

Revisiting the Literature on Environmental Reporting Practices in Annual Reports in Australia

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The aim of this paper is to provide an overview of Australian evidence on environmental reporting literature. It looks at and analyses the contemporary research articles that investigate the environmental reporting practices in annual reports in Australia with a view to map out to what extent current environmental practices have been defined in the Australian literature and what is yet to be explored. This paper discusses in details what studies have been done in this field in Australia, how they have been conducted and what issues or implications come out of these studies. It will help the prospective researchers in this field to ponder on what else needs to be done and what other methods or improvements can be applied or made in doing so.

Field of study: Environmental and Social Reporting

1. Introduction

Australia has observed a spectacular evolution in community and investors stance towards the environment in the past few decades. Ever-increasing awareness of environmental pollution, global warming and diminishing supply of natural resources direct societal attention towards the environmental activities of business organizations. In response, more and more companies have been developing the practice of environmental reporting in the form of voluntary environmental disclosures (VED) as a recognised division of corporate annual reports (AR) which has become a burgeoning interest for the researchers in Australia and elsewhere in the last few decades. This paper particularly looks at and analyses the research articles that investigate the environmental reporting practices in AR (which is most frequently studied and has closest proximity to regulation than other disclosure media) in Australia. Early Australian studies (Trotman and Bradley, 1981; Guthrie and Parker, 1989; Guthrie and Parker, 1990) on environmental disclosure commenced by documenting the more generic disclosure practices relating to social responsibility. These are followed in 1990s by the investigation concentrating specifically on the VED practices of Australian companies, its association with environmental regulation, pressure groups, media visibility, and its materiality to the users of the AR that sought to explain it from different theoretical perspectives (Tilt, 1994; Deegan and Gordon, 1996; Deegan and Rankin, 1996; Deegan and Rankin, 1997). While increase in VED in AR has been documented, their discretionary nature and possible material impact on users' decision-making procedure raised great concern which would probably be

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incorporated into the introduction of new environmental legislation - section 299(1) (f) *Company Law Review Act 1998*. The latter opened a new episode in the extant Australian environmental literature by providing research opportunities to compare corporate reporting of environmental information in both the voluntary and statutory segments of AR (Cowan and Gadenne (2005).

During the current decade, Australian researchers are seen to be more enthusiastic in analysing the AR disclosure of environmental information from different perspectives. While some of the studies extend the previous work in relation to the extent and nature of the VED, testing theories that can explain such disclosure and influence of lobby groups on such disclosures (Deegan, Rankin & Tobin, 2002; O'Donovan, 2002; Cowan and Gadenne, 2005; Deegan and Blomquist, (2006), others tend to explore different issues related to its relationship with share price (Deegan, 2004), reporting on trend of environmental reporting practices in Australia (Gibson and O'Donovan, 2006), underlying research method (Guthrie and Abeysekera, 2006) and, more recently, the quality of the VED in corporate annual reports (Guthrie, Cuganesan and Ward, 2008).

Some of the studies mentioned above are analysed and discussed in depth in this paper with a special attention to the research method and theoretical framework. In particular, the purpose of this paper is not to offer any new empirical evidence; rather it attempts to revisit and rearrange the extant Australian evidence on corporate environmental disclosures in AR in a comprehensive way. The remainder of the paper is structured as follows. The next section provides an in depth discussion of some of the landmark studies in the Australian literature that analysed specifically the environmental reporting practices in corporate AR in Australia. The findings and implications are discussed in the penultimate section followed by conclusion.

