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Do stakeholders' demands matter in environmental disclosure practices? Evidence from Australia

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Abstract
Previous studies on the relationship between environmental performance and environmental disclosure have found mixed results. This exploratory qualitative study investigates the possible reasons for the environmental disclosures of nine companies listed in the top 200 Australian Securities Exchange (ASX) companies. This study reveals that the companies were more likely to disclose environmental information if their stakeholders, particularly from the financial markets (investors) and/or customers, demanded that they do so. Disclosure can then be seen as a function of stakeholders' demand or pressure, and in the absence of such a demand, firms may disclose little or remain silent. The good and poor environmental performers in this study, as rated by the Corporate Monitor ratings of environmental performance, tend to exhibit the same disclosure behaviour, which may indicate that the environmental disclosure may not necessarily reflect the actual performance.

Keywords Environmental reporting · Environmental disclosure · Environmental performance · Stakeholder management · Australia

1 Introduction

Currently, corporations are expected to exhibit more responsible ways of doing business. Corporate social responsibility (CSR) was initially perceived as discretionary, but it has now, to some extent, become more mainstream, as there has been greater pressure from firms' stakeholders for transparency beyond economic performance to also include the firms' environmental and social performances (Waddock 2003; Ong et al. 2016). The anthropogenic-cause of climate change has called organizations, including businesses, to find ways to mitigate and adapt to climate change (United Nations Framework Convention on Climate Change 2007; Howard-Grenville et al. 2014). Chandok and Singh (2017) posit that businesses are currently held

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accountable on multiple fronts; in addition to their economic performance, they also need to show how they maintain their responsibilities regarding social and environmental dimensions.

There has been greater acceptance of the importance of stakeholders and acknowledgment of shareholders as a fraction of this group, which led to more interest in firms' sustainability information. Companies have responded by disclosing more environmental information in their annual reports, CSR and/or sustainability reports (Braam et al. 2016). However, stakeholders, in general, have limited access to information about firms' environmental performance, as the disclosure of such information still remains largely voluntary. The recognition of the importance of environmental sustainability has led some companies to perform well environmentally and then disclose their performance. However, it may be that other companies, who perform less well in some areas, will also disclose elements of their environmental performance, but only those elements in which they perform well, while hiding the evidence from those areas in which they perform poorly. Alternatively, they may choose to disclose little information.

The previous studies examining the relationship between environmental disclosure and performance have produced conflicting findings (Wiseman 1982; Fekrat et al. 1996; Hughes et al. 2001; Patten 2002b; Al-Tuwaijri et al. 2004; Clarkson et al. 2008; Sutantoputra et al. 2012). For example, Clarkson et al. (2008) found a positive relationship between environmental performance and environmental disclosure from a sample of 191 public U.S. companies. They rated the companies' environmental disclosures using a rating system based on the Global Reporting Initiative (GRI) guidelines and used toxic emissions and waste management as proxies for environmental performance. Meanwhile, Patten (2002b) researched 131 U.S. companies' environmental disclosures in their annual reports and their environmental performance based on toxic release data. He found that companies with poor environmental performance disclosed more information, which inferred a negative relationship. These mixed results have created an avenue for this study to investigate the possible reasons that companies disclose environmental information relating to their business activities.

This study attempts to answer the reasons *why firms in Australia disclose or do not disclose their environmental information in relation to the demands from their stakeholders*. There is limited empirical evidence on the relationship between environmental disclosure and performance in Australia. The development of regulations surrounding climate change in Australia has impacted the needs for organizations, in general, to disclose environmental information and businesses, in particular. Naudé et al. (2012) argue that these pressures may contribute to the production of more environmental information in Australia. The current research, therefore, has two objectives. The first is to understand why firms disclose their environmental performance information at such varying degrees. Second, it would be beneficial to know whether there are differences between the environmental disclosure behaviours of good and poor environmental performers.

Higgins et al. (2015) note that high-impact industries in Australia are still leading the way in disclosing environmental information, as the country has a dependency on high-impact industries, such as oil and mineral excavations. However, they also

note there has been a growing level of environmental disclosures produced by companies in a wide range of low- to moderate-impact industries. Similarly, the KPMG surveys of Corporate Social Responsibility have shown an increase in reporting from low- to moderate-impact industries, such as financial services, communication/media, trade, and retail (KPMG 2015, 2017). However, there is still great variability in the environmental reporting content in Australia, and auditing of the reports on CSR issues (i.e., social and environmental matters) is not mandatory. As a result, stakeholders may question the validity of the reporting as there is a possibility of 'greenwashing' (Kolk and Perego 2010). These disclosure behaviours need to be studied, as they may be the only source of information available to stakeholders.

Nine companies listed in the Australian Stock Exchange (ASX) from various industries, ranging from metal and mining, oil, gas and consumable fuels, construction materials, building products, diversified beverage producers to pharmaceuticals, were included in this study. The informants who participated in this study hold various roles ranging from those in charge of environmental issues and sustainability to external affairs, corporate communication and investor relations. The details of the companies, their environmental impacts and the informants will be discussed in the section on the sample and informants.

This research, through its study of environmental performance and disclosures linkages, contributes to the literature by highlighting the importance of and demand from particular stakeholders regarding the level of environmental disclosure. This paper will first discuss the state of environmental reporting in Australia to provide the context of the study, and then a literature review of stakeholder theory is presented, as companies have used disclosures to maintain relationships with their stakeholders or as a method of stakeholder management. The issues surrounding the methodology, sample and data collection are then discussed. Next, the analysis of the data and the results are presented. Finally, the conclusion and recommendations for future studies are presented.

2 Background and literature review

2.1 Environmental disclosure in Australia

There is minimal regulation surrounding environmental reporting that forces Australian companies to disclose their environmental performance to inform their general stakeholders; the mandatory reporting is done primarily to meet the regulators' demands on issues such as the emission level, and these are not required to be included in the annual report (Bachoo et al. 2013; Higgins et al. 2015). Prior to the enactment of s299(1)(f) of the *Corporations Act* on 1st July 1998, Australian companies were not required to provide environmental information in their annual reports (Cowan and Gadenne 2005; Overell et al. 2008; Bachoo et al. 2013). This piece of legislation made environmental reporting mandatory for the regulated section of the annual report, i.e., the Director's Report. However, companies are only required to include information regarding their environmental practices if they have breached "…any particular and significant environmental

regulation under a law of the Commonwealth or of a State or Territory", in which case, they should "give details of the entity's performance in relation to environmental regulation" s299(1)(f) *Corporations Act* (Australian Government 1998). Companies still retain the option of disclosing more in the non-regulated sections of the annual report or in other mediums, such as an environmental report, sustainability report or on their website. Alternatively, they may stay silent if they wish.

