global Reporting Initiative guidelines and the eco-efficiency guide of the World Business Council for Sustainable Development, Kolk and Mauser (2002) divided environmental performance into three aspects, namely environmental management indicators, environmental performance indicators (which is further divided into two – environmental operational indicators and environmental impact indicators) and environmental condition indicators. Finally, the performance measurement aspect proposed by Miakisz and Miedema (1998) is relatively similar to that of Ilinitch *et al.* (1998). However, environmental impacts and regulatory compliance aspects were combined to make up the environmental results measurement aspect. The other two aspects are environmental process or systems assessment (the extent of environmental management systems in place) and customer satisfaction (the effectiveness of the company's environmental communication program).

There are three commonly used variables to proxy for corporate environmental performance: independent rankings/ratings, actual environmental performance data and perceptual performance derived from questionnaire surveys. The independent rankings/ratings are mostly developed by an organisation with authority and/or interest in environmental matters. These include, among others, by the U.S. Council on Economic Priorities (see for example, Ingram and Frazier, 1980, Wiseman, 1982; Freedman and Wasley, 1990; Vafeas and Nikolaou, 2001), the U.S. KLD Research & Analytics Inc. (see for example, Cho and Patten, 2007; De Villiers and Van Staden, 2009; De Villiers *et al.*, 2009), the Australian Conservation Foundation (Elijido-Ten, 2007), the New Zealand Centre for Business and Sustainable Development (Van Staden and Hooks, 2007), the U.K. Ethical Investment Research Services (see for example, Brammer *et al.*, 2006), the U.K. Management Today's Britain Most Admired Companies (Elsayed, 2006) and the Bulgarian Ministry of the Environment (Judge and Elenkov, 2005).

There are several arguments presented for the use of rankings/ratings in measuring environmental performance. First, they are released by organisations with authority which render higher credibility than other measures. Second, the ratings/rankings were derived after a thorough research process (Brammer *et al.*, 2006) and verification involving the research team members as well as other groups of stakeholders, for example, environmental campaigners (ACF, 2001). Third, they cover a wide range of performance. For example, the rankings developed by the Australian Conservation Foundation (ACF) and the U.K. Ethical Investment Research Services (EIRIS) include criteria for environmental performance as well as for environmental management systems and environmental reporting. Furthermore, a large body of academic research has relied on some of these measures. For example, more than 40 peer-reviewed articles, representing a variety of academic fields (including finance, economics and management) have used the KLD data to research companies' social, environmental and governance performance.

However, there are some drawbacks inherent in these measures. Firstly, critics argue that the inclusion of the environmental reporting in some of the ratings/rankings may not be appropriate (Al-Tuwaijri *et al.*, 2004). This assertion is supported by evidence in the prior literature which suggest that poor environmental performers disclosed environmental information to a greater extent (for example, Patten, 2002a, 2002b; Brammer and Pavelin, 2006; Cho and Patten, 2007; De Villiers and Van Staden, 2009). Thus, environmental reporting and environmental performance warrant separate assessment. Secondly, the ratings/rankings are normally country-specific (e.g. CEP and KLD ratings are for companies operating in the U.S., the NZCBSD ranking is for companies operating in New Zealand) and/or targeted to certain companies (e.g. only large companies were included in the ACF and NZCBSD rankings). Therefore, it is difficult to determine and therefore compare the environmental performance of companies from different countries.

Several studies used actual environmental performance data including recycling ratio (for example, Al-Tuwaijri *et al.*, 2004; Clarkson *et al.*, 2008), environmental violations (for example, Deegan and Rankin, 1996; Neu *et al.*, 1998; McKendall *et al.*, 1999; Kassinis and Vafeas, 2002; Kent and Chan, 2003; Brammer and Pavelin, 2006, 2008; Gadenne and Ladewig, 2007; Freedman and Stagliano, 2008) and toxic releases or emissions (for example, Patten, 2002a, 2002b; Freedman and Jaggi, 2004, 2005; Walden and Stagliano, 2004; Clarkson *et al.*, 2008; Freedman and Stagliano, 2008; Aerts and Cormier, 2009; De Villiers and Van Staden, 2009) to proxy for environmental performance.

While these measures are reliable, there are some issues that researchers need to consider. Firstly, most of these studies used only one or two performance measures to proxy for corporate environmental performance. This may limit the scope of environmental performance which is multidimensional (Brammer *et al.*, 2006; Henri and Journeault, 2010) and thus may not represent the firms' environmental performance as a whole. Due to this problem, some studies have included several measures of environmental performance. Doonan *et al.* (2005) used seven proxies for environmental performance namely, the biochemical oxygen demand (BOD) compliance rate, the total suspended solids (TSS) standards, spills, use of chlorine, fines and penalties, air emissions and the use of alternative sources of energy. Moreover, Burnett and Hansen (2008) used the percentage of sulfur in coal, percentage of sulfur in petroleum, percentage of coal used as fuel, number of scrubbers installed, and permits usage. Additionally, Cormier and Magnan (1999) included pollution, fines and penalties, orders to conform and legal actions.

Secondly, while previous studies obtain the data from publicly accessible databases, this does not necessarily indicate that the data is publicly available in other countries. Usually, the data is treated as confidential by the relevant authorities or not disclosed by the companies themselves. Finally, as a result of this second limitation, it is difficult to make an intra- or inter-country comparison. Nonetheless, in August 2008, Carbon Monitoring for Action (CARMA) - a non-profit organisation developed and maintained by the Confronting Climate Change Initiative, Center for Global Development, Washington DC - released a database on the level of CO₂ emissions of over 4,000 power companies and other non-power companies worldwide. The database contains data on CO₂ emissions, emissions intensity, generation capacity, number of power plants and generation type for about 4,000 power companies worldwide and also thousands of other non-electric utility companies. The main advantage of CARMA over other databases (e.g. KLD and EIRIS) is that the data is publicly available (free) and for companies throughout the world.

To overcome the limitation inherent in both measures mentioned above, some researchers had resorted to the third measure of environmental performance, which is obtained through questionnaire surveys (for example, Lefebvre *et al.*, 2003; Annandale *et al.*, 2004; Wisner *et al.*, 2006; Rao *et al.*, 2009; Henri and Journeault, 2010). Henri and Journeault (2010) and Rao *et al.* (2009) measured environmental performance based on the perceived benefits of environmental practices; Wisner *et al.* (2006) asked the respondents to rate their environmental performance relative to competitors; and Lefebvre *et al.* (2003) assessed the environmental performance of companies in terms of the product life cycle management

score and the extent of environmental management systems implementation. Furthermore, Annandale *et al.* (2004) used only general environmental performance as the indicator (without providing any detailed aspect of the performance).

The main problem inherent in this measure is subjectivity (and bias) (Kassinis and Vafeas, 2002) as it is based on the respondents' perceptions. Several precautionary measures have been undertaken by the previous researchers though. For instance, to check for the validity of the responses, Henri and Journeault (2010) compared their findings with the data from the National Pollutant Release Inventory. They found that companies which claimed to benefit the most from the environmental practices were found to have lower levels of pollution. Furthermore, Rao *et al.* (2009) required the respondents to provide data on environmental performance indicators such as raw material efficiency, recycling rate and energy consumption per output. Nonetheless, there appears to be a construct validity issue in Henri and Journeault's (2010) study. Apparently, the items included in their questionnaire survey instrument are reflective of companies' operational performance. Items such as reduction in the material costs and process/production costs; increased process/production efficiency, productivity and product quality; and improved employee morale, company reputation and goodwill are far from measuring the impacts of the organisations' operations on the environment. This in turn affects the validity and reliability of their findings.

2.2.3 *Environmental reporting*

Another component in the environmental accountability concept is environmental reporting. There are several definitions provided in the literature as to what constitutes environmental reporting. For example, Wilmshurst and Frost (2000, p. 16) define environmental reporting as "those disclosures that relate to the impact company activities have on the physical or natural environment in which they operate". Berthelot *et al.* (2003, p. 2) define environmental reporting as "the set of information items that relate to a firm's past, current and future environmental management activities and performance. [It]...also comprises information about the past, current and future financial implications resulting from a firm's environmental management decisions or actions." Thus, disclosures are considered as environmental information if it contains information on, but not limited to, pollution, policy, audit, product and process related, financial data, sustainability, environmental aesthetics, energy efficiency and environmental education (Hackston and Milne, 1996; Williams, 1999; Williams and Ho, 1999; Deegan *et al.*, 2002). More importantly, this information can take on many forms, e.g. qualitative statements, quantitative facts or

assertions, financial statement figures or footnotes (Berthelot *et al.*, 2003). Furthermore, the information can be reported either in the annual report, stand-alone reports, press releases, company websites, CD-ROMs and various other communication media (Zeghal and Ahmad, 1990; Tilt, 1994, 2008; Adams, 2002).