2. Discussion on Contemporary Literature

The first study undertaken in this area was by Trotman and Bradley (1981). They attempted to examine the social responsibility disclosures of 207 Australian companies in the AR for the year 1978 and identify the association between the level of social disclosure and various factors that would promote such disclosure, namely, the company size, systematic risk, social constraints and the management decision horizon. Environmental disclosure was included as one of the categories in the definition of social disclosure. The social disclosures are measured as a percentage of the discussion of all issues. Size is determined by total assets and sales whereas systematic risk is determined by each company's β taken from the Australian Graduate School of Management's List of company betas. The authors conducted a questionnaire (closed) that asked the managements to provide information regarding the social constraints that the firms face and the management decision horizon by rating a five-point scale. The study revealed that both the systematic risk and the size factors have a positive relationship with the amount of social disclosures. However, while the authors empirically tested the association of the social disclosures to the various factors they did not classify the various types of disclosure into different groups (e.g., financial/non-financial, quantitative/descriptive or environmental/community based, and so on); instead they preferred to adopt an

aggregate approach. Therefore, the level of and the effect of the factors specifically on the environmental disclosure in this paper is difficult to establish.

While the above study is limited to the Australian context, the corporate social disclosure in AR is examined from an international perspective later by Guthrie and Parker (1990); they compared the reporting practices across a sample of 50 largest listed companies in the US, the UK and Australia in 1983. They examined social disclosure by content analysis of the AR under the headings of environmental, energy, human resources, products, community involvement and others which were further grouped into monetary, non-monetary, and declarative or none. The authors reported a significant difference between the environmental reporting practices of the three countries. Overall, the UK companies provided more social disclosures (98% of reports), followed by the US (85% percent of reports) and finally Australia (56% of reports). 21% of the Australian companies making disclosures were found to provide environmental information as well, compared to 53% in the US and 14% in the UK.

In all the three countries, human resource disclosures appeared to be greatest (98% in the UK companies), followed by community involvement and then by environmentally related disclosures with the highest level of negative environmental disclosures reported by the US companies (22% of the AR), followed by the UK (2%) and Australia (less than 1%). The majority of the negative news was found in the audited sections whereas the positive news was mainly reported in the voluntary sections of the AR. The authors suggested that increased environmental disclosure including the negative information in the audited section is associated with the higher level of regulations in the United States pertaining to environmental and social disclosure requirements in AR. While the authors assumed that the high levels of voluntary social disclosures may be an indication that such disclosures 'may delay, avoid, or indeed set the agenda for the imposition of regulated social disclosures' (Guthrie and Parker, 1990, p. 171), they did not test for potential explanations across the level of the disclosure; rather they preferred to focus simply on reporting and comparing the level of the disclosure itself.

In another landmark study, Guthrie and Parker (1989) investigated disclosure practices in AR by BHP between the years 1885 and 1985. They investigated whether there was a relationship between social disclosures (categorised into environment, energy, human resources, products, community involvement and other as measured by number of pages) and major corporate events (as evidenced by a number of available studies of BHP's history) by looking at the concurrence between the timing of disclosures and related events and sought to explain that in the light of legitimacy theory. According to Guthrie and Parker (1989), legitimacy theory posits that corporate disclosures are made as reactions to environmental pressures (economic, social, and political) in order to legitimise the corporation's existence and actions. While reviewing the BHP's disclosure policies, Guthrie and Parker (1989) found that a peak level of environmental disclosure was associated with a time in which mining, steel and oil industries became targets for criticism by environmental groups. The increased disclosures may have been explained as strategic attempts to counter the criticisms raised by the environmental groups. Though this study limited its scope to one company only, it is unique in the sense that it examined disclosure practices of an environmentally sensitive company over a period of 100 years and

attempted to explore a cause-effect relationship that could be explained by legitimacy theory.

It is important to note that the work of Guthrie and Parker (1989) has been updated later by Deegan, Rankin and Tobin (2002) through an examination of BHP's social and environmental disclosures in AR for the period 1983-1997. But, unlike Guthrie and Parker (1989), the authors measured 'community concern' by using the quantities of articles referring to BHP's social and environmental activities in the print media available in the Australian Business Index Database (ABIX) during the 15 year study period and grouped the news into favourable, unfavourable and others. Similar to Guthrie and Parker (1989) the authors found that the quantity of disclosures increased over the period. They also found a positive relationship between the level of media coverage on BHP's social and environmental activities and the amount of environmental disclosures in the AR. The authors also claimed that in spite of the majority of the media articles portraying the company's impact on society and the environment unfavourably, significant quantities of the AR disclosures were positive in nature, providing support for the legitimation motives for the company's social disclosures.