Bubna-Litic (2004), in her study of the effect of the enactment of Section s299 (1)(f) to the practice of environmental reporting of the top 100 companies in Australia, found that there was an increase in companies reporting their environmental performance in the Director's Report section of the annual report, which increased from 71 companies in 1999 to 90 in 2002. However, she further noted that there was more disclosure in 2002 compared with 1999 of the positive aspects of environmental performance and less disclosure of the negative aspects of performance. Cowan and Gadenne (2005) also found that Australian listed companies had a higher tendency to disclose positive environmental information in the voluntary sections of annual reports, which are un-regulated, than in the statutory Director's Report. As the environmental disclosure in the Director's Report is required by law to provide factual rather than self-laudatory information, whereas the other sections of the report are unregulated, the users of firms' environmental information placed in other sections of the report may need to expect lower reliability and less balanced reporting (Cowan and Gadenne 2005).

Australia has had its share of conflicts in regard to developing its climate change policy. Back in 2007, the government was in the process of introducing a cap and trade emission trading scheme called the Carbon Pollution Reduction Scheme (CPRS) (Commonwealth of Australia 2016). However, the leadership challenge in 2010 resulted in this being abandoned, and a 'carbon tax' was introduced in 2012 instead (Anderson 2016b). The characterization of the 'carbon tax' may be disputed, as it was intended to be a cap and trade. The scheme was intended to cover the entire economy in an effort to meet Australia's commitment to reduce its emission. However, this legislation was short-lived and was repealed by the incoming Coalition government under Prime Minister Abbott in 2014 (Anderson 2016b; Qian et al. 2020). Under the Abbot administration, the Emissions Reduction Fund was introduced in 2014 (Commonwealth of Australia 2017). The way the program works is that the government provides financial incentives for polluters to reduce their emissions. In 2017, the Australian government, through its Department of Environment and Energy, commissioned a review to examine the best way to meet Australia's climate commitment (Commonwealth of Australia 2017). Essentially, the current government wants a policy to curb Australia's emissions by reviewing each sector individually (Anderson 2016a). They rejected the economy-wide approach. The scheme will work in a similar way as in an emission trading scheme, where the emissions are capped by the government. The uncertainty regarding the climate change policy has been hurting businesses and scaring away investment in Australia while at the same the reporting of emissions has been done primarily for compliance purposes (Hudson 2017).

2.2 Disclosure as a form of stakeholder management

Formally, environmental disclosures are "disclosures pertaining to the impact that an organizational process or operation may have on the natural environment" (Campbell 2004, p. 108). These disclosures should reflect the genuine intention and transparency of the organizational reporters by disclosing information on how the organizations deal with both the positive and negative aspects of their environmental impacts (Adams 2004). Organizations are using this form of disclosure to manage multiple stakeholders' demands (Khan et al. 2020). These organizations are expected to show that they have accepted their environmental responsibility by making a clear statement of their values, the practices to achieve these values, and some measurable outcomes. Stakeholders from these organizations may then monitor a firm's environmental activities from a variety of sources, one of which is their annual report (Tilt 1994; Hughes et al. 2001).

Firms use environmental disclosures, as in the case with financial disclosures, to maintain relationships with their stakeholders (Neimark 1992; Hopkins 2004). However, firms have to be aware of which stakeholder group's concerns they are addressing, and they need to make sure that they can communicate their responses to that particular group effectively (Owen and O'Dwyer 2008). Firms may have used environmental disclosure for reputation enhancement purposes and as a proactive strategy to handle actual or potential public pressure (Cho et al. 2006). Disclosing positive practices is, therefore, in the firm's long-run self-interest (Davis 1973). Some financial benefits, such as a lower cost of capital, higher share price, and reduced agency costs of debt, have also been found to be associated with the firms' production of environmental information (Alnajjar 2000; Healy and Palepu 2001; Al-Tuwaijri et al. 2004; Clarkson et al. 2008; Naudé et al. 2012). Some other perceived benefits of disclosing environmental information include differentiation from those firms without good environmental practices (e.g., Dennis et al. 1998) and maintenance of 'a license to operate', which offsets the negative perceptions of a firm's core business (Jenkins and Yakovleva 2006).

However, the above does not explain why some companies disclose a great deal while others disclose very little. One explanation may be that firms place emphasis upon managing their relationships with key stakeholders (Gray et al. 1996), and disclosures are a response to requests from specific stakeholders, such as employees, shareholders, customers, suppliers, the local communities, regulators, institutional investors, and analysts. However, because each stakeholder may have different concerns regarding each environmental issue, the environmental concerns of a particular stakeholder group that has a high level of influence may be given precedence. One study found that firms with large numbers of non-institutional shareholders received more demands for information on environmental practices (Epstein and Freedman 1994) and so were more likely to disclose this information in forms that were accessible to this group.

On the other hand, this plausible explanation may not shed light on why firms with poor environmental performance also disclose environmental information. Perhaps, to prevent backlash from their poor practices, it is expected they would be unlikely to disclose their poor performance unless forced to do so by legislation

(Bewley and Li 2000). They may, however, disclose neutral or positive environmental information to improve stakeholders' perceptions of their performance (Patten 2002b) and divert attention from any environmental damage caused by the firm (Wilmshurst and Frost 2000). For example, a study of Australian firms prosecuted by the Environment Protection Authority (EPA) between 1994 and 1998 (prior to the enactment of Section 299 (1)(f)) found that poor performers made significantly more general and positive disclosures and very limited negative disclosures (of EPA violations) and presented themselves as environmentally conscious (Mitchell et al. 2006).

Stakeholder theory has been used to explain these disclosures, as it acknowledges that firms have a reliance on society (Roberts 1992; Gray et al. 1996; Patten 2002a; Elijido-Ten 2007; Melé 2008; Owen and O'Dwyer 2008). The idea that firms must maintain their survival through their relationships with society extends the understanding of to whom firms must be accountable. This idea is quite contrary to what Friedman (1970) famously argues, which is that firms have fiduciary duties only to the owners or shareholders, as they are the sources of a firm's existence. Thus, firms should not impose an extra 'tax' on their shareholders by making decisions on their behalf to take care of non-shareholders' interests. He argues that it is within the shareholders' rights, not the firms', to decide where they want to contribute to society and the environment. However, the concept of the stakeholder has evolved and includes other parties that may influence, or be affected by, firm activities (Freeman 1984; Gray et al. 1996; Lokuwaduge and Heenetigala 2017). The evolution of the concept of the stakeholder challenges the moral principle of the shareholders of firms as the prime stakeholders of the firm in relation to other stakeholders, and it suggests that firms have a duty of care to other stakeholders (Berman 1998; Ong and Djajadikerta 2020). Thus, the stakeholder theory suggests that firms must manage these parties' interests or concerns, as well as continue to satisfy their primary stakeholders, i.e., the shareholders.

Mitchell et al. (1997) stress that it is imperative to be able to detect and respond to varying levels of stakeholders' interests by taking into consideration each stakeholder's power, legitimacy and urgency. Firms may then put more effort into maintaining good relations with more important stakeholders (Gray et al. 1995). Therefore, organizations are inclined to use environmental information to manage or even possibly misrepresent themselves so that they can continue to receive support from their stakeholders for their organizational survival.

