

***Annual Reports: a mechanism to signal sustainable  
performance?***

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*This aim of this paper is to revisit the disclosure of environmental and social information in annual reports of Australian firms. Based on the categories of the Global Reporting Initiative (GRI) and using content analysis the study annual reports for a five year period were examined to determine the type and content of disclosure on environmental and social issues. The findings from logistic regression analysis interconnect the firm's reporting of categorical imperatives with their reporting of sustainability issues and key performance indicators. The results suggest a considerable reporting improvement in warranted to connect information that reflects the firm's performance on social and environmental issues to the user.*

**Keywords:** annual reports, content analysis, sustainability reporting, social and environmental performance.

Comments welcome

## 1. INTRODUCTION

The relationship between human activity and the environment and social issues is not a recent phenomenon. In 1962 Rachel Carson published her book *Silent Spring*, and brought to the attention of the public, concerns relating to the use of pesticides on agricultural goods produced for human consumption. In 1972 the United Nations Conference in Stockholm emphasised the need for more prudent care for the environmental consequences of our actions, recommending an acceptance of responsibility by individuals, communities, firms and institutions and an equitable sharing of a common effort.

The relationship between the environment and economic life underpinned the United Nations World Commission on Environment and Development (the Brundtland Commission, 1987) which resulted in the report entitled “*Our Common Future*” (often termed the Brundtland Report). The following definition of sustainable development was included as part of that report as a practical solution to assist in environmental conservation.

*“ the development that meets the needs of future generations without comprising the ability of future generations to meet their own needs”* (p.8).

The above definition was also supported in the Rio Conference in June of 1992, which resulted in Agenda 21, the soft law document which outlined how sustainable development can be achieved. Discussion therein included law reforms and avenues for business to ‘combat the deteriorating global trends and to restore or maintain a healthy and productive environment world-wide’ (p.xxi).

International conferences on climate control followed (e.g Kyoto Protocol)<sup>1</sup>. A number of viewpoints on the term ‘sustainability’ were forthcoming (e.g. Pearce *et al.*, 1989; Selley, 1991; Hill and Henning, 1992; Welford 1995). Selley (1991) linked sustainable development with social responsibility, ethics and the environment, while Welford (1995) considered the term can be interpreted without parallel with intergenerational equity. Specifically,

*“Because language is the basis of communication, it plays a crucial part in the translation of principle into practice. Commonly, one person’s technical term is another person’s jargon. Again the whole concept of sustainable development has come to mean a number of different things to different people. Terms such as sustainability, sustainable growth, sustained growth, sustainable development and sustaining organizations have become confused. Commonly they are associated with environmentalism and the key concepts of equity and futurity are sidelined (Welford, 1995, p.31).*

Without consideration for the concepts of equity and futurity, the distribution of economic wealth to the present generation can undermine the quality of human life (Welford, 1995). Perceived as indicators of the vulnerability of the ecological chain resulting from its inter-relationship with the economic system (Hawken, 1994), ecological upsets are still, decades later, affecting human life. For the purposes of this paper the term ‘sustainability’ adopts a longer term perspective to environmental performance, particularly, the relationship between the firm’s goals and the environmental outcomes or ‘ecological footprints’.

Corporate responsibility in business enterprises ultimately resides with management who are held responsible for the treatment and usage of assets under their control, and the activities conducted by their organization. Both legitimacy theory and stakeholder theory encourage an increased transparency and reporting

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<sup>1</sup> The current conference is Montreal 2005

of management's handling of environmental and social issues, together with their economic goals (Patten, 1991; Roberts, 1992; Hooghiemstra, 2000). Given the relationship between economic activity and the environment, investor concerns for social and environmental, indeed corporate citizenship alternatives has prompted a channeling of funds into investment opportunities that reflect corporate responsibility and environmental issues.

The strategic nature of the discourse included in the reports provided to stakeholders can send them a number of signals. As an indication these signals can be premised and related to the firm's:

- Compliance with regulation
- Performance indicators for comparison purposes
- Monitoring indicators
- Social and environmental consequences of corporate activities.
- Encouragement of preventative and efficient operations e.g. pollution and waste reduction
- Improve public image
- Reduction in financial risk and potential liabilities.

The variety of content and type of information disclosed by firms in their voluntary environmental and social reports prompted the need for a framework or code to disseminate the activities and performance of 'good' firms. There are now a number of codes or frameworks internationally, that are available to assist

firms in their voluntary reporting efforts. For example, the *AA1000* (1999) developed by the Institute of Social and Ethical Accountability in the United Kingdom, *Public Environmental Reporting* is a comprehensive framework provided by Environment Australia, and the *Global Reporting Initiative* guidelines (GRI).

The reporting feature that focuses on the intergenerational or ecological aspects of firm's activities - sustainable reporting - is gaining importance. It provides stakeholders with a way to evaluate corporate performance beyond the financial area through a better understanding of environmental, social and wider economic impacts (Department of the Environment and Heritage Australia, 2005).