While the above studies examined the AR for more generic disclosure practices related to the corporate social responsibility, the first study that focused specifically at environmental disclosures in Australia was Deegan and Gordon (1996). In this study, the authors investigated a number of separate but related issues, namely, the objectivity of corporate environmental disclosure practices, the trend in environmental disclosures across time and whether environmental disclosures may be related to concern held by environmental groups about particular industry's environmental performance.

First, they examined the environmental disclosures by applying content analysis to the AR of a sample of 197 companies from 16 industries randomly selected from the database of the Australian Graduate School of Management (AGSM) annual report file for 1991. The result confirmed similar findings previously documented by Guthrie and Parker (1990). The authors concluded that the amount of VED in Australia is typically low, being only an average of 186 words for the sample companies and they are mostly positive (maximum 1049 words/2 pages), with little or no negative information (maximum 85 words/5 lines) being made by all firms in the study.

Secondly, they tested whether VED of the sample companies had changed across time since 1980 and if so whether it has any relationship with increased environmental concerns. A random sample of 25 firms with no more than 3 firms from each industry was selected. The AR of each of these 25 firms for the year 1980, 1985, 1988 and 1991 (100 observations) were then examined in the same manner mentioned before to test the total, positive and negative amount of disclosures. Change in the membership of Australia's four leading environmental groups (Australian Conservation Foundation, Greenpeace, and World Wide Fund for Nature and Wilderness Society) over the period is used as a proxy for environmental concern. The authors found a significant increase in disclosure practice corresponds to the period of similar increase in environmental-group membership. If the changes in membership are considered to be reflective of changes in community values, these findings appeared to provide support for legitimacy theory.

Finally, the authors examined whether environmental disclosures have any association with the concern held by environmental groups about particular industry's environmental performance (environmental sensitivity). The later was determined by sending a questionnaire to 41 environmental organisations (representing 200,000 memberships) selected from the '*The Green Pages*' 1991 - 1992: Directory of Environmental Groups in Australia, published by the Australian Conservation Foundation. The questionnaire required an office-bearer (a person that would be best placed to assess the nation-wide impact of their organisation's activities on the environment) of each organisation to rate an industry, on a 0-5 scale (5 = highest, 0 = lowest), according to the extent to which their organisation had targeted the industry for its environmental activities in the last five years. With a response rate of 82.5%, the result showed a positive correlation between environmental sensitivity and the level of corporate environmental disclosures. The effect of the size (based on sales revenue) of the firms of environmentally sensitive industries on disclosure was also tested and a positive correlation was found. The overall results indicated that voluntary corporate disclosures in Australia do not appear to provide environmentally informative reporting. The authors concluded that in an unregulated environment, management will be less than objective in its environmental disclosure practices. This lack of objectivity seems to increase as the environmental sensitivity of the industry increases.

At the same time, Deegan and Rankin (1996) undertook another study from a narrower perspective to investigate the VED made by a sample of 20 firms that were successfully prosecuted a total of 78 times by the New South Wales and Victorian Environmental Protection Authorities (EPAs) for breaches of various environmental protection laws during the period 1990 to 1993. Having known that the sample firms had already some bad news to disclose, the authors examined the AR to see whether there is any mention of environmental wrongdoings, or whether it is consistent with the 'self-laudatory' disclosing practices revealed in the random sample reviewed by Deegan and Gordon (1996). These were matched by industry and size to a control group of 20 firms which had not been prosecuted to see whether there were any systematic differences between the VED policies of the prosecuted and non-prosecuted companies in the year of prosecution.

The research method used was content analysis and word-count was used as unit of analysis. However, the authors acknowledged that word-count would not provide an exact measurement. Of the 20 prosecuted firms, 18 provided environmental information in their AR which was predominantly positive and qualitative in nature. The mean amount of negative disclosures (5.5 words) was surprisingly consistent with that reported by Deegan and Gordon (5.7 words), even when the firms had "negative" news to report.