Content analysis is the most widely used method of measuring the extent of environmental reporting. A researcher may look at the decision to report on the environment, and the quantity and quality of the information. At the very brief, but of course the less informative level, a researcher may examine whether companies are reporting the information or not (for example, Brammer and Pavelin, 2006; Buniamin *et al.*, 2008). This measure however does not capture the extent and richness of the information.

Secondly, the quantity of the disclosure can be measured using one of the following: number of words, number of sentences, number or proportion of pages (see for example, Gray *et al.*, 1995; Hackston and Milne, 1996; Milne and Adler, 1999; Unerman, 2000), line counts (Wiseman, 1982; Choi, 1999; Patten, 2002b) or number of theme occurrence (Walden and Stagliano, 2004). Sentences are preferred rather than words, as sentences can infer meaning and thus reduce the subjectivity involved in the interpretation of environmental information (Gray *et al.*, 1995; Hackston and Milne, 1996; Milne and Adler, 1999). Furthermore, sentences can overcome issues concerning the treatment of the blank parts of a page and differences in font sizes and margins, inherent in a page-based measurement (Gray *et al.*, 1995). At its simplest, quantity deals with the issue of 'how much is being disclosed' (Walden and Schwartz, 1997; Raar, 2007) and thus signifies the importance of an issue to an organisation (Neu *et al.*, 1998).

The extent of reporting can also be measured by its quality. This can be further broadly divided into qualitative and quantitative analyses of the quality of reporting. According to Gray *et al.* (1995), the problem associated with the quantity measures can be mitigated by examining the type of the data communicated. This includes the evidence (i.e. monetary, quantitative, and declarative) and the news type (i.e. positive, negative and neutral). In addition, quantitative assessment of the quality of reporting involves the use of disclosure indices to assess, compare and explain differences in the extent and comprehensiveness of disclosure (Guthrie and Abeysekara, 2006). In essence, quality goes deeper by addressing issues of 'what is being reported' (Walden and Schwartz, 1997; Walden and Stagliano, 2004) and 'how the information is measured' (Raar, 2007). Of these two types of quality assessment, quantitative assessment is argued to be more effective. Jones and Alabaster (1999) assert that a disclosure index can be used to rate, rank and benchmark corporate

reports. Additionally, since a qualitative description can be very subjective, the use of a disclosure index leads to a more objective measurement of the information contained in the reports (Wiseman, 1982). Furthermore, developing a disclosure index involves two important steps, identification of the items to be included, and designing a scoring system (for example, Wiseman, 1982; Van Staden and Hooks, 2007; Clarkson *et al.*, 2008). Under the identification of the items, whenever possible, a researcher must make a clear distinction between mandatory and voluntary items as it has, to a certain extent, policy implications. To score the reports, a researcher may need to consider using either a weighted or un-weighted disclosure index (with a weighted index, the relative importance of a disclosure item to another item is weighed) and either a dichotomous scoring (where for each item disclosed, a score of one is assigned, and otherwise zero) or polychotomous scoring (using ordinal scores, e.g. 0-4 to differentiate the extensiveness of the information).

2.3 *Environmental proactivity – the process*

Gonzalez-Benito and Gonzalez-Benito (2006, p. 88) define environmental proactivity as “the voluntary implementation of practices and initiatives aimed at improving environmental performance”. It refers to a ‘process’, rather than an ‘outcome’. It is important to make this difference as it will affect the way a researcher measures environmental proactivity (the process) and environmental accountability (the outcome) (see also Doonan *et al.*, 2005; Van Staden and Hooks, 2007; Rao *et al.*, 2009). Environmental proactivity is not new in the literature. In Ilinitch *et al.* (1998), environmental proactivity is akin to the organisational system and stakeholder relations aspects of performance. Furthermore, in Kolk and Mauser (2002), environmental proactivity represents environmental management indicators and environmental operational indicators. Finally, GEMI (1998) considers environmental proactivity as a ‘lead indicator’ (in-process measure), and environmental accountability as a ‘lag indicator’ (end-of-process measure).

Gonzalez-Benito and Gonzalez-Benito (2006) also distinguish environmental proactivity into three components, namely planning and organisational practices (the environmental management systems in place), operational practices (the design and development of more environmentally conscious products and processes) and communicational practices (the communication of organisation’s environmental impacts to the public). As the framework regards environmental proactivity as a ‘process’, we combine the first two aspects into a single component i.e. environmental management systems. In addition, we include another component, environmental accounting, which was not considered by previous authors. We

also refine the definition of the third component as stakeholder engagement. The next paragraphs provide a brief description of each component of environmental proactivity.

2.3.1 Environmental management systems

Environmental management systems “involves the formal systems and database which integrates procedures and processes for the training of personnel, monitoring, summarising, and reporting of specialised environmental performance information to internal and external stakeholders of the firm” (Melnyk *et al.*, 2003, p. 332). This includes having an environmental policy, clear objectives and long-term environmental plans, well-defined environmental responsibilities, a committee/department to manage environmental issues, training programmes and systems for measuring and assessing environmental performance (Gonzalez-Benito and Gonzalez-Benito, 2006).

Environmental management systems can be evaluated based on the extent of its implementation (for example, Lefebvre *et al.*, 2003; Wisner *et al.*, 2006; Van Staden and Hooks, 2007). This involves having a list of the scopes within the environmental management systems and then using the list (as a checklist) to compare with what is currently being practiced in the organisations. Meanwhile, other methods of assessing environmental management systems used in the prior literature include the certification of the systems (Lefebvre *et al.*, 2003; Melnyk *et al.*, 2003; Sumiani *et al.*, 2007; Wahyuni *et al.*, 2009), the existence of a separate environmental committee or department (McKendall *et al.*, 1999; Vafeas and Nikolaou, 2001; Kent and Chan, 2003; Wahyuni *et al.*, 2009) and the integration of environmental matters in the mission or vision statement (Kent and Chan, 2003; Eljido-Ten, 2007).

2.3.2 Environmental accounting

Environmental accounting “can be taken as covering all areas of accounting that may be affected by the business response to environmental issues” (Gray and Bebbington, 2001, p. 7). These include financial accounting (e.g. accounting for contingent liabilities/risks, accounting for asset revaluations, the development of accounting techniques in ecological terms), management accounting (e.g. business plans including new costs, capital items and revenue projections, cost analysis in key areas such as energy, waste and environmental protection, investment appraisal, cost/benefit analysis of environmental improvement, performance measures and incentives), information systems (e.g. development of new accounting and information systems) and auditing (e.g. incorporating environmental auditing

into internal audit programs, environmental impact assessment, independent attestation of environmental information) (Frost and Wilmshurst, 2000; Gray and Bebbington, 2001; Burritt *et al.*, 2002; Henri and Journeault, 2010).

Based on this description, it is obvious that environmental accounting is distinct from conventional accounting as it considers both monetary and physical environmental information. Several environmental accounting measures used in previous studies are the amount of environmental investments, the yearly operating cost of environmental protection (Rao *et al.*, 2009), eco-control (Henri and Journeault, 2010) and the extent of environmental accounting systems implementation (Frost and Wilmshurst, 2000; Frost and Seamer, 2002).

2.3.3 Stakeholder engagement

Another area that is receiving considerable attention in the literature is stakeholder engagement. The Institute of Social and Ethical AccountAbility (1999, p. 91) defines stakeholder engagement as “the process of seeking stakeholder views on their relationship with an organisation in a way that may realistically be expected to elicit them”. It is imperative for the organisation to understand the reasonable expectations and interests of its stakeholders. Methods of engagement vary. This includes surveys, focus groups, community panels, written communication and management/union structures (GRI, 2009). Despite a dearth of the appropriate measures for stakeholder engagement in the literature, Zadek and Raynard (2002) suggest three relevant dimensions to assess the quality of stakeholder engagement. These are procedural (i.e. how the engagement was undertaken), responsiveness (i.e. whether the organisation responded in a responsible manner) and outcomes (i.e. what happened as a result of the engagement). These criteria are also consistent with the recommendations for disclosures by the GRI (2009).

Finally, it is worth noting that some of the existing environmental performance ratings (for example, the NZCBSD and the ACF) can also be used to measure the overall environmental proactivity of an organisation due to their heavy reliance on the ‘process’-based measure instead of the ‘outcome’-based measure. Having discussed the three concepts (environmental legitimacy, environmental accountability and environmental proactivity), the discussion now turns to how they are interrelated.

3. The framework

Gonzalez-Benito and Gonzalez-Benito (2006) provide a discussion on the determinants of environmental proactivity. Diagram 1 provides a summary of the determinants.