External stakeholders, such as customers and creditors, have been found to influence the choice of the management strategy in dealing with environmental issues (Rodrigue et al. 2013). Similarly, Henriques and Sadorsky (1996) also suggest that pressure from the consumer and government regulations influence the firm's responses to environmental issues, which may suggest that the demand from stakeholders is uneven, depending on each stakeholder group's concerns. Hence, environmental disclosures can be used as a tool to satisfy the interests of certain stakeholders or groups of stakeholders. The current study tries to understand why firms disclose their environmental performance at such varying degrees in relation to the demands from their stakeholders and also whether there are differences between the environmental disclosure behaviours of good and poor environmental performers.

The next section will review the methodology used in this study, which comprises the case study method, sample selection and data collection issues.

3 Methodology

3.1 Exploratory case studies

The case study approach is appropriate to obtain an in-depth understanding of a particular research context with the purpose of providing analytical, rather than statistical, generalizations (Yin 2009). The exploratory nature of the study may enable deeper probing of the reasons why firms disclose or do not disclose environmental information (Yin 2003b; Tharenou et al. 2007). This approach enables the researcher to investigate new processes and behaviours (Yin 2003a). Yin (2003b) also suggests including the rationale and direction for an exploratory study. Thus, stakeholder management and several other possible factors influencing environmental disclosure have been identified in the previous section.

Creswell (2007) warns of the danger of over-generalization of the findings from case studies without understanding the context in which the study was performed. To increase the generalisability, this study has used multiple cases as opposed to relying on a single case (Sommer and Sommer 1991 as cited in Tharenou et al. 2007). In this study, perceptual mapping based on environmental performance and disclosure linkages was used to create four groupings (i.e., high performance—high disclosure, high performance—low disclosure, low performance—high disclosure, and low performance—low disclosure) (See Fig. 1).

In total, there were nine companies in the sample, including three in the low performance—high disclosure group and two each of the other groups. This method enabled the researcher to investigate whether the same behaviours or processes occurred in similar firms. On the other hand, it also provided the opportunity to study how these behaviours or processes occurred in organizations with different underlying conditions.

3.2 Explanation of the sample and informants

The study used a sample of companies from ASX200 (i.e., the top 200 listed companies in the Australian Stock Exchange by market capitalization), which accounts for 82 per cent of the Australian equities market and is characterized by sufficient company size and liquidity (S&P Dow Jones Indices 2017). It would be expected that the companies included on this list will have the resources and receive more pressure to disclose their environmental practice.

Purposeful sampling was used to accommodate the objective of the research, as the companies are postulated to exhibit various levels of disclosures in relation to their performances. Creswell (2007) suggests that the participants in a study should be selected purposively to meet the specific criteria related to the overall aim and

research questions of the study. Nine companies from the ASX200 were purposively selected to represent this study.

The brief profiles of the sample companies in this study are as follows. Steel Co. is a steel products manufacturer that uses a substantial amount of water and also energy from coal for the steelmaking process. As part of this process, the company emits a significant amount of greenhouse gas. Bricks' core business, as a construction and building materials manufacturer, uses a substantial amount of energy and emits a large quantity of greenhouse gas. Cement Ltd. is a construction material and lime manufacturer. The company's environmental impacts range from dust, noise, and vibration from releases to issues of more interest, including energy use, greenhouse gas emissions, water usage and conservation of natural materials. Retail Group is a conglomerate of major businesses, such as consumer retail and coal mining. Beer Co. is a major beverage firm with a diverse portfolio of wine, beer, spirit, ready to drink beverages, ciders and non-alcohol brands. Its main environmental issues are waste management and water conservation. Petrol Australia is an oil, gas and consumable fuels producer. Its major environmental issues include spillage, in which the products escape into the natural environment, carbon emissions from the use of its products by consumers, water consumption, and emissions from its refineries. GYPSUM has a diversified portfolio of businesses, such as building products manufacture and property development. The Medicine is a pharmaceutical company, and its environmental impacts include water usage, energy consumption, raw materials usage, carbon dioxide emissions and the production of solid and liquid waste. Coal Miner is a coal mining and marketing company that provides thermal and coking coal to local and international markets. With regard to the direct environmental impacts of its operations, the company produces waste coal mine gas from its mining activities.

The informants from these nine sample companies were approached to participate in the study. Christensen et al. (2014) posit that socially responsible and socially irresponsible actions are influenced by the leaders in the organizations. This study has proposed the examination of internal stakeholders, i.e., the management, as a precursor for both possible actions. Typically, the informants hold director positions or senior-level management positions in areas of sustainability, Health, Safety and Environment (HSE), investor relations, external affairs and corporate communication. In this current exploratory study, the firms' decisions to disclose their environmental information will be scrutinized in relation to their stakeholders.

3.3 Environmental performance measure

ASX200 companies are rated for their environmental performance on a monthly basis by the Corporate Monitor database. The ratings provide an independent judgement of the firms' environmental performance. The rating uses data from a wide range of reputable sources covering a wide range of issues and is using a five-star system (Corporate Monitor 2017). The companies are assessed on their environmental performance using several criteria, such as the environmental impacts of their products and services and third-party reports on their contributions to the

environment (Corporate Monitor 2017). The rating also takes into account the differences in industry sectors. This study will use the average monthly environmental ratings, as the rating score is a short-term stable variable rather than a volatile tracking device (Kristoffersen et al. 2006). Hence, the average rating scores can represent the companies' environmental performance ratings by an independent body in a similar way to those used in the studies by Freedman and Wasley (1990), Hughes et al. (2001), Ingram and Frazier (1980), Rockness (1985) and Wiseman (1982).

In this study, the sample companies are classified into two categories based on their level of environmental performance, i.e., above average and below average. Hence, the classification does not imply an absolute state of 'good or poor' but is relative to the average score.

3.4 Environmental disclosure measure

The level of environmental disclosure was assessed through a content analysis of the annual and sustainability reports and publicly available firm documents using Clarkson et al.'s (2008) Environmental Disclosure Index. The rating system provides greater validity by placing greater emphasis on "hard disclosures" of quantifiable information rather than on "soft disclosures" of values and aspirations, and it places different weights on each type of disclosure. The hard disclosures cover the following four areas: governance structure and management systems, credibility, environmental performance indicators and environmental spending. The soft disclosures include statements of environmental values, vision and strategy, environmental profiles presented to the public and environmental initiatives. The rating gives greater weight to verifiable areas (maximum 79) than unverifiable areas (maximum 16). The maximum score that a company could obtain on their environmental performance using that measure was 95. The debate over soft (qualitative, often unverifiable) and hard (quantitative, verifiable) environmental disclosure is mainly due to the possible manipulation of language in soft disclosures, making them of lower value than hard disclosures. Companies may use soft disclosures to portray their environmental awareness, to present positive environmental information, and to deflect attention from any negative environmental practices (Patten 2002a).