A further comparison between the total environmental disclosures in the years of prosecution and the years (1990 to 1993 inclusive) with no prosecution showed disclosures being greater in the year of prosecution than that of non-prosecution. The findings also revealed that the prosecuted firms provided more VED than non-prosecuted firms during the study period. This is consistent with the view that firms increase disclosures in an attempt to offset, at least partly, any effects of EPA prosecution with a view to alter public perception about the legitimacy of the organisation by deflecting attention from the proven fines by not mentioning them

within the AR towards the positive environmental policies the firm are adopting. The findings gave rise to 2 very important questions – 1) is the environmental information is relevant to account users in determining their level of support for an organisation? If yes, 2) are not the accounts of those firms that elect to omit negative environmental information misleading?

The first question stated above was addressed by Deegan and Rankin (1997) who investigated empirically whether various classes of AR users consider environmental information material for their decision-making about an organisation. The sample used would be considered to be quite representative comprising 254 shareholders (randomly selected from the list of the Australian Shareholders' Association), 93 stockbrokers and research analysts (random sample provided by the ASX), 63 accounting academics (the Heads of Australian university accounting departments as identified by the ICAA database), representatives of financial institutions (24 largest banks, building societies and credit unions within Australia) and a number of organisations performing a general review or oversight function (including Australian Council of Trade Unions (ACTU), environmental lobby groups, industry associations, and consumer associations). The questionnaire used in the survey required the respondents to state yes/no regarding whether environmental issues are material to their decisions about a company and whether they seek environmental information in the AR (with a view to gauge the relative importance of the AR as a source of environmental information). Survey participants were also requested to rank the importance of disclosure of various items of information (e.g., profit, cash flows, dividends, environmental performance, health and safety issues and others) about a company on a 5-point Likert scale with 1 representing unimportant, and 5 highly important.

Overall, a significant proportion of respondents believed that environmental issues were material to decision making, with the strongest support coming from review organisations (83%) and shareholders (72.4%). However, rankings of information items showed that, in general, environmental information is not considered to be of primary importance. The total group of respondents (67.8%) perceived the AR to be significantly more important than any other sources of information concerning an organisation's environmental performance.

Meanwhile, based on the assumption that environmental disclosures result from the legitimisation tactics chosen by the managers, O'Donovan (2002) sought to examine the environmental disclosure in the AR from a different perspective in an attempt to extend the applicability and predictive power of legitimacy theory. The author examined whether there is any possible link between a potentially legitimacy threatening environmental issue/event and managers' choice of legitimacy tactics with regard to AR disclosures of environmental information, and whether the purpose of the choice of tactics is to gain, maintain or repair legitimacy from an operational point of view rather than being critical. The research method adopted was quasi-experimental involving interviews with 6 managers from three largest (by market capitalization as at 30 June 1998) Australian companies within the three environmentally sensitive (considered by stakeholders and environmentalists) industry groups (BHP – mining, Orica – chemical and Amcor – pulp and paper). The interviewees were given 4 different scenarios involving 4 fictitious companies facing 4 different hypothetical environmental issues/events of varying impact. The scenarios were considered to be structured realistically in the sense that they were

based on the extant literature on legitimacy theory, media reports about environmental issues, media reports linking the companies in the study to environmental issues and prior AR of the companies. The in-depth interviews consisted a series of closed questions requiring the interviewees to make choice as to the likelihood of adopting different types of AR disclosures (legitimation tactics in terms of avoiding, altering social values, altering societal perceptions and conforming) and to rank them in response to the given issue/event and the open questions which required them to state the reasons for choices and their perceptions about the issues/events that precipitated the choices.

It is argued that constructing the research method and questionnaires in such a way allowed the managers better to interpret the relevant information about their thinking, perceptions and thought processes than would be the case if the managers were to respond solely about why past disclosures had been made. The best part of the adopted research method is that, it allowed the interviewees to express more honest responses as the questionnaire was not about any sensitive issues related directly to their own organisations. But the use of the small numbers (6) of the respondents interviewed in the study would make the generalisation of the result of the study questionable. However, considering the fact that the sample companies used in this study are the representatives in their respective industry groups, and there is empirical evidence that environmental disclosures are mostly made by the companies that are large and belong to environmentally sensitive industries (Trotman and Bradley, 1981; Guthrie and Parker, 1990; Deegan and Gordon, 1996), the results can be deemed to be reasonably representative.