[TAKE IN DIAGRAM 1]

Based on their work, the literature reviewed and other relevant literature, our framework unifies the three concepts, and we use the term ELAP (Environmental Legitimacy, Accountability and Proactivity) (see Diagram 2). Our framework differs from the work of Gonzalez-Benito and Gonzalez-Benito (2006) in the following ways. Firstly, our framework includes environmental legitimacy and environmental accountability concepts and components. Secondly, our framework redefines the scope of environmental proactivity to include environmental accounting and stakeholder engagement. Thirdly, our framework adds some other variables, particularly within the company features category, that were not included in their framework but are significant either from previous empirical analyses or theoretical stances. Finally, we expand the stakeholder pressure variable to consider the importance of the role of the media and the regulators, as well as the ability of other stakeholders to mobilise these two influential stakeholders.

Essentially, environmental legitimacy represents the aim for corporations in their environmental endeavours. This is achieved when there is congruence between the corporate actions and the environmental stakeholders' expectations (Bansal and Clelland, 2004). The inclusion of this concept is also consistent with Miakisz and Miedema (1998) who argue that companies' environmental achievements need to be assessed in terms of customer satisfaction (but of course, we replace 'customer' with 'stakeholder' as the latter is more appropriate as stakeholders of companies are multiple, not only customers).

[TAKE IN DIAGRAM 2]

The extent of corporate environmental performance and environmental reporting can influence the degree of environmental legitimacy (Aerts and Cormier, 2009) (this is depicted by the arrow “”, linking environmental accountability and environmental legitimacy). Similarly, as shown in the literature, environmental performance can have a significant influence on the volume, quality, type and nature of environmental information disclosed, with some studies finding a positive influence (Al-Tuwaijri *et al.*, 2004; Van Staden and Hooks, 2007; Clarkson *et al.*, 2008) while others find a negative influence (for example, Deegan and Rankin, 1996; Patten, 2002b; Cho and Patten, 2007; De Villiers and Van Staden, 2009). These findings substantiate the arguments that the legitimating strategy can be either proactive or reactive (see also Sethi, 1975; Lindblom, 1993).

Furthermore, Al-Tuwaijri *et al.* (2004) and Annandale *et al.* (2004) demonstrate the possible influence of environmental reporting on environmental performance. According to Al-Tuwaijri *et al.* (2004), stakeholders could base expectations regarding a company’s environmental performance on environmental disclosures made in prior years. From another viewpoint, disclosures could be used to inform the public about the organisation’s future environmental performance. Additionally, Annandale *et al.* (2004) suggest that environmental reporting improves monitoring and data collection, provides a good internal management tool and enables the management to focus on critical environmental issues. These advantages in turn would result in superior environmental performance (all these possible relationships are depicted by the arrow “”, linking EA1 and EA2).

The framework also demonstrates that environmental proactivity could influence the extent of corporate environmental accountability (this is depicted by the arrow “”, linking environmental proactivity to environmental accountability). Prior studies found that environmental management practices have positively influenced corporate environmental performance (Annandale *et al.*, 2004; Elsayed, 2006; Wisner *et al.*, 2006; Henri and Journeault, 2010) and environmental reporting (Frost and Seamer, 2002). Studies based on the extent of ISO 14001 certification found similar results (for example, Lefebvre *et al.*, 2003; Melnyk *et al.*, 2003; Sumiani *et al.*, 2007; Wahyuni *et al.*, 2009). In addition, two aspects receiving increased attention are the presence of an environmental mission or vision statement (Kent and Chan, 2003; Eljido-Ten, 2007; Wahyuni *et al.*, 2009) and the existence of a separate committee or department on environmental matters (McKendall *et al.*, 1999; Vafeas and Nikolaou, 2001; Kent and Chan, 2003; Eljido-Ten, 2007). In essence, an environmental mission or vision statement serves to provide the organisation with objectives, guiding principles and values, which are important in directing its strategic decision making

and actions (Kent and Chan, 2003). Furthermore, establishing an environmental committee enables the organisation to monitor corporate environmental policy (Vafeas and Nikolaou, 2001; Wahyuni *et al.*, 2009), oversee its ecological impacts (McKendall *et al.*, 1999; Bansal and Roth, 2000) and continuously monitor and manage its relationship with key stakeholders (Kent and Chan, 2003; Elijido-Ten, 2007).

Within the limited literature on the influence of environmental accounting on environmental performance, several studies found that the amount of environmental investment and the yearly operating cost of environmental protection (Rao *et al.*, 2009) and eco-control (Henri and Journeault, 2010) are associated with better environmental performance. Likewise, Frost and Seamer (2002) found that the level of environmental accounting system implementation (based on an eight-item checklist instrument) has positively influenced the volume of environmental reporting among the companies studied. These findings indicate that the environmental accounting system enables organisations to measure and control their environmental performance and facilitates the generation and dissemination of such information to both internal and external stakeholders (Frost and Seamer, 2002; Henri and Journeault, 2010).

Furthermore, Campbell (2007) posits that companies that are actively engaging their stakeholders appear to better appreciate the concerns of these stakeholders and will be more likely to take their concerns into account when it comes to making corporate policy. Throughout this process, the interests of various parties are often redefined, and management starts to consider feasible environmentally responsible practices. Attention to stakeholder dialogues would also enable an organisation to identify issues, including those related to environmental matters, which would not otherwise be captured and reported on (Adams, 2002). Thus, it is more likely that stakeholder engagement has positive impacts on environmental performance and environmental reporting.

Although there is no empirical analysis to date that link stakeholder engagement and the environmental management system and environmental accounting, it is expected that by engaging stakeholders (for example, government, auditors, environmental groups), an organisation can improve both the environmental management system and the environmental accounting system (This is depicted by arrows “ $\xrightarrow{4}$ ”, linking EP3 to EP1 and EP2). Furthermore, companies that have proper environmental management and accounting systems will be more likely to engage their stakeholders (This is depicted by arrows “ $\xrightarrow{5}$ ”, linking EP1 and EP2 to EP3).

Moreover, the relationship between the environmental management system and environmental accounting, and environmental reporting can also be in the opposite direction. As argued by Frost and Seamer (2002), the reporting function will drive more comprehensive environmental management and accounting systems. The reason for this is that companies reporting on the environmental performance may find it necessary to manage their operations in order to meet the expectations established by the reporting process. Thus, we draw arrows “⁶→”, linking EA2 and EP1 and EP2.

The final component of our framework is the determinants and/or characteristics that influence corporate environmental behaviour. The next section describes these determinants.

4. Determinants of environmental accountability and environmental proactivity

Gonzalez-Benito and Gonzalez-Benito (2006) divided the determinants of environmental proactivity into three main categories. The first category is company features comprising company size, internationalisation, position in the value chain, managerial attitude and motivations and strategic attitude. Generally, they suggest that larger size, multinational status, closeness to end consumers, top management support and motives, and a tendency to be proactive to market stimuli are associated with a higher degree of involvement in environmental initiatives.

The second category is external factors which include industrial sector (industry) and geographical location. In essence, companies operating in sensitive industries (i.e., industries with the greatest environmental risk, for example mining, oil, chemicals and paper) have a high tendency to be more proactive in dealing with environmental issues. Additionally, industry concentration could also be an important factor. Companies in more concentrated industries are able to pass on price increases (due to environmental investments) to their customers and have more benefits and resources to engage in environmental initiatives. Similarly, companies operating in less concentrated industries may see environmental proactivity as an opportunity or differentiation strategy and thus obtain a competitive advantage. With regard to geographical location, the environmental risk is lower if companies are located far away from large cities and natural reserves, or within industrial estates. Additionally, although companies may be located within large cities, the fact that they provide significant employment opportunities to the surrounding community, will moderate the environmental risk facing the companies. Furthermore, prior cross country studies also provide evidence on the influence of country of origin in shaping corporate environmental

behaviour and actions (for example, Williams, 1999; Buhr and Freedman, 2001; Matthews and Reynolds, 2001; Holland and Foo, 2003; Freedman and Jaggi, 2005).

The third category, regarded as the most important category, is stakeholder pressure. In general, the greater the pressure various stakeholders impose on companies, the higher the possibility of the companies engaging in environmental proactivity. Furthermore, proponents of legitimacy theory (for example, Deegan and Rankin, 1996; Walden and Schwartz, 1997; Patten, 2002a, 2002b; Cho and Patten, 2007) suggest that the extent of corporate environmental behaviour is a function of exposure to public pressure in the social and political environment. Walden and Schwartz (1997) further claim that public pressure can arise from dissatisfaction from the general public (or a group within the public), a new or proposed political action, and/or an increased regulatory oversight. On this basis, we identify the two most powerful forces that can be mobilised by stakeholders to ensure that they are able to influence corporate environmental behaviour: the media and regulators. We show in the next paragraph that stakeholder groups who have the ability to mobilise the media and/or regulators, are taken seriously by companies.