This current study uses several sources of environmental disclosures, such as the firms' annual reports, environmental reports, CSR or sustainability reports and company websites. The companies' environmental disclosures in those sources were then analysed using semantic content analysis to check whether they mentioned the items specified in the Clarkson et al. (2008) rating. Content analysis is preferred to line counts, as the value of the information is more important than the quantity of the information. In addition, firms may disclose more if they want to detail their environmental initiatives, which can still be detected through content analysis. In addition to the rating process above, an inter-rating process was performed by an independent research assistant. This procedure is necessary to ensure the reliability of any rating process (Tharenou et al. 2007). The results for the inter-rating processes reached a satisfactory level, with an average agreement rate of 89% being achieved.

3.5 Data collection

The informants from the sample firms were contacted for interviews, which lasted approximately 60–90 min each. The interviews were conducted with senior management level and/or director level employees who were involved in crafting the sustainability strategy and policy and were directly involved and/or influenced the production process of the sustainability reports (Table 1: Participant Details). The identities of the informants and their companies will not be disclosed, as per their requests. As a consequence, pseudonyms will be used to label the companies and the informants are assigned as 'Source' in this paper (see Table 1). Although the companies' publications were used for rating their environmental disclosures, further use of this information is avoided in this paper to protect the identities of the informants and the organizations they are associated with.

Two companies, the Medicine and Steel Co., have also made the External Affairs manager/director available to be interviewed for this study. These informants were also responsible for the publications of the firms' operations information, including their environmental and sustainability issues.

The study used a semi-structured interview that focuses on the management's stance on environmental responsibility, the stakeholder engagement process, the costs and benefits of disclosing from their point of view and the process of disclosing this environmental information (Please refer to Appendix 1: List of Interview Questions). Open-ended questions were used to give the participants the flexibility and freedom to provide their opinions and knowledge. Content coding was used to analyse the interview transcript; this process is used to reduce and analyse the data (Tharenou et al. 2007). The coding was based on specific issues of environmental performance, disclosure and stakeholder management, such as environmental impacts from operations and concerns from various stakeholders. Following the rationale and direction from the literature, these codes were then aggregated into categories or themes (Creswell 2007); the themes covered are management perception of environmental responsibility, stakeholder engagement process and the use of environmental disclosure as a method of stakeholder management. Logic analysis was conducted to present the data in narrative form. These inductive analyses from each case analysis and cross-case analysis were then used to provide explanations of the environmental disclosure behaviours.

4 Analysis and results

This section is devoted to, first, describing the environmental disclosure behaviours and environmental ratings of the sample companies in the study, and second, to answering the research question of the study, which refers to the reasons for disclosing or not disclosing environmental information.

Table 1 Participant details

Interviewee	Title or Rank (Area of Responsibility)	Organization	Core activities
Source 1	Corporate Level Senior Manager (Sustainability)	Cement Ltd	Construction materials
Source 2	Corporate Level Senior Manager (Environmental Area)	Bricks	Construction materials
Source 3	Corporate Level Senior Manager (Sustainability)	Retail Group	Diversified
Source 4	Environmental Specialist	Beer Co	Beverages
Source 5	Corporate Level Senior Staff or Advisor (Environmental)	Petrol Australia	Oil, gas and consumable fuels
Source 6	Corporate Level Senior Manager (Sustainability)	Coal Miner	Oil, gas and consumable fuels
Source 7	Corporate Level Senior Manager (Environmental)	GYPSUM	Building products
Source 8	Corporate Level Director (Corporate Responsibility)	The Medicine	Pharmaceuticals
Source 9	Corporate Level Director (External Affairs)	The Medicine	Pharmaceuticals
Source 10	Corporate Level Senior Manager (External Affairs)	Steel Co	Metal and Mining
Source 11	Corporate Level Senior Manager (Environmental Area)	Steel Co	Metal and Mining

4.1 Environmental performance and disclosure of the sample companies

The environmental disclosure scores and Corporate Monitor environmental performance ratings for all sample companies are presented in Table 2 below. In this section, the levels of environmental disclosures of the sample firms are reviewed in relation to the environmental disclosure measure used in this study.

The Environmental Disclosure scores for the sample companies indicate that the level of disclosure was very low in comparison to the possible maximum scores. The actual scores ranged from one (The Medicine) to 24 (Retail Group) for hard disclosures and from six (Coal Miner) to 10 (Beer Co.) for soft disclosures. The mean for soft disclosures, i.e., 8 out of a possible 16, was clearly proportionally higher than the mean for hard disclosures, which was 10.44 out of a possible 79. Overall disclosure scores ranged from eight (The Medicine) to 33 (Retail Group), with a mean of 18.44.

The majority of the disclosures were soft in nature, and the companies scored particularly highly on the category "Vision and Strategy Claims", averaging 4.11 out of a possible six. The firms scored less highly on the other two soft areas, i.e., provision of an environmental profile (mean of 1.67 of a possible 4) and claims on environmental initiatives (mean of 2.22 of a possible 6). In the hard disclosure area, the companies performed poorly across the whole range. The means were as follows: governance structures and management systems, 2.44 (out of six); credibility, 2.78 (out of 10); environmental performance indicators, 4.22 (out of 60); and environmental spending, 1 (out of 3). The highest score for the disclosure of environmental performance indicators was 13 out of 60 for Retail Group. Scores of zero for the environmental performance indicators were given to 4 of the sample companies in this study. Similarly, three companies gave no indication of their environmental spending [Please refer to Appendix 2 Table 3: Sample Companies' scores of the environmental disclosure (detailed rating across hard and soft criteria)].

Table 2 Sample companies' scores on the environmental disclosure and corporate monitor environmental ratings

Company name	Hard disclosure	Soft disclosure	Environmental disclosure (Total)	Corporate monitor environmental rating
Cement Ltd	16	8	24	2.00
Bricks	18	9	27	3.00
Retail Group	24	9	33	4.00
Beer Co	17	10	27	4.00
Steel Co	8	8	16	3.00
Petrol Australia	5	7	12	2.00
Coal Miner	3	6	9	2.00
GYPSUM	2	8	10	4.00
The Medicine	1	7	8	3.75

4.2 High level of disclosure group

There are 5 companies in this group that are considered to have high levels of environmental disclosures. Steel Co., Cement Ltd., Bricks, Beer Co. and Retail Group have overall scores of 16, 24, 27, 27 and 33, respectively. Their relatively high scores in comparison to the other companies in the study suggest that, on average, the disclosure levels in Australia are relatively low (see Fig. 1 and Table 2). Next, the analyses of the interviews with the informants in this high disclosure group are presented.

4.2.1 Management perception of environmental responsibility

With regard to environmental responsibility, all the sample companies in this group acknowledged the importance of treating the environment with respect. However, the reasons for caring for the environment may vary from the moral obligation of doing the right thing to focusing on the possible impact on the companies' economic bottom lines. For example, Retail Group stresses the strong connection between business and community and that caring for the environment serves more than legal compliance but is an internal requirement.