The corporate annual report is widely acknowledged as a communication instrument to convey information on the activities of the firm, to 'various publics' (Stanton and Stanton, 2002). With voluntary reporting the structure of the content, the type, and the quantity and quality of information contained therein is at the discretion of the firm's decision-makers. They can use a number of communication and marketing tools, to provide a picture of the firm (Stanton and Stanton 2002) which can include the projection of a particular image (Neu *et al.*, 1998), although the content may not reflect actual performance (Deegan and Rankin, 1996; Patten, 2002).

*“ Whether an annual report is written from the perspective of seeking to reduce the effects of events perceived to be unfavourable to a corporation's image, or as a proactive document seeking outcomes that advance the corporation's or management's objectives, reflects a division between the pursuit of legitimacy and corporate social responsibility on one hand, and political economy, image management and marketing interpretations on the other. Accordingly, prepares presumably select and organise their material in terms of the kind of audience they seek to address... If an annual report is part of a corporate communication strategy that pursues strategic objectives, such as strengthening the corporate*

*image or brand, or seeks to strengthen other marketing objectives with particular stakeholders, then the story told may conflict with, or undermine the story or governance and accountability”* (Stanton and Stanton, 2002, 495-6).

When examining the information contained in annual reports, researchers view and examine the sections of the annual report suitable for their research efforts. Hence, the changes in the form, content and structure of annual reports are not explained. In addition, the diversity of research results and methods used by researchers in their examinations of annual reports literature provided a different perspective that Stanton and Stanton (2002) found hard to reconcile.

This purpose of this paper is to consider the ‘story’ in annual reports, particularly in relation to the reporting of environmental performance. It adds another perspective to the wealth of academic research efforts which have centred predominantly on the form, content, frequency of occurrence, and measurement of information communicated, particularly in Annual Reports. With the current development and evolution of the GRI guidelines towards more specific measurement of environmental and social performance in reports, the purpose of this study is to:

1. Determine the trend of reporting of ‘sustainability’ issues over time.
2. Is there a story that can be attached?
3. Does the information assist in ascertaining environmental and social performance?
4. Is the inclusion of ‘sustainability’ or ‘key performance indicators’ in the content of the annual report, consistent with other factors communicated in the Annual Report?

The paper commences with a literature background, outlines the method used to glean the information from the annual reports, and then provides results and discussion. The results indicate that there is a link between factors contained in the annual report and the inclusion of information relating to (a) sustainability and (b) key performance indicators.

## **2. LITERATURE BACKGROUND.**

Regarded as a mechanism for accountability (Lamond, 1995), the use of the annual report as a communication tool for such disclosure was included in a number of studies, (e.g. Wiseman, 1982; Ingram and Frazier, 1983; Rockness, 1985, Belkaoui and Karpik, 1989; Harte and Owen, 1991; Patten, 1991; Gamble *et al.*, 1996; Adams *et al.*, 1998; Freedman and Wasley, 1990; Gamble *et al.*, 1995; Deegan and Rankin, 1997; Adams and Harte, 1998; Neu *et al.*, 1998; Raar, 2002; Warsame *et al.*, 2002).

Research studies on the disclosure of environmental and social information in Australian annual reports include - environmentally sensitive industries (Deegan and Gordon, 1996; Kent, *et al.*, 1997); the materiality of information, (Deegan and Rankin, 1997); a range of 9 industry groups (Brown and Deegan (1998); mining industry (Tilt and Symes, 1999); a trend analysis for 41 companies over a 15 year period (Gibson and O'Donovan, 2000); the external pressure group influence on social disclosure (Tilt, 1994); the quality and quantity of information annual and stand-alone environmental reports (Raar, 2002). The focus of research efforts was also directed to the content and type of information disclosed, (e.g. Ingram, 1978; Deegan and Rankin, 1996; Stanwick and Stanwick,

1998), and the quantity of disclosure, or how much information was included (Roberts, 1992; Buhr and Freedman, 2001; Hasseldine *et al.*, 2005).

The quality signalling between performance (measured by reputation outcome) and disclosure was tested by Toms (2002) and also by Hasseldine *et al.*, (2005). The findings suggest that the quality of disclosure created environmental reputation, rather than the quantity of information provided.

In order to achieve legitimacy, organizations must demonstrate compliance with the accepted standards of society. Threats to a firm's legitimacy can encourage it to increase disclosure (Patten, 1992; Deegan and Rankin, 1996). Reputation or public image has been identified as a motivating factor for corporate decisions on the quantity and type of social and environmental information provided in their reports. If managers consider corporate social reporting will enhance the corporation's image, and/or the corporation is well placed to judge what should be reported (Gray *et al.*, 1987; Heard and Bolce, 1982; Medaware, 1976; Neu *et al.*, 1998). Then they may choose information to promote their public image - to publicise their 'good environmental deeds' and commitment to responsible environmental management. However, this approach is inconsistent with their stewardship role, that is, their economic performance should not be at the expense of the environment and social performance (Perks and Gray, 1979; Gray and Perks, 1982).

With a reactive approach to social disclosures (Guthrie and Parker, 1990) failure by firms to legitimise their environmental and social activities may result in governmental regulation to overcome community unease (Walden and Schwartz,

1997). Patten (2005) considers that the quality of environmental disclosures will not improve without enforcement, while Mobus (2005) makes the point that mandatory accounting disclosures may damage legitimacy for firms who use voluntary social and environmental reporting as a manipulative device.