According to Brown and Deegan (1998), the media can be used to shape, and in turn represent, the community's concern on organisational performance. They found that higher levels of media attention regarding companies' environmental performance is associated with higher levels of environmental disclosures (see also Deegan *et al.*, 2002; Patten, 2002a; Cormier and Magnan, 2003, 2004; Aerts and Cormier, 2009). Moreover, the importance of regulators as an agent of change is evident in Wilmshurst and Frost (2000), Solomon and Lewis (2002) and Nik Ahmad and Sulaiman (2004) who all found that meeting legal requirements and the need to pre-empt additional regulations to be the most important considerations in corporate environmental reporting decision. Furthermore, Kassinis and Vafeas (2002) observed a lower incidence of environmental lawsuits among companies located in a state with more stringent environmental regulations, showing companies' respect for regulation. In addition, Cho *et al.* (2006) found that poor environmental performers from industries with the greatest impacts on the environment were spending higher amounts on political contributions during an election cycle. This was done in an effort to gain political support from the candidates and thereby to reduce public policy pressure. The relationship between the determinants (company features, external factors and stakeholder pressure) and environmental proactivity is depicted by arrow “”.

Although the framework suggested by Gonzalez-Benito and Gonzalez-Benito (2006) is limited to the influence of these determinants on corporate environmental proactivity, there

are various studies in the literature that provide evidence on the direct influence of the determinants (usually treated as control variables in econometric models) on corporate environmental performance and environmental reporting. Thus, to highlight this, we draw an arrow “⁸→” to link the determinants to environmental accountability.

Gonzalez-Benito and Gonzalez-Benito (2006) go further by stating that certain factors (i.e. company size, internationalisation, position in the value chain, industrial sector and location) can potentially affect the level of pressure received from stakeholders (the relationships are depicted by arrows “⁹→”, linking CF1-CF3 and EF1 and EF2 to SP1 and SP2), while the remaining factors (i.e. managerial attitude and strategic attitude) are affected by the degree of such stakeholder pressure (the relationships are depicted by arrows “¹⁰→”, linking SP1 and SP2 to CF4 and CF5), which makes stakeholder pressure the most significant factor influencing corporate environmental behaviour. This is depicted in the Diagram 3.

[TAKE IN DIAGRAM 3]

From our literature review, we include several other factors (in particular, in the company features categories) that were found to have a significant role in determining corporate environmental performance and reporting in particular. These are discussed next.

4.1 *Financial performance and position*

The adoption of environmental initiatives usually requires a significant amount of investment. Obviously, less profitable firms have fewer resources to spare for these socially responsible activities (Waddock and Graves, 1997) and have fewer degrees of freedom in strategic choice (Azzone *et al.*, 1997; Wisner *et al.*, 2006). Likewise, highly leveraged firms may be less flexible in their strategies and actions as risky decisions may result in a higher probability of bankruptcy (Cormier and Magnan, 2003; Cormier *et al.*, 2005). By contrast, firms with low leverage have the discretionary ability to focus on organisational activities due to relatively fewer resources allocated to serving debt (Brammer and Pavelin, 2006). This flexibility allows financially sound companies to be more proactive towards environmental initiatives, and this, in turn, would result in better environmental performance compared to companies having financial difficulties (see for example, McKendall *et al.*, 1999; Vafeas and Nikolaou, 2001; Kassinis and Vafeas, 2002; Brammer *et al.*, 2006; Eljido-Ten, 2007; De Villiers *et al.*, 2009). However, from another perspective, having low profitability and/or high leverage could also entail that companies cannot afford to engage in environmental

misconduct which could lead to costly environmental lawsuits and eventually further impair their financial performance. In this regard, De Villiers *et al.* (2009) found that highly leveraged firms have a better environmental performance than their counterparts.

Likewise, the relationship between profitability and leverage, and environmental reporting is also difficult to predict based on the inconsistent findings offered in the extant literature. Highly profitable companies are argued to be more likely to participate in voluntary disclosures in order to be seen as environmentally responsive (Cormier *et al.*, 2005) and thus, to minimise public exposure. Additionally, Neu *et al.* (1998) claim that such disclosure is in fact necessary to convey a message to the stakeholders that profit was not achieved at the expense of the environment. Nonetheless, environmental disclosures can also be used, during unprofitable years, to downplay the issue of managerial competence (Neu *et al.*, 1998). Similarly, while several studies based on the information costs perspective found that low leverage companies provide greater extent of disclosure (see for example, Cormier and Magnan, 1999, 2003, 2004; Cormier and Gordon, 2001; Kent and Chan, 2003), Roberts (1992) posits the contrary. He asserts that companies with a higher level of leverage will face greater expectations from creditors, in particular banks (Scott and John, 2002; Thompson and Cowton, 2004), to report on their social responsibility activities, as environmental issues can affect the financial stability of an organisation. Thus, they would be expected to provide more extensive environmental disclosure (see also De Villiers and Van Staden, 2009). Studies that found results consistent with this expectation include Roberts (1992), Neu *et al.* (1998) and Clarkson *et al.* (2008).

4.2 Organisational culture

Culture has been defined by Hofstede (1984, p. 82) as “the collective programming of the mind which distinguishes the members of one group or society from those of another”. In an organisation, culture can be shaped through the patterns of thinking that “leaders [transfer] to their followers, and followers to their leaders” (Hofstede, 1984, p. 82). Hence, top management not only plays an important role in the strategic planning process, but also influences, even determines, the organisational culture (Wisner *et al.*, 2006). Conversely, the corporate culture reinforces the strategic direction of the organisation (Azzone *et al.*, 1997), although the success depends on effective communication between the top management and employees. For example, Judge and Elenkov (2005) found that the lack of shared or common perception among top management, middle management and frontline workers on the organisational culture have impeded environmental performance.

Several studies observed the influence of corporate culture on organisational performance. Adams (2002) highlight the importance of corporate culture in determining the organisational constituents involved in the decision making process pertaining to social and ethical reporting. Similarly, Haniffa and Cooke (2005) found that companies with Malay-dominated boards of directors (culture based on ethnicity background) provide greater extent of social reporting. Furthermore, Lefebvre *et al.* (2003) found that the existence of a total quality management program resulted in better environmental performance, although Bansal and Hunter (2003) did not find any association between ISO 9000 certification and early adoption of ISO 14001.

4.3 Corporate governance

The internal context of an organisation influences social reporting (Adams, 2002). This includes corporate governance, which is “the system by which companies are directed and controlled” (Cadbury, 1992). McKendall *et al.* (1999) suggest that there are several reasons to expect a relationship between corporate governance and corporate environmental performance (and reporting). First, one of the roles of directors is to ensure firms’ compliance with any legislation, including environmental legislation and regulation. Second, if the protection of the interests of other stakeholders is a governance issue, this implies that managing environmental impacts is a governance and performance issue. Third, environmental compliance always involves complex decisions and requires significant expenditure, which can impact short term profitability. Thus, the board should monitor and approve environmental decisions.

One of the main issues in corporate governance is the independence of the board of directors. Independent board members are expected to serve as the check and balance mechanism (Haniffa and Cooke, 2005), question and evaluate management and firm performance (De Villiers *et al.*, 2009) and challenge management decisions that involve or could lead to environmental violations (McKendall *et al.*, 1999). From a legitimacy perspective, independent directors are also expected to represent the interests of other stakeholders (Haniffa and Cooke, 2005). Additionally, since fulfilling societal expectations may enhance their image, this provides a valid reason for independent directors to influence companies to engage in environmentally responsible activities and thus to make sure that there is a congruence between the organisation’s actions and societal values (Haniffa and Cooke, 2005). Likewise, related to the issue of board independence, several corporate governance guidelines (see for example, The Cadbury Report, the Malaysian Code on

Corporate Governance) also recommended that the role of Chairman should be separated from the role of CEO. In this regard, De Villiers *et al.* (2009) found that the board independence and non-CEO duality (i.e. separation of roles) have a positive influence on environmental performance, whilst Buniamin *et al.* (2008) provide evidence on the influence of board independence on the decision to report on the environment.

Furthermore, several studies paid attention to the influence of the size of the board of directors on environmental performance (see for example, Kassinis and Vafeas, 2002; De Villiers *et al.*, 2009) and environmental reporting (Halme and Huse, 1997; Buniamin *et al.*, 2008). Other than bringing in more experience and knowledge (Dalton *et al.*, 1999), there is also a possibility that larger board size is represented by a broader range of stakeholders with diverse values and culture which may stimulate environmental attention (Halme and Huse, 1997). Furthermore, from a legitimacy perspective, a larger board of directors is expected to be more environmentally responsible in order to counter act the allegations made against them (e.g. less participative, less cohesive, higher coordination costs and social loafing). This in turn would result in better environmental performance and environmental reporting. Of the studies mentioned earlier, Buniamin *et al.* (2008) and De Villiers *et al.* (2009) found a positive influence of board size on the extent of corporate environmental performance and environmental reporting, respectively.