> '… it is only through a strong economy and a strong community that Retail Group business is actually operating effectively and profitably. As soon as the economy or the community starts breaking down, so would our businesses, and Corporate Social Responsibility is doing those things we can, which both provide for legal compliance and internal requirements' (Source 3).

Meanwhile, Bricks claims it takes the climate change issue seriously due to the potential financial consequences for the company's bottom line. However, the environmental issues surrounding climate change were not discussed, as carbon trading,

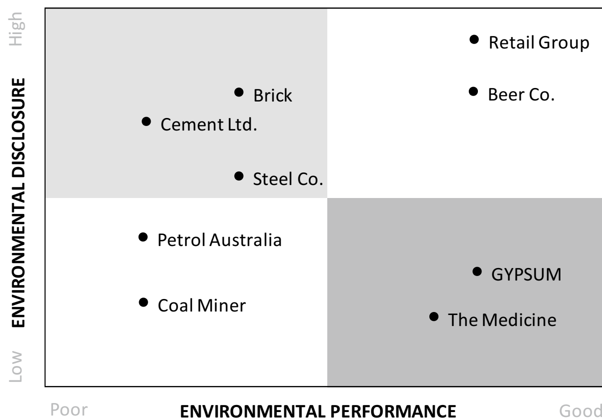

Fig. 1 Environmental performance and disclosure perceptual mapping

for example, is seen as purely an economic issue, as exemplified in the following interview quote:

> '…is now at this point of really serious integration into the company's financial management behaviour because it has a carbon price attached to it' (Source 2).

Steel Co. also shares a similar sentiment as Bricks, i.e., the firm's financial performance should take precedence over the environmental issues, which does not mean that they neglect their environmental responsibility; they purposefully decide to tackle the environmental issues selectively.

> 'I think it would be difficult for shareholders and customers and suppliers and your own employees if you were at that far end of the scale without a care in the world about the environment. I think there has to be something. You have to address it. But are they on that scale where you've got to be doing everything?' (Source 10).

The companies in this group view environmental responsibility as integral to their business operations. Thus, they acknowledge the importance of accommodating the interests of a wide group of stakeholders, not only shareholders, on the issue of environmental sustainability.

4.2.2 Stakeholder engagement process

On the issue of stakeholder engagement, the companies in this group have initiated mediums where they can engage with their stakeholders. The approaches of Steel Co., Cement Ltd. and Bricks are selective or even reactive and are designed to address the issues of concern to its stakeholders, particularly the local communities. Steel Co., for example, has created a complaint line where the community can voice their concerns regarding the environmental impacts from the firm's operations (Source 11). Meanwhile, Cement Ltd. holds meetings with local communities nearby its production facilities to understand their concerns. However, the irregular frequencies of these meetings may indicate that they are more reactive in dealing with the environmental issues caused by their operations.

> '…we don't set a fixed frequency for the meetings. It could be done once a year or even more frequent on bi-monthly basis. These are dependent on the sites and our operations. It also comes down to the communities—whether they are interested in a particular aspect of our operations. We talked to them about that.' (Source 1).

The feedback received from these stakeholder groups is then used as a basis for action.

On the other hand, Beer Co. and Retail Group try to develop a more comprehensive approach in addressing the environmental issues within their whole operations. Both companies have adopted a proactive approach to engaging with their stakeholders, by which their stakeholders can articulate their environmental concerns, and at the same time, the companies can inform their stakeholders

of their environmental values. For example, Beer Co. has been able to maintain regular communication with their stakeholders, as follows:

> '…these processes (consultative processes) are managed by local staff at the site level and also our communication staff. The dialogue allows us to integrate the issues of concern regarding our operations and at the same time, communicate to the communities on the progress made.' (Source 4).

Retail Group's stakeholders are very extensive, as the company has a wide range of business units. Despite these complexities, the company has encouraged its business units to engage with and build relationships with their stakeholders. Each business unit is also given the authority to develop an environmental management system that is suitable for its operations (Source 3).

4.2.3 Stakeholder management: environmental disclosure

Regarding environmental disclosure, these five sample companies disclose relatively high levels of environmental information. This disclosure may be done as a means to manage their relationships with their key stakeholders, particularly to address those environmental issues identified in their formal communication mechanisms. These companies acknowledge the target audiences for their environmental disclosure. They recognize the increasing interest from mainstream analysts for greater disclosure of environmental information and, to some extent, their expectation to disclose information. However, they also mention that, currently, ethical investors are still in the minority, although the trend is slowly changing. Bricks acknowledges that the financial markets value environmental information from the company, as the following quote exemplifies:

> 'That (lack of appreciation regarding environmental information) has changed…Several years ago, we started to try and introduce more of this discussion around sustainability and energy and climate change into those sorts of presentations and discussions. Glazed eyes. "What are you telling us [analysts] this for? This is not of interest. We don't see that as any influence on your actual share price and how we should view you as a company". That has been rapidly evolving, of course, to the point now where there is a great deal of interest about trying to understand all these things on Bricks for the next five years, for the next ten years.' (Source 2).

Environmental information may have more financial ramifications for the company's financial performance and future prospects, as financial markets and analysts are beginning to factor them into their financial decision-making processes. This recognition that financial markets demand more environmental information may have triggered Bricks' decision to disclose more.

The informant from Steel Co. also stresses the importance of disclosing environmental information, as there have been more expectations from the market for such information, as the following quote shows:

'…I think that the marketplace is becoming very environmentally aware and they do have expectations on environmental performance, including performance around climate change' (Source 11).

There seems to be an expectation from institutional investors for Steel Co. to continually produce environmental information, as exemplified in the following interview quote:

'…we've received a letter from the Australian Investment Super [mutual funds] Association that has given us a big tick for the work that we're doing already in the environment and the transparency that we have…' (Source 10).

Further, Retail Group says it has also recognized that financial markets have a greater interest in environmental information. This interest is not limited to ethical investors but also comes from mainstream investment analysts, as follows:

'We often now get questionnaires and surveys from financial and investment analysts who clearly read the report and are asking us questions about it. It is not a huge activity yet, but it is certainly increasing year on year. Socially responsible investment analysts do it. But there is also mainstream investment analysts doing it as well.' (Source 3).

In addition, the retail customer bases of Steel Co., Retail Group and Beer Co. have added pressure for them to disclose. Retail Group's customers are both institutional and retail, depending on the business unit. Retail Group claims it is also aware of increased pressure from stakeholders regarding its environmental performance, particularly in the retail businesses, as the following quote exemplifies:

'The retailers have a lot more customer pressure on them to respond to customer needs and to improve way beyond the minimum requirements of the law…' (Source 3).

Another informant from Steel Co. further explains the importance of disclosing environmental information for their customers.