The findings suggested that less significant issues/events were not considered to be legitimation threats to the organisation and would not lead the managers to adopt any legitimation tactic or to make any specific AR disclosure. The legitimation disclosure matrix derived from the results of the study showed that 'altering societal perception' is the only one of the four tactics which was likely to be chosen by the managers as a legitimation tactic irrespective of the significance of the issues/events given. The overarching conclusion indicated that environmental disclosure decisions were made on the basis of presenting the corporation positively to the society and hence similar to prior researches (Deegan and Gordon, 1996; Deegan and Rankin, 1996) it again made the decision usefulness value of the voluntary environmental disclosure in the AR questionable.

More recently, Gibson and O'Donovan (2006) focused on the practical analysis of the observed phenomena related to the AR disclosure of environmental information in an attempt to plot a trend in reporting behaviour. They conducted a landmark study that examined the quantity and categories of environmental information disclosed in the AR of 41 Australian publicly listed companies across eight industry groups (with perceived environmental effects) over 20 years covering the period from 1983 to 2003 with a final sample of 752 annual reports.

Content analysis was used to measure the information provision. The information was categorised into financial, quantifiable non-financial and descriptive. The quantity of the total information and each category was measured as a proportion of page, a method which the authors preferred to the word counts and number of sentences. Trends were identified over the 21-year period in relation to the total and

each category of the environmental disclosures, and industry-based disclosures. The trend of environmental disclosures as a percentage of AR had also been identified.

The study indicated that an increasing number of companies was disclosing environmental information, and the relative volume of such information had increased across all categories with the most in the descriptive category and the least in the quantifiable non-financial information category. The strength of this study is that it attempted to construct 'reliable' trends in environmental reporting practices in Australia not only from the perspective of different groups of industries but also from the standpoint of the categories of disclosure by examining the same companies over a 21-year period. However, no attempt had been made in this study to define and measure the quality of the disclosures.

The quality issue had been addressed, though in a limited way, in a very recent Australian study undertaken by Guthrie, Cuganesan and Ward (2008) where the authors examined the quality of the social and environmental disclosures of the companies that belong to the Australian Food and Beverage Industry (AFBI) in 2004. This was measured against an industry-specific reporting framework (IRF) which they developed on the basis of social and environmental issues addressed in publicly available reports of AFBI associations, councils and government bodies, industry-specific indicators identified by well recognised sustainability ranking organizations, and publicly available reports of companies belong to food and beverage industry that are internationally recognized for best practice in sustainability reporting, in addition to more universal reporting requirements (GRI). It concluded that the sample companies reported more on industry-specific issues than general social and environmental issues and tended to utilise corporate websites more than the AR for their social and environmental reporting. The strength of this study is that it pointed out the limitations of using a general framework which is rather a one-size-fits-all approach and devised a new method to analyse the quality of VED by constructing IRF. While the study is limited to a single industry, the suggested research method would help future researchers to examine the quality of VED from a multiple-industry perspective.

3. Findings and Implications

Most of the Australian studies mentioned above tend to provide support for legitimacy theory while explaining the VED in AR. Managements' attempts to provide VED in AR are perceived to be a legitimation tool that informs the community that the organisations' culture and beliefs are congruent with those of society. This has been tested as part of observed phenomenon (Deegan and Gordon, 1996) as well as by self-generating data gathered by extensive interviews (O'Donovan, 2002). However, It is argued that a number of theories such as stakeholder theory (managerial branch), political cost hypothesis of positive accounting theory, institutional theory, which are overlapping to some extent, would also have been relevant in explaining environmental disclosure (Deegan, 2002).