Other governance issues that are relevant in examining corporate environmental behaviour and action include the ownership structure (Halme and Huse, 1997; Melnyk *et al.*, 2003; Cormier *et al.*, 2005; Haniffa and Cooke, 2005; Brammer and Pavelin, 2006; Brammer *et al.*, 2006; Eljido-Ten, 2007), the number of directorship held by a director (Kassinis and Vafeas, 2002; Haniffa and Cooke, 2005; De Villiers *et al.*, 2009) and the number of years a director held the position (De Villiers *et al.*, 2009).

4.4 Linking the new variables to other variables in the framework

Financial performance and position and corporate governance can influence the intensity of pressure from stakeholders. In summary, financially stable companies and companies with certain governance structures (e.g. independence of the board members and size of the board) will face higher expectations from stakeholders to demonstrate responsibility towards the environment (these are depicted by arrows “ $\overset{?}{\rightarrow}$ ”, linking CF6 and CF8 to SP1 and SP2). Furthermore, financial performance and position can also affect management attitude and motivation as well as the strategic attitude of the organisation. As mentioned briefly earlier, companies sometimes engage in environmental initiatives to enhance their competitiveness

(Bansal and Roth, 2000; Brønn and Vidaver-Cohen, 2009). Moreover, as profitability renders financial flexibility to the organisation, this can potentially affect the organisation's tendency to be proactive to market forces (Azzone *et al.*, 1997) (these relationships are depicted by arrows “¹⁰→”, linking CF6 to CF4 and CF5).

The relationship between organisational culture, the management attitude and motivation and strategic attitude can work in multiple directions. Top management influences both the corporate culture and the strategic planning process (Wisner *et al.*, 2006) (these relationships are depicted by arrow “¹¹→”, linking CF4 to CF5 and CF7). Conversely, culture within the organisation can influence top management commitment and attitude (Judge and Elenkov, 2005) as well as the strategic planning process (Azzone *et al.*, 1997) (these are depicted by arrows “¹⁰→”, linking CF7 to CF4 and CF5).

5. The influence of ELAP on financial performance and stakeholder pressure

We have focussed on the factors influencing corporate environmental behaviour and action, or in this study, ELAP. However, previous studies have also documented the impacts of ELAP on the financial performance and position (for example, Klassen *et al.*, 1996; Melnyk *et al.*, 2003; Al-Tuwaijri *et al.*, 2004; Murray *et al.*, 2006; Burnett and Hansen, 2008; Rao *et al.*, 2009; Henri and Journeault, 2010) (this is depicted by arrows pointing from right to left “¹²→”, linking environmental legitimacy, environmental accountability, EP1 and EP2 to CF6).

Furthermore, the extent of stakeholder satisfaction (environmental legitimacy) and the state of corporate environmental performance and reporting (environmental accountability) could determine the level of stakeholder pressure facing the organisation (for example, Aerts and Cormier, 2009). Likewise, it is also expected that stakeholder pressure (or expectations) would be higher for companies engaging in stakeholder dialogues (this is depicted by arrows pointing from right to left “¹³→”, linking environmental legitimacy (EL), environmental accountability (EA) and stakeholder engagement (EP3) to SP1 and SP2).

6. Conclusion

We develop a framework which integrates three dimensions, namely environmental legitimacy, environmental accountability and environmental proactivity, into a single unified framework. The framework allows us to advance our understanding of corporate environmental behaviour. According to legitimacy theory, environmental legitimacy is the aim of corporations in their environmental endeavours. Our framework suggests that this can

be achieved through the judicious management of environmental performance and reporting, the two components of environmental accountability. This also explains the difference between legitimacy and accountability, with legitimacy being a concept that is open to management and manipulation, whereas accountability suggests a more open and honest approach. The framework further shows how accountability (performance and reporting) is facilitated by environmental proactivity, a concept that encompasses environmental management and accounting systems as well as stakeholder engagement.

The framework shows the determining factors or characteristics that influence corporations' proactive stance (proactivity) and their environmental performance and reporting (accountability). These factors can be categorised into company characteristics, stakeholder pressure and external factors. We added from previous models the financial performance and position of the organisation, organisational culture and corporate governance as company characteristics. The framework also shows that stakeholder pressure can be leveraged by harnessing the media and regulators.

Overall, our framework is the first to explain the relationship between environmental legitimacy, environmental accountability and environmental proactivity. The framework provides a basis for researchers to develop expectations and also to identify relationships that require further investigation.

7. References

- Adams, C. A. (2002), "Internal organisational factors influencing corporate social and ethical reporting - Beyond current theorising", *Accounting, Auditing & Accountability Journal*, Vol. 15 No. 2, pp. 223-250.
- Aerts, W. and Cormier, D. (2009), "Media legitimacy and corporate environmental communication", *Accounting, Organizations and Society*, Vol. 34, pp. 1-27.
- Al-Tuwaijri, S. A., Christensen, T. E. and Hughes, K. E. (2004), "The relations among environmental disclosure, environmental performance, and economic performance: a simultaneous equation approach", *Accounting, Organizations and Society*, Vol. 29, pp. 447-471.
- Annandale, D., Morrison-Saunders, A. and Bouma, G. (2004), "The impact of voluntary environmental protection instruments on company environmental performance", *Business Strategy and the Environment*, Vol. 13, pp. 1-12.
- Australian Conservation Foundation (ACF) (2001), "Perception report – the environmental performance of Australia's top 100 companies", available at: <http://www.acfonline.org.au/docs/publications/rpt0017.pdf> (accessed 15 March 2009).
- Azzone, G., Bianchi, R., Mauri, R. and Noci, G. (1997), "Defining operating environmental strategies: Programmes and plans within Italian industries", *Environmental Management and Health*, Vol. 8 No. 1, pp. 4-19.

- Bansal, P. and Clelland, I. (2004), "Talking trash: Legitimacy, impression management, and unsystematic risk in the context of natural environment", *Academy of Management Journal*, Vol. 47 No. 1, pp. 93-103.
- Bansal, P. and Hunter, T. (2003), "Strategic explanations for the early adoption of ISO 14001", *Journal of Business Ethics*, Vol. 46 No. 3, pp. 289-299.
- Bansal, P. and Roth, K. (2000), "Why companies go green: a model of ecological responsiveness", *Academy of Management Journal*, Vol. 43 No. 4, pp. 717-736.
- Berthelot, S., Cormier, D. and Magnan, M. (2003), "Environmental disclosure research: Review and Synthesis", *Journal of Accounting Literature*, Vol. 22, pp. 1-44.
- Bortree, D. S. (2009), "The impact of green initiatives on environmental legitimacy and admiration of the organization" *Public Relations Review*, Vol. 35, pp. 133-135.
- Brammer, S. and Pavelin, S. (2006), "Voluntary environmental disclosures by large UK companies", *Journal of Business Finance & Accounting*, Vol. 33 No. 7/8, pp. 1168-1188.
- Brammer, S. and Pavelin, S. (2008), "Factors influencing the quality of corporate environmental disclosure", *Business Strategy and the Environment*, Vol. 17, pp. 120-136.
- Brammer, S., Pavelin, S. and Porter, L. A. (2006), "Corporate social performance and geographical diversification", *Journal of Business Research*, Vol. 59, pp. 1025-1034.
- Brønn, P. S. and Vidaver-Cohen, D. (2009), "Corporate motives for social initiative: Legitimacy, sustainability, or the bottom line?", *Journal of Business Ethics*, Vol. 87, pp. 91-109.
- Brown, N. and Deegan, C. (1998), "The public disclosure of environmental performance information - a dual test of media agency setting theory and legitimacy theory", *Accounting and Business Research*, Vol. 29 No. 1, pp. 21-41.
- Buhr, N. and Freedman, M. (2001), "Culture, institutional factors and differences in environmental disclosure between Canada and the United States", *Critical Perspectives on Accounting*, Vol. 12, pp. 293-322.
- Buniamin, S., Alrazi, B., Johari, N. H. and Abd. Rahman, N. R. (2008), "An investigation of the association between corporate governance and environmental reporting in Malaysia", *Asian Journal of Business and Accounting*, Vol. 1 No. 2, pp. 65-88.
- Burnett, R. D. and Hansen, D. R. (2008), "Ecoefficiency: Defining a role for environmental cost management", *Accounting, Organizations and Society*, Vol 33, pp. 551-581.
- Burritt, R. L., Hahn, T. and Schaltegger, S. (2002), "Towards a comprehensive framework for environmental management accounting - Links between actors and environmental management accounting tools", *Australian Accounting Review*, Vol. 12 No. 2, pp. 39-50.
- Burritt, R. L. and Welch, S. (1997), "Accounting for environmental performance of the Australian Commonwealth public sector", *Accounting, Auditing & Accountability Journal*, Vol. 10 No. 4, pp. 532-561.
- Cadbury, A. (1992), "Report of the committee on the financial aspects of corporate governance (the Cadbury Report)", available at: <http://www.ecgi.org/codes/documents/cadbury.pdf> (accessed 15 March 2009).
- Campbell, J. L. (2007), "Why would corporations behave in socially responsible ways? an institutional theory of corporate social responsibility", *Academy of Management Review*, Vol. 32 No. 3, pp. 946-967.
- Cho, C. H. and Patten, D. M. (2007), "The role of environmental disclosures as tools of legitimacy: a research note", *Accounting, Organizations and Society*, Vol. 32, pp. 630-647.