'I think you really have to be doing some of these things [disclosing environmental information] in order to have the community happy that you're there or want to be there or people who are customers; why would they buy your products if they think that "oh well, this person doesn't care; they're just going away and polluting anyway they can"? The customers aren't going to be buying, so you're going to turn those people off' (Source 10).

Similarly, Beer Co. has mostly retail customers who may be curious about how the company manages its environmental footprint. The company's success is dependent on the brand image of the products and the company's image. The vast coverage of its retail customers may force Beer Co. to disclose more environmental information to satisfy the demand from this group of stakeholders.

4.3 Low level of disclosure group

There are four companies in this group, i.e., Petrol Australia, GYPSUM, Coal Miner, and The Medicine, and their overall environmental disclosure levels are 12, 10, 9, and 8, respectively. These companies disclosed more qualitative information, which is not as reliable as quantitative information, and their overall environmental disclosure levels are low in comparison to the other 5 sample companies (See Fig. 1 and Table 2).

4.3.1 Management perception of environmental responsibility

On the issue of environmental responsibility, the informant from Petrol Australia suggested that Petrol Australia may give the economic bottom line precedence over environmental issues, as follows:

> 'Petrol Australia has a vision and we have values and we say in our values that…we operate in a way that respects and protects the environment…But corporations are set up to make money. So that is the way our capitalist world works' (Source 5).

This may show that the environmental aspects may not be treated as urgently as the financial aspects. Furthermore, Petrol Australia is not acting responsibly about the use of its products, and the informant tends to blame the customers' product demand.

> 'And the use of our products and to have that bringing out anthropogenic climate change is the long-term impact our company has. But it is not exactly our company, it is our customers. They are actually the ones creating the greenhouse gases from our products, the general guy on the street.' (Source 5).

4.3.2 Stakeholder engagement process

Regarding stakeholder relations, all four sample companies in this low level of environmental disclosure group make minimal efforts to identify stakeholder concerns regarding the environmental impacts of their operations, which may be due to a lack of formal mechanisms through which stakeholders can voice their concerns. The companies tend to wait for complaints or queries to be made and then act on these issues. The discussion between the companies and stakeholders seems to be reactive, and stakeholders need to approach the company to obtain action, consistent with Bansal and Roth's (2000) claim that firms only act on environmental issues when it is in the companies' interest and where issues need to be dealt with to ensure firm survival. They argue that as a consequence, the aim is for mere compliance with the norms and regulations.

4.3.3 Stakeholder management: Environmental disclosure

On the environmental disclosure front, these companies appear not to feel any moral obligation to disclose more than is required, and the disclosures made are done selectively in a strategic fashion, primarily to satisfy the regulators. Petrol Australia admits to focusing on presenting positive stories that highlight environmental successes (Source 5), which may also explain the decision to use qualitative information. Petrol Australia is perfectly aware of this decision and the disclosure strategy is intentional.

On the same note, GYPSUM does not disclose much environmental information, and the company relies more on qualitative forms of disclosure. As demonstrated in the following quote, GYPSUM does not appear to bother to disclose more because it believes disclosure is voluntary, and so feels no need to:

> 'I don't think we are compelled. There is no law that says, you must do this. But we are under Corporations Act obligations as a publicly listed company. So, we have obligations under that' (Source 7).

Similarly, The Medicine's low environmental disclosure may have been caused by the type of investors who have invested their funds in The Medicine. The company has global institutional investors that focus more on the desired return rather than The Medicine's environmental practice credentials, according to the following interview quote:

> '…their mandate from their funds under management and the people who've invested in their fund is to "make me a return". Now, as we move towards more funds that say "make me a return but it must be environmentally sustainable" then I'll start getting those questions about "what is this standard, what is that standard, what are you doing here?", but that's not the case at the moment…' (Source 9).

The Medicine's other stakeholders, particularly its customers, may also contribute to this low environmental disclosure. The Medicine does not deal directly with individual households, as its products are sold to clinicians, physicians and hospitals.

> '…we don't have a lot to do with individual households. So, our products go more to clinicians, physicians, hospitals, these sorts of things. So, our company is known to a smaller group of people, but amongst that group of people being physicians, hospitals etc., we are well regarded in that they would look firstly as to the efficacy of our products and to the safety of our products' (Source 8).

This unique customer base of The Medicine may allow them to stay silent on environmental performance. The companies' close relations with their customers may allow them to inform only these rather 'exclusive' groups about their environmental performance, as these customer groups understand how a pharmaceutical company works and the environmental impacts it may cause. Thus, they may

not need to demand that The Medicine disclose its environmental practices to the wider community.

Meanwhile, Coal Miner acknowledges its obligations to respond to stakeholders on environmental issues, which may mean that Coal Miner implicitly chooses to stay silent due to the lack of demand from its stakeholder base. The company seems to endorse the 'flexibility' argument in disclosing environmental information. The support of the company for voluntary environmental reporting may explain its decision to disclose little environmental information, which may be due to the nature of its customer base. The company is the producer of almost 50% of one of the Australian States' energy coal needs and sells a third of its coal products to international markets. The company generally has institutional customers, and Coal Miner may, therefore, have more freedom not to disclose, as its stakeholders are not demanding disclosure.

4.4 High environmental disclosure: 'Good' versus 'Poor' environmental performers

Beer Co. and Retail Group each scored 4 (out of 5), while Cement Ltd., Bricks and Steel Co. scored 2, 3 and 3 (out of 5), respectively, based on the environmental performance ratings by Corporate Monitor. For the purpose of differentiating the levels of environmental performance, the former will be considered the 'Good' environmental performers and the latter ones are the 'Poor' environmental performers (See Fig. 1).

The companies in this group have relatively high environmental disclosures. These companies use both quantitative and qualitative forms of disclosure. The study found that there is an obvious recognition from the good and poor environmental performers in this group of the value of environmental information to financial markets, although the poor environmental performers tend to stress this more. External pressure from the equity and financial markets may have driven these companies to disclose this environmental information. Stakeholder theory is used to provide an explanation for the disclosure, as the firms appear to perceive that there is a strong demand for disclosure from the financial markets. The theory suggests that to maintain their survival, firms attempt to meet the demands of major and influential stakeholder groups (Gibson and O'Donovan 2007). The companies in the high disclosure group may receive these pressures, as they have greater exposure because their international operations attract the interest of global investment funds. As a consequence, they may offer a relatively high level of environmental disclosure to show that they have addressed the concerns of the financial markets, particularly in relation to future environmental risks and liabilities.

Within the good environmental performers, Beer Co. and Retail Group believe that their customers and the financial markets are demanding environmental information, and these companies respond to this demand by providing environmental disclosures. These companies have higher profiles in society due to their wider coverage of customer types, and this appears to result in an emphasis on the company image. The retail customer base of both companies provides a high incentive for

them to disclose. Retail Group also has a large retail base of investors—its major 20 investors own only 50 per cent of shares in the company, which is less than many other companies.