Regarding the empirical issues, the review shows that while Australian firms increased provision of environmental information over the period of time in the voluntary section of the AR, the disclosures are mostly positive even when firms have negative news to disclose. The materiality of VED to the Australian users of AR

has also been demonstrated and the researchers found that management provide information in order to alter societal perceptions about certain events having environmental impact with a view to gain, maintain or repair legitimacy instead of demonstrating accountability. The association of VED with firm-size, profitability, industry membership, societal awareness for environment and regulation has also been demonstrated; but there is a dearth of research relating to the quality of environmental disclosures with special emphasis on 'what is reported' and 'how it is reported' in annual report. Future research should specifically address this issue in terms of relevance, reliability, materiality and comparability. It will help to explain the status quo and specific shortcomings of the firms' reporting practices in Australia. This in turn will help the policy-makers and regulators to recognize the need to change the current accounting practices to include a new and relevant set of descriptions of organisational actions on the natural system and thereby assist them in developing proper and rational environmental standards to promote organisational accountability. The problem associated with research method in investing quality issues would be one possible reason which is discussed below.

The most common research method employed in the studies mentioned above was content analysis which is a data collection technique involving codification of qualitative and quantitative disclosures into pre-specified categories in order to develop a reporting pattern. Certain technical issues like use of unit of analysis, data capturing and reliability and validity need to be carefully considered for content analysis to be effective (Guthrie and Mathews, 1985; Guthrie et al, 2004b). Number of sentences is preferred over word-counts by many authors as a basis for unit of analysis and coding as it is likely to provide complete, meaningful data (Grey et al, 1995b, Milne and Adler, 1999) and exclude bias from using varying words in different reports for expressing similar information. While some authors chose paragraph method where disclosure is measured by counting frequency at both category and element level (Guthrie and Abeysekera, 2006), others prefer proportion of a page as a unit of analysis to take into account the importance of charts, tables and photographs (Unerman, 2000). Although some authors consider that "a picture may be worth a thousand words" (Wilmshurst and Frost, 2000, p.13), but this can also be considered as irrelevant and simply an impression creating tool to influence the stakeholders.

The success of content analysis in making replicable and valid inferences also depends on the reliability and validity of the procedures employed. The reliability of the coded data can be achieved by use of multiple coders and comparing their results for discrepancies as is done in Deegan and Gordon (1996) and Deegan, Rankin and Tobin (2002). Careful construction of the coding instrument itself by selecting disclosure categories from well-grounded relevant literature, defining them clearly and establishing well specified decision categories and decision rules would also increase the reliability of the procedure (Guthrie and Abeysekera, 2006). Combining other methodologies such as surveys or interviews with content analysis, which had been applied barely in the Australian social and environmental literature, would also be adopted. As different methodologies have different merits and they do not share similar weaknesses, use of combined approach would increase confidence in results (Guthrie and Abeysekera, 2006).

Even after careful consideration of all these issues, researchers (Deegan and Gordon, 1996; Guthrie and Parker, 1990) highlighted the difficulty of relating findings to the quality of reporting by content analysis and recognised that having more emphasis on capturing quantity rather than quality of disclosures is one of its major limitations (Mathews 1997, Guthrie and Abeysekera, 2006). Constructing disclosure index by making allowance for variations (unequal scoring) regarding importance and relevance of different types of disclosure would address this issue to some extent (Guthrie and Abeysekera, 2006). In addition, the issue of industry-specificity needs to be addressed while evaluating the disclosures as environmental impact can vary greatly among different industries (Guthrie, Cuganesan and Ward, 2008).

4. Conclusion

This review of the contemporary Australian literature that empirically tested VED in AR revealed that while the issues – extent and nature of VED over the period of time, materiality of VED to users of AR, its association with factors such as firm-size, industry, stakeholders-influence, regulation and profitability were empirically investigated, the quality issue remained largely unattended. Future research should address this gap and find out the specific shortcomings in the environmental reporting practices to improve their quality. While legitimacy theory was widely tested, the other relevant theories such as stakeholder theory, institutional theory or political cost hypothesis of positive accounting theory are yet to be explored. Being the most widely adopted research method some of the limitations and improvements relating to content analysis have been delineated in the above section. Future research on environmental reporting practices in AR in Australia would focus on these issues and make a useful contribution to this field.

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