- Cho, C. H., Patten, D. M. and Roberts, R. W. (2006), "Corporate political strategy: an examination of the relation between political expenditures, environmental performance, and environmental disclosure", *Journal of Business Ethics*, Vol. 67, pp. 139-154.
- Choi, J. S. (1999), "An investigation of the initial voluntary environmental disclosures made in Korean semi-annual financial reports", *Pacific Accounting Review*, Vol. 11 No. 1, pp. 73-102.
- Clarkson, P. M., Li, Y., Richardson, G. D. and Vasvari, F. P. (2008), "Revisiting the relation between environmental performance and environmental disclosure: an empirical analysis", *Accounting, Organizations and Society*, Vol. 33, pp. 303-327.
- Cormier, D. and Gordon, I. M. (2001), "An examination of social and environmental reporting strategies", *Accounting, Auditing & Accountability Journal*, Vol. 14 No. 5, pp. 587-616.
- Cormier, D. and Magnan, M. (1999), "Corporate environmental disclosure strategies: Determinants, costs and benefits", *Journal of Accounting, Auditing & Finance*, Vol. 14 No. 4, pp. 429-451.
- Cormier, D. and Magnan, M. (2003), "Environmental reporting management: a Continental European perspective", *Journal of Accounting and Public Policy*, Vol. 22, pp. 43-62.
- Cormier, D. and Magnan, M. (2004), "The impact of the web on information and communication modes: the case of corporate environmental disclosure", *International Journal of Technology Management*, Vol. 27 No. 4, pp. 393-416.
- Cormier, D., Magnan, M. and Van Velthoven, B. (2005), "Environmental disclosure quality in large German companies: Economic incentives, public pressures or institutional conditions?", *European Accounting Review*, Vol. 14 No. 1, pp. 3-39.
- Dalton, D. R., Daily, C. M., Johnson, J. L. and Ellstrand, A. E. (1999), "Number of directors and financial performance: a meta-analysis", *Academy of Management Journal*, Vol. 42 No. 6, pp. 674-686.
- De Villiers, C. and Van Staden, C. (2009), "Good, bad and crisis firms: How much and where they disclose environmental information", paper presented at the 2009 AFAANZ Conference, 5-7 July, Adelaide, Australia, available at: http://www.afaanz.org/openconf-afaanz2009/modules/request.php?module=oc_program&action=view.php&id=69 (accessed 1 August 2009).
- De Villiers, C., Van Staden, C. and Naiker, V. (2009), "Good corporate governance makes for good environmental performance", presented at the 2009 AFAANZ Conference, 5-7 July, Adelaide, Australia, available at: http://www.afaanz.org/openconf-afaanz2009/modules/request.php?module=oc_program&action=view.php&id=253 (accessed 1 August 2009).
- De Villiers, C. and Van Staden, C. J. (2006), "Can less environmental disclosure have a legitimising effect? Evidence from Africa", *Accounting, Organizations and Society*, Vol. 31, pp. 763-781.
- Deegan, C. (2002), "The legitimising effect of social and environmental disclosures - a theoretical foundation", *Accounting, Auditing & Accountability Journal*, Vol. 15 No. 3, pp. 282-311.
- Deegan, C. (2006), "Legitimacy theory", in Z. Hoque (Ed.), *Methodological issues in accounting research: Theories and methods*, Spiramus Press Ltd, London, pp. 161-181.
- Deegan, C. and Rankin, M. (1996), "Do Australian companies report environmental news objectively? An analysis of environmental disclosures by firms prosecuted successfully by the Environmental Protection Authority", *Accounting, Auditing & Accountability Journal*, Vol. 9 No. 2, pp. 50-67.

- Deegan, C., Rankin, M. and Tobin, J. (2002), "An examination of the corporate social and environmental disclosures of BHP from 1983-1997: a test of legitimacy theory", *Accounting, Auditing & Accountability Journal*, Vol. 15 No. 3, pp. 312-343.
- Doonan, J., Lanoie, P. and Laplante, B. (2005), "Determinants of environmental performance in the Canadian pulp and paper industry: an assessment from inside the industry", *Ecological Economics*, Vol. 55, pp. 73-84.
- Elijido-Ten, E. (2007), "Applying stakeholder theory to analyze corporate environmental performance - Evidence from Australian listed companies", *Asian Review of Accounting*, Vol. 15 No. 2, pp. 164-184.
- Elsayed, K. (2006), "Reexamining the expected effect of available resources and firm size on firm environmental orientation: an empirical study of UK firms", *Journal of Business Ethics*, Vol. 65, pp. 297-308.
- Freedman, M. and Jaggi, B. (2004), "Carbon dioxide emissions and disclosures by electric utilities", *Advances in Public Interest Accounting*, Vol. 10, pp. 105-129.
- Freedman, M. and Jaggi, B. (2005), "Global warming, commitment to the Kyoto Protocol, and accounting disclosures by the largest global public firms from polluting industries", *The International Journal of Accounting*, Vol. 40, pp. 215-232.
- Freedman, M. and Stagliano, A. J. (2008), "Environmental disclosures: Electric utilities and Phase 2 of the Clean Air Act", *Critical Perspectives on Accounting*, Vol. 19, pp. 466-486.
- Freedman, M. and Wasley, C. (1990), "The association between environmental performance and environmental disclosure in annual reports and 10Ks", *Advances in Public Interest Accounting*, Vol. 3, pp. 183-193.
- Frost, G. R. and Seamer, M. (2002), "Adoption of environmental reporting and management practices: an analysis of New South Wales public sector entities", *Financial Accountability & Management*, Vol. 18 No. 2, pp. 103-127.
- Frost, G. R. and Wilmshurst, T. D. (2000), "The adoption of environment-related management accounting: an analysis of corporate environmental sensitivity", *Accounting Forum*, Vol. 24 No. 4, pp. 344-365.
- Fukukawa, K., Shafer, W. E. and Lee, G. M. (2007), "Values and attitudes toward social and environmental accountability", *Journal of Business Ethics*, Vol. 71, pp. 381-394.
- Gadenne, D. and Ladewig, J. (2007), "The influence of Australian Environmental Protection Authority prosecutions on corporate environmental disclosures", *Journal of Environmental Assessment Policy and Management*, Vol. 9 No. 3, pp. 299-318.
- Gago, R. F. and Antolin, M. N. (2004), "Stakeholder salience in corporate environmental strategy", *Corporate Governance*, Vol. 4 No. 3, pp. 65-76.
- Global Environmental Management Initiative (GEMI) (1998), "Measuring environmental performance: a primer and survey of metrics in use", available at: <http://www.tceq.state.tx.us/assets/public/assistance/cleantexas/met101.pdf> (accessed 15 March 2009)
- Global Reporting Initiative (GRI) (2009), "Sustainability reporting guidelines & Electric utility sector supplements", available at: <http://www.globalreporting.org/NR/rdonlyres/2B316BC6-A5EC-49E3-B8BA-58B2EBA02D3C/2823/ReportingGuidelinesandEUSS.pdf> (accessed 1 August 2009).
- Gonzalez-Benito, J. and Gonzalez-Benito, O. (2006), "A review of determinant factors of environmental proactivity", *Business Strategy and the Environment*, Vol. 15, pp. 87-102.
- Gray, R. and Bebbington, J. (2001), *Accounting for the environment*, SAGE Publications Ltd, London.