Bricks, Steel Co. and Cement Ltd. support the voluntary nature of environmental reporting, as it gives them flexibility. Particular environmental issues may also be addressed to satisfy influential stakeholders, particularly regulators, local communities and influential investors, who are seen to be able to affect the on-going operations of the firms. Sixty per cent of Bricks' shares, more than 80 per cent of Steel Co's shares and 75 per cent of Cement Ltd.'s shares are held by their top 20 investors; the companies acknowledge that the financial markets value environmental information and, to some extent, expect them to disclose information. These beliefs may also provide some explanation as to why they disclose relatively higher levels of environmental information despite their poor environmental performance.

4.5 Low environmental disclosure: 'Good' versus 'Poor' environmental performers

The Medicine and GYPSUM scored 3.75 and 4 (out of 5), respectively, on the Corporate Monitor's environmental rating; thus, they are considered to be 'Good' environmental performers. Petrol Australia and Coal Miner each scored 2 (out of 5), and as a consequence, they are rated as 'Poor' with regard to their environmental performance (See Fig. 1).

These four companies have relatively low environmental disclosure levels. Stakeholder theory may again provide some explanation for the non-occurrence, or low level, of environmental disclosure. These companies believe that because their stakeholders do not demand disclosure of environmental information, they do not need to respond to this pressure. This supports other research which suggests that in the absence of pressure or demands from key stakeholder groups, firms may choose to stay silent or disclose little, as they do not need to disclose to ensure their survival (Gibson and O'Donovan 2007). However, the 'Good' environmental performers in this group acknowledge that their disclosures are meant to satisfy regulators. Environmental disclosure may be a function of stakeholder demand for such information; in this case, the stakeholders are the regulators, and the disclosures are limited in focus to satisfy only this group. Unless there is increasing demand or pressure from other stakeholders, firms may reveal little, as there is a perceived benefit and costs involved in allocating resources to disclosure. Disclosure may not only cost money but may also trigger further enquiries about the firms' environmental practices.

Interestingly, both The Medicine and Coal Miner mention that there is a lack of demand from the companies' customer bases to disclose environmental information. Each company deals directly with institutional rather than retail customers. Coal Miner produces half of an Australian state's coal and sells one-third of its products overseas. The Medicine deals with hospitals and medical practitioners. These customers are in close contact with the firms and have regular communications about a wide range of issues with regard to products and operations. As a consequence, they may be aware of, or do not particularly care about, the firms' environmental

practices and, thus, may not demand the disclosure of the firm's environmental performance through formal communication channels. In addition, neither firm seems to be driven by demands from retail investors. Sixty-four per cent of The Medicine shares are held by the top 20 investors, all institutional; 71% of Coal Miner's shares are held by their top 20 investors—who are mostly institutional. Similarly, Petrol Australia and GYPSUM receive little pressure from individual shareholders for information; the top 20 shareholders own 78% of Petrol Australia's shares and 60% of GYPSUM's shares.

5 Discussion and conclusion

In this study, an effort has been made to clarify issues in relation to firms' environmental disclosures in Australia. The low environmental disclosure levels across the sample companies show that Australian businesses do not appear to believe there is a strong business case to disclose environmental information. Greater emphasis was placed on the disclosure of soft and un-verifiable disclosure items rather than hard or verifiable disclosure items, and on average, the companies scored very low on the total environmental disclosure indicators. Ong et al. (2016) also found similar results in their study of sustainability disclosure in Australia's resource industry, where 46 companies with the highest market capitalization in this environmentally sensitive industry were found to use more soft disclosure items than the hard disclosure items. The reporting revolves around the economic aspect rather than the social and environmental aspects of sustainability. Wiseman (1982) stresses the importance of reporting specific numerical environmental performance measures to ensure complete environmental reporting. The absence of such quantifiable data in the companies in this study, therefore, suggests that their environmental reporting is incomplete and indicates some reluctance to comprehensively disclose.

The analyses of the high and low environmental disclosure groups and intra-group ('Good' and 'Poor' environmental performers) levels have revealed some interesting findings, which may give a better understanding of environmental disclosure phenomena in Australia. The variability in the reporting could be explained using stakeholder theory, as it suggests that firms use disclosure to satisfy the demands of influential and major stakeholder groups, because the pressure from stakeholders influences the daily running of businesses (Freeman 1984; Donaldson and Preston 1995; Gibson and O'Donovan 2007).

The findings in this study have revealed that the firms attempted to address the issues of concern from their stakeholders. Although it is impossible for firms to be responsible for all environmental issues, the companies could be seen to be responsible for minimizing and rectifying the environmental problems that they have caused directly from their operations and that indirectly relate to their business operations and products (Wood 1991). These firms may have responded to these pressures by disclosing environmental information, as these actions are perceived as beneficial to both the particular stakeholder and the firms (Donaldson and Preston 1995).

Several studies in Australia have found that firms responded to the pressure from the regulatory bodies by providing more environmental information (Naudé et al.

2012; Lokuwaduge and Heenetigala 2017). For example, Lokuwaduge and Heenetigala (2017) found that the motives for environmental reporting from metal and mining companies listed in the Australian Securities Exchange are highly influenced by the reporting regulation, which means that the firms tend to be reactive in regard to reporting their environmental, social and governance (ESG) issues. Companies tend to report the indicators impacted by the existing regulatory requirements, such as greenhouse gas emissions, handling of hazardous wastages, etc.

Meanwhile, a study performed in Italy by Pistoni et al. (2016) also found that in addition to the pressure from regulators, the financial markets also impact how firms disclose their sustainability information. The companies that are listed on a stock exchange tend to receive more pressure to disclose more environmental information. It appears that the more visible a company is in the eyes of its shareholders, the higher the expectations for the company to disclose environmental information (Chandok and Singh 2017).

Based on the findings of this case study, firms may simply disclose because they feel pressured or are required to disclose their environmental practices. However, the findings show that there are uneven demands from different stakeholder groups. Firms may disclose more environmental information if there are demands from key influential stakeholder groups and may choose to disclose little or stay silent in the absence of such demands.

Companies in the high level of environmental disclosure group admitted that the financial market was driving them to disclose more. These findings are consistent with the study by Coghill et al. (2005), where superannuation funds or pension funds management have required greater disclosure of CSR risk-related issues by companies listed in the Australian Stock Exchange (ASX) before making any investment decision on behalf of their investors. Similarly, Lodhia and Martin (2014), in their study of BHP Billiton, one of the largest global mining companies based in Australia, found the company's decision to disclose sustainability information was influenced by the demand from the institutional investors, who expect the company to manage their business risks. Thus, disclosure is used to reach the targeted audience with the relevant environmental information according to their concerns (Higgins et al. 2015). In addition, retail customers are another influential stakeholder group who demands increased disclosure.