- Gray, R., Kouhy, R. and Lavers, S. (1995), "Methodological themes - Constructing a research database of social and environmental reporting by UK companies", *Accounting, Auditing & Accountability Journal*, Vol. 8 No. 2, pp. 78-101.
- Gray, R., Owen, D. and Adams, C. (1996), *Accounting & accountability - Changes and challenges in corporate social and environmental reporting*, Prentice Hall Europe, Hertfordshire.
- Guthrie, J. and Abeysekara, I. (2006), "Content analysis of social, environmental reporting: what is new?", *Journal of Human Resource Costing & Accounting*, Vol. 10 No. 2, pp. 114-126.
- Hackston, D. and Milne, M. J. (1996), "Some determinants of social and environmental disclosures in New Zealand companies.", *Accounting, Auditing & Accountability Journal*, Vol. 9 No. (1), pp. 77-108.
- Halme, M. and Huse, M. (1997), "The influence of corporate governance, industry and country factors on environmental reporting", *Scandinavian Journal of Management*, Vol. 13 No. 2, pp. 137-157.
- Haniffa, R. M. and Cooke, T. E. (2005), "The impact of culture and governance on corporate social reporting", *Journal of Accounting and Public Policy*, Vol. 24, pp. 391-430.
- Henri, J. F. and Journeault, M. (2010), "Eco-control: the influence of management control systems on environmental and economic performance", *Accounting, Organizations and Society*, Vol. 35 No. 1, pp. 63-80.
- Hofstede, G. (1984), "Cultural dimensions and in management and planning", *Asia Pacific Journal of Management*, January, pp. 81-99.
- Holland, L. and Foo, Y. B. (2003), "Differences in environmental reporting practices in the UK and the US: the legal and regulatory context", *The British Accounting Review*, Vol. 35, pp. 1-18.
- Hunter, T. and Bansal, P. (2007), "How standard is standardized MNC global environmental communication?", *Journal of Business Ethics*, Vol. 71, pp. 135-147.
- Ilinitch, A. Y., Soderstrom, N. S. and Thomas, T. E. (1998), "Measuring corporate environmental performance", *Journal of Accounting and Public Policy*, Vol. 17, pp. 383-408.
- Ingram, R. W. and Frazier, K. B. (1980), "Environmental performance and corporate disclosure", *Journal of Accounting Research*, Vol. 18 No. 2, pp. 614-622.
- Intergovernmental Panel on Climate Change (IPCC) (2007), *Climate change 2007: Synthesis report*, available from www.ipcc.ch/pdf/assessment-report/ar4/syr/ar4_syr_spm.pdf (accessed 1 August 2009).
- International Energy Agency (IEA) (2009), *CO₂ emissions from fuel combustion - Highlights (2009 Edition)* available at: <http://www.iea.org/co2highlights/co2highlights.pdf> (accessed 1 August 2009)
- Jones, K. and Alabaster, T. (1999), "Critical analysis of corporate environmental reporting scoring systems", *Journal of Environmental Assessment Policy and Management*, Vol. 1 No. 1, pp. 27-60.
- Judge, W. Q. and Elenkov, D. (2005), "Organizational capacity for change and environmental performance: an empirical assessment of Bulgarian firms", *Journal of Business Research*, Vol. 58, pp. 893-901.
- Kassinis, G. and Vafeas, N. (2002), "Corporate boards and outside stakeholders as determinants of environmental litigation", *Strategic Management Journal*, Vol. 23, pp. 399-415.
- Kent, P. and Chan, C. (2003), "Application of stakeholder theory to the quantity and quality of Australian voluntary corporate environmental disclosures", available at: <http://ssrn.com/abstract=447901> (accessed 15 March 2009).

- Klassen, R. D. and McLaughlin, C. P. (1996), "The impact of environmental management on firm performance", *Management Science*, Vol. 42 No. 8, pp. 1199-1214.
- Kolk, A. and Mauser, A. (2002), "The evolution of environmental management: From stage models to performance evaluation", *Business Strategy and the Environment*, Vol. 11 No. 2, pp. 14-31.
- Lefebvre, E., Lefebvre, L. and Talbot, S. (2003), "Determinants and impacts of environmental performance in SMEs", *R&D Management*, Vol. 33 No. 3, pp. 263-283.
- Lindblom, C. K. (1993), "The implications of organizational legitimacy for corporate social performance and disclosure", paper presented at the 1993 Critical Perspectives on Accounting Conference, New York.
- Matthews, M. R. and Reynolds, M. A. (2001), "Cultural relativity and accounting for sustainability: a research note", *Accounting Forum*, Vol. 25 No. 1, pp. 79-88.
- McKendall, M., Sanchez, C. and Sicilian, P. (1999), "Corporate governance and corporate illegality: the effects of board structure on environmental violations", *The International Journal of Organizational Analysis*, Vol. 7 No. 3, pp. 201-223.
- Melnyk, S. A., Sroufe, R. P. and Calantone, R. (2003), "Assessing the impact of environmental management systems on corporate and environmental performance", *Journal of Operations Management*, Vol. 21, pp. 329-351.
- Miakisz, J. A. and Miedema, A. K. (1998), "Environmental performance benchmarking for electric utilities", *Environmental Quality Management*, Summer, pp. 49-60.
- Milne, M. J. and Adler, R. W. (1999), "Exploring the reliability of social and environmental disclosures content analysis", *Accounting, Auditing & Accountability Journal*, Vol. 12 No. 2, pp. 237-256.
- Murray, A., Sinclair, D., Power, D. and Gray, R. (2006), "Do financial markets care about social and environmental disclosure? Further evidence and exploration from the UK", *Accounting, Auditing & Accountability Journal*, Vol. 19 No. 2, pp. 228-255.
- Neu, D., Warsame, H. and Pedwell, K. (1998), "Managing public impressions: Environmental disclosures in annual reports", *Accounting, Organizations and Society*, Vol. 23 No. 3, pp. 265-282.
- Nik Ahmad, N. N. and Sulaiman, M. (2004), "Environmental disclosures in Malaysian annual reports: a legitimacy theory perspective", *International Journal of Commerce and Management*, Vol. 14 No. 1, pp. 44-58.
- O'Riordan, T. (1989), "Electricity privatization and environmental accountability", *Energy Policy*, April, pp. 141-148.
- Overby, P. (2005), "Environmental groups launch Exxon boycott", available at: <http://www.npr.org/templates/story/story.php?storyId=4749052> (accessed 22 January 2010).
- Owen, D. (2008), "Chronicles of wasted time? A personal reflection on the current state of, and future prospects for, social and environmental accounting research", *Accounting, Auditing & Accountability Journal*, Vol. 21 No. 2, pp. 240-267.
- Parker, L. D. (2005), "Social and environmental accountability research - a view from the commentary box", *Accounting, Auditing & Accountability Journal*, Vol. 18 No. 6, pp. 842-860.
- Patten, D. M. (2002a), "Media exposure, public policy pressure, and environmental disclosure: an examination of the impact of TRI data availability", *Accounting Forum*, Vol. 26 No. 2, pp. 152-171.
- Patten, D. M. (2002b), "The relation between environmental performance and environmental disclosure: a research note", *Accounting, Organizations and Society*, Vol. 27, pp. 763-773.

- Raar, J. (2007), "Reported social and environmental and environmental taxonomies: a longer glimpse", *Managerial Auditing Journal*, Vol. 22 No. 8, pp. 840-860.
- Rao, P., Singh, A. K., O'Castillo, O. L., Intal, P. S. and Sajid, A. (2009), "A metric for corporate environmental indicators...for small and medium enterprises in the Philippines", *Business Strategy and the Environment*, Vol. 18, pp. 14-31.
- Roberts, R. W. (1992), "Determinants of corporate social responsibility disclosure: an application of stakeholder theory", *Accounting, Organizations and Society*, Vol. 17 No. 6, pp. 595-612.
- Scott, P. and John, S. (2002), "Banks look to indirect impacts", *Environmental Finance*, November, pp. 22-23.
- Sethi, S. P. (1975), "Dimensions of corporate social performance: an analytical framework", *California Management Review*, Vol. 17 No. 3, pp. 58-64.
- Shafer, W. E. (2006), "Social paradigms and attitudes toward environmental accountability", *Journal of Business Ethics*, Vol. 65, pp. 121-147.
- Solomon, A. and Lewis, L. (2002), "Incentives and disincentives for corporate environmental disclosure", *Business Strategy and the Environment*, Vol. 11 No. 3, pp. 154-169.
- Suchman, M. C. (1995), "Managing legitimacy: Strategic and institutional approach", *The Academy of Management Review*, Vol. 20 No. 3, pp. 571-610.
- Sumiani, Y., Haslinda, Y. and Lehman, G. (2007), "Environmental reporting in a developing country: a case study on status and implementation in Malaysia", *Journal of Cleaner Production*, Vol. 15, pp. 895-901.
- The Institute of Social and Ethical AccountAbility (ISEA) (1999), "AccountAbility 1000 (AA1000) framework: Standards, guidelines and professional qualification" available at:
<http://www.accountability21.net/uploadedFiles/publications/AA1000%20Framework%201999.pdf> (accessed 15 March 2009).
- Thompson, P. and Cowton, C. J. (2004), "Bringing the environment into bank lending: Implications for environmental reporting", *The British Accounting Review*, Vol. 36, pp. 197-218.
- Tilt, C. A. (1994), "The influence of external pressure groups on corporate social disclosure - Some empirical evidence", *Accounting, Auditing & Accountability Journal*, Vol. 7 No. 4, pp. 47-72.
- Tilt, C. A. (2008), "Environmental disclosure outside the annual report", *International Journal of Management and Decision Making*, Vol. 9 No. 3, pp. 288-309.
- Unerman, J. (2000), "Methodological issues - Reflections on quantification in corporate social reporting content analysis", *Accounting, Auditing & Accountability Journal*, Vol. 13 No. 5, pp. 667-680.
- Vafeas, N. and Nikolaou, V. (2001), "The association between corporate environmental and financial performance", *Advances in Public Interest Accounting*, Vol. 8, pp. 195-214.
- Van Staden, C. J. and Hooks, J. (2007), "A comprehensive comparison of corporate environmental reporting and responsiveness", *The British Accounting Review*, Vol. 39, pp. 197-210.
- Waddock, S. A. and Graves, S. B. (1997), "The corporate social performance-financial performance link", *Strategic Management Journal*, Vol. 18 No. 4, pp. 303-319.
- Wahyuni, D., Rankin, M. and Windsor, C. (2009), "Towards emissions trading: the role of environmental management systems in voluntarily disclosing greenhouse gas emissions", paper presented at the 2009 AFAANZ Conference, 5-7 July, Adelaide, Australia, available at: http://www.afaanz.org/openconf-afaanz2009/modules/request.php?module=oc_program&action=view.php&id=116