On the other side, the low level of environmental disclosure may be explained by the lack of pressure/demands from the companies' stakeholders (Stubbs et al. 2013). Regulators may seem to be the prominent stakeholder group, and as a result of their limited requirements for disclosure, companies disclose little, possibly merely to comply with laws and regulations. In dealing with the demand from institutional investors, they may offer the required information through private meetings instead of producing public documents (Stubbs et al. 2013). This may indicate that good performers may support this argument of disclosing the information as needed basis, which may explain the behaviour of the high performance but low disclosure group (i.e., The Medicine and GYPSUM). Meanwhile, in dealing with their customers, the type of customer seems to play a part in explaining the low level of environmental disclosure. This study finds that the institutional customer base for a few of the companies in the low level of environmental disclosure group may also contribute to

their limited disclosure, which could be caused by a lack of demand or requirement from the institutional customer base for these companies to disclose. The companies with low levels of disclosure in this current study seem to adopt a 'decision-usefulness' perspective, as suggested by Stubbs et al. (2013). In the event of no demand/ pressure from their stakeholders (i.e., government, consumer, institutional investors, industry associations, etc.), they would disclose little.

This study highlights the importance of a proactive approach from companies' stakeholders in asking for more detailed environmental disclosures from the companies. In the 2017 annual survey by the Australian Centre for Corporate Social Responsibility (ACCSR), 50 per cent of the 1215 respondents agree that more strict reporting practices are needed in Australia and New Zealand (Australian Centre for Corporate Social Responsibility (ACCSR) 2017). Both countries' stock exchanges have encouraged broader reporting of environmental, social and governance (ESG) risks by companies.

Both the good and poor environmental performers' disclosure behaviours in this study acknowledged the existence of or lack of pressure/demands from their major stakeholders, including financial markets, retail customers and the government, and this seems to influence their decision to disclose or to not disclose environmental information. Environmental performance per se is not the only reason for disclosure; both good and poor performers have high and low disclosure. In the high level of environmental disclosure group, apart from the demand from the financial market, the firms with good environmental performance in this group claim that their customers also demand more information about their environmental practices. Meanwhile, in the low level of environmental disclosure group, there seems to be no difference in the environmental disclosure behaviours between the good and poor environmental performers.

In conclusion, it seems that most firms prefer to limit their environmental disclosure unless they receive pressure from their stakeholders. The visibility of key stakeholders and their environmental information demands affected the production of environmental information. The findings suggest that if environmental disclosure is a function of pressure or demands from influential stakeholder groups, the current, largely voluntary, nature of environmental reporting will not encourage them to disclose more, as firms may only disclose if they perceive pressure or demands from their stakeholders, including regulators. Therefore, the Australian government may want to consider implementing regulations that require more disclosure surrounding companies' environmental impacts and that purposefully relate disclosure to quantifiable environmental performance measures. The pressure or demand to comply with the reporting standard may allow for more transparency, which may force businesses to disclose on how they manage their environmental impact. Arguably, businesses will strive to go beyond the standard (i.e. environmental performance metrics mandated by the government) to maintain supports from their stakeholders as the opposite may mean receiving backlash from their stakeholders or be perceived as less environmentally responsible by their stakeholders. Customers also hold the power to demand that companies are environmentally responsible and, in turn, may make them accountable by demanding that they disclose their environmental performance. In addition, financial markets can also increase the requirements for listed

companies, such as progressively making the adoption of the Global Reporting Initiative (GRI) reporting framework for environmental disclosure mandatory.

6 Limitations and directions for future research

Some limitations of this study need to be taken into consideration in interpreting the findings. The small sample size in this study should be taken into account in generalizing the disclosure behaviours of firms in Australia. This study has used 'relativity' in classifying the companies' environmental performances and disclosures. The findings need to be interpreted in the light of this 'relativity', and even the 'high level of disclosure group' had an objectively low level of disclosure. The current study looks into the overall industries in the ASX 200; hence, there was no specific acknowledgement of industry-specific environmental issues. Although the rating process performed by Corporate Monitor has taken these issues into consideration, companies in high-impact industries may find it more challenging to achieve the same level of environmental performance as companies in low- to moderate-impact industries. For certain industries, it is also inevitable that the use of their companies' products by consumers may be perceived negatively or may damage the environment, for example, the use of gas. Thus, it is worthwhile to perform further case study analysis on an industry-specific basis.

Appendix 1

List of interview questions

General questions

1. Could you please introduce yourself and describe the role you play in the organisation?
2. How do you view the company's relationship with society and the environment?
3. What do you see as the impacts of your company's operations on the environment?
4. What do you think about climate change and its impact to your company?

Management perception or acceptance of environmental responsibility

5. How do you identify the concerns of stakeholders with regard to environmental issues?
6. Which particular stakeholders are able to send their messages across to the company? Which are you most aware of?
7. How do you think the financial market and institutions view any environmental information from your company?
8. What do you think are the Australian people's or society's views on your environmental impact? Where do you source this information?

9. Are there any pressures from NGOs, the government, or environmental groups due to the industry classification or core business activities?

Environmental disclosure

10. Do you feel compelled to inform stakeholders of any actions taken by the company to be environmentally responsible?
11. Do you think there is any value for the company in informing its stakeholders of its environmental initiatives?
12. How do you decide the extent and depth of environmental information that is published in your annual report or elsewhere?
13. What type of reporting framework does your company use to report its environmental performance (Internal or External)? Why do you use that particular framework?
14. Do you use other mediums besides the annual report to disclose such information?

    If yes, what medium do you use and why?
15. How do you increase the reliability of such information?

Appendix 2

See Table 3.

Table 3 Sample Companies' scores of the environmental disclosure (detailed rating across hard and soft criteria)

	Hard disclosure items*					Soft disclosure items**				
Company name	A1	A2	A3	A4	Total hard disclosure (Max 79)	A5	A6	A7	Total soft disclosure (Max 16)	Total hard & soft disclosure
Cement Ltd	4	5	6	1	16	5	1	2	8	24
Steel Co	3	1	2	2	8	4	3	1	8	16
Bricks	5	5	7	1	18	4	1	4	9	27
Petrol Australia	1	2	0	2	5	5	2	0	7	12
Coal Miner	0	2	0	1	3	3	2	1	6	9
The Medicine	1	0	0	0	1	3	1	3	7	8
GYPSUM	1	1	0	0	2	4	2	2	8	10
Beer Co	3	4	10	0	17	4	2	4	10	27
Retail group	4	5	13	2	24	5	1	3	9	33
Max	5	5	13	2	24	5	3	4	10	33
Min	0	0	0	0	1	3	1	0	6	8
Average	2.44	2.78	4.22	1.00	10.44	4.11	1.67	2.22	8.00	18.44
Std deviation	1.74	1.99	4.97	0.87	8.41	0.78	0.71	1.39	1.22	9.40

*Hard Disclosure Items: A1 = Governance Structure and Management Systems (Max 6), A2 = Credibility (Max 10), A3 = Environmental Performance Indicators (Max 60), A4 = Environmental Spending (Max 3)

**Soft Disclosure Items: A5 = Vision and Strategy Claims (Max 6), A6 = Environmental Profile (Max 4), A7 = Environmental Initiatives (Max 6)

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