- Walden, W. D., and Schwartz, B. N. (1997), "Environmental disclosures and public policy pressure", *Journal of Accounting and Public Policy*, Vol. 16, pp. 125-154.
- Walden, W. D. and Stagliano, A. J. (2004), "An assessment of the quality of environmental disclosure themes", *Advances in Environmental Accounting and Management*, Vol. 2, pp. 137-165.
- Williams, S. M. (1999), "Voluntary environmental and social accounting disclosure practices in the Asia-Pacific region: an international empirical test of political economy theory", *The International Journal of Accounting*, Vol. 34 No. 2, pp. 209-238.
- Williams, S. M. and Ho, W. P. S. (1999), "Corporate social disclosures by listed companies on their web sites: an international comparison", *The International Journal of Accounting*, Vol. 34 No. 3, pp. 389-419.
- Wilmshurst, T. D. and Frost, G. R. (2000), "Corporate environmental reporting: a test of legitimacy theory", *Accounting, Auditing & Accountability Journal*, Vol. 13 No. 1, pp. 10-26.
- Wiseman, J. (1982), "An evaluation of environmental disclosures made in corporate annual reports", *Accounting, Organizations and Society*, Vol. 7 No. 1, pp. 53-63.
- Wisner, P. S., Epstein, M. J. and Bagozzi, R. P. (2006), "Organizational antecedents and consequences of environmental performance", *Advances in Environmental Accounting and Management*, Vol. 3, pp. 143-167.
- Zadek, S. and Raynard, P. (2002), "Stakeholder engagement: Measuring and communicating quality", *Accountability Quarterly*, Vol. 19, pp. 8-17.
- Zeghal, D. and Ahmed, S. A. (1990), "Comparison of social responsibility information disclosure media used by Canadian firms", *Accounting, Auditing & Accountability Journal*, Vol. 3 No. 1, pp. 38-53.

Diagram 1 – Determinant factors reviewed in Gonzalez-Benito & Gonzalez-Benito (2006, p. 91)

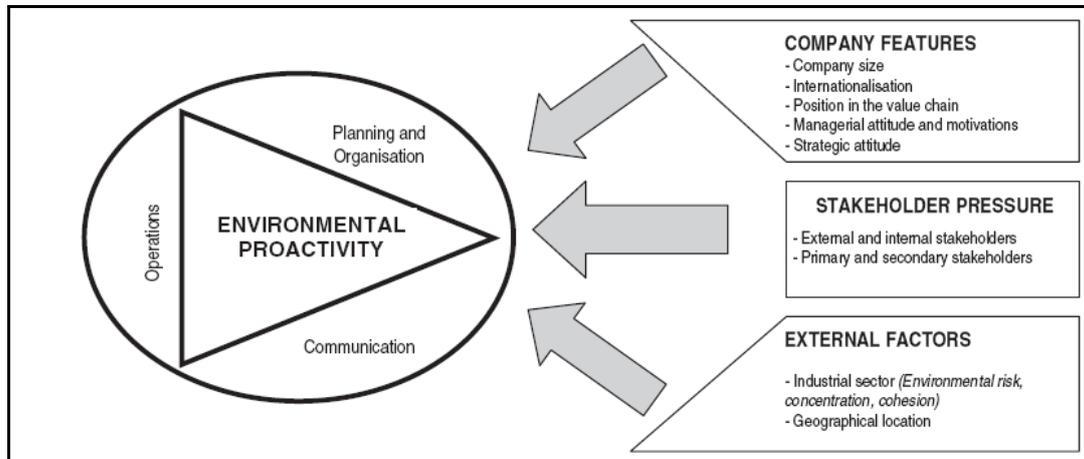
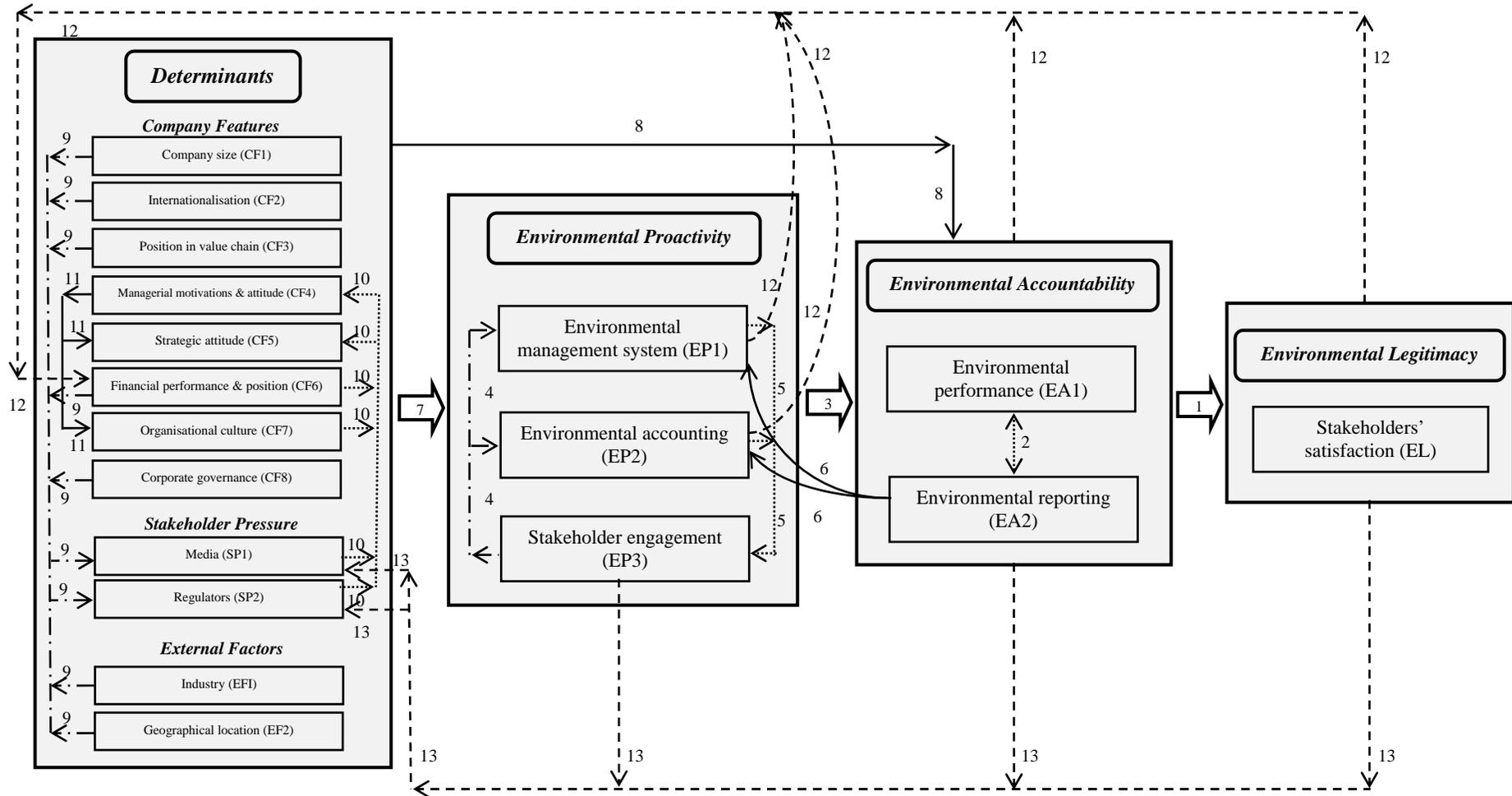


Diagram 2 – Our framework for environmental legitimacy, accountability and proactivity (ELAP)



Notes:

¹ Arrows show direction of influence.

² Different arrows/lines (, , , ,) show relationships between components of the framework. These relationships are explained in the paper.

Diagram 3 – Stakeholder pressure as a core determinant factor in Gonzalez-Benito & Gonzalez-Benito (2006, p. 98)