A firm's response to social and environmental issues is indicated by its measurement of environmental performance (Stanwick and Stanwick, 1998), whatever the voluntary content provided in its reports. Under subsections 62(2) and 70(2) of the Public Service Act 1999, the Australian Government now requires specific governmental agencies to include information on ecologically sustainable development and environmental performance in their annual reports (2005).

A number of studies have been undertaken since the seventies on the association between disclosure and performance, and between environmental and economic performance. The relationship between social or environmental performance and economic performance has been the subject for numerous research efforts, (e.g. Bowman and Haire, 1975; Moskowitz, 1972; Alexander and Buchholz, 1978, Spicer 1978a and 1978b; Abbott and Monsen, 1979; Freedman and Jaggi, 1992; Cochrane and Wood, 1984). Positive relationships were found by Moskowitz (1972); Parket and Eilbert (1975); Cochran and Wood, (1974); and Spicer (1978a), while Bowman and Haire (1975) found a U-shaped correlation. Although, Spicer (1978b) found a negative correlation between social and environmental performance, Alexander and Buchholz (1978) found no correlation.

Researchers used a variety of scales for the measurement of environmental performance and variables for the measurement of economic performance also differed, i.e. market-based and accounting variables were employed. Within these categories, research used different categories, e.g. the rate of return (on assets, on equity, on sales); price earnings ratios; earnings per share, income and return to shareholders (Belkaoui and Karpik, 1989). Accounting variables were used by (e.g. Ingram and Frazier, 1983; Freedman and Jaggi, 1982) to measure economic performance. The use of different measures can make comparability questionable.

With a variety of often conflicting results, Orlitzky *et al.*, (2003) undertook a meta-analysis over 30 year period, and found social performance is positively correlated with financial performance. Mobus (2005) also identified the increasing importance of linking environmental and financial performance – particularly environmental accounting, while Cormier *et al.*,(2005) suggest that increasingly costs of ‘bad environmental performance’ may prompt firms’ management to use environmental disclosure to reduce the implicit costs.

Belakoui and Karpik (1989) linked social disclosure and social performance. The variables of firm size and industry grouping were corporate characteristics found to influence environmental and social disclosure (e.g. Dierkes and Preston, 1977; Bragdon and Marlin, 1972; Freedman and Jaggi, 1986; Freedman and Wasley, 1990; Jaggi and Freedman, 1992; Belkaoui and Karpik, 1989; Hackston and Milne, 1995).

Corporate disclosure and financial issues were examined by Patten (1991) who examined the relationship between voluntary disclosures firms included in their

annual reports and public pressure or profitability. Patten used size and industry classification as 'public pressure variables' and found these to be explanatory variables, although profitability was not. Cormier *et al.*, (2005) also hypothesised that public pressure will underpin the quality of a firm's environmental disclosure, and focused on the quality of information in relation to the institutional context of the organisation (Cormier *et al.*, 2005).

Using a simultaneous equations approach, Al-Tuwaijri *et al.*, (2004) examined the relationship between environmental disclosure, environmental performance and economic performance to find that 'good' environmental performance is associated with 'good' financial performance. Furthermore investors and stakeholders are concerned about the firm's policies with many European firms increase their environmental disclosure in annual reports (Cormier *et al.*, 2005). In addition, sustainability reporting practices in Australia were examined by (Frost *et al.*, 2005) while a strengthening of the TBL 'Ecological Footprints' approach is apparent in the 2003 *Guide to Reporting against Environmental Indicators* prepared by Environment Australia. GRI is continually developing a list of core environmental indicators for reporting environmental outcomes and impacts in non financial measures.

In terms of the Annual Report as a mechanism for communication, Stanton and Stanton (2002, p.495.-6) conclude that the perspective from which the corporate report is written will reflect

*“a division between the pursuit of legitimacy and corporate social responsibility on the one hand, and political economy, image management and marketing interpretations on the other. Accordingly, preparers presumably select and organise their material in terms of the kind of audience they seek to address. ....If an annual report is part of a corporate communication strategy that*

*pursues strategic objectives, such as strengthening the corporate image or brand, or seeks to strengthen other marketing objectives with particular stakeholders, then the story told may conflict with, or undermine the story or governance and accountability.”*

### **3. Empirical tests**

#### **3.1 Data**

Using content analysis, a total of 187 firms which were each listed on the Australian Stock Exchange, and obtained from the Connect 4 database were studied for the years 1998-2002. When combined the total amounted to 935 firms. The unit of analysis for the quantity of disclosures was a sentence (Hackson and Milne, 1996; Raar, 2002).

#### *3.2 Selection of categories*

As ‘good and bad news’ can be determined by content analysis, particularly using thematic structures, and linguistic structures (Thomas, 1997) the focus of this study was specifically directed to the type of categorical information and what this signalled to the user. Each annual report was read and the environmental and social content categorised. The use of the sentences and their aggregation was viewed as relevant (Hackstone and Milne, 1996). In terms of defining boundaries in this content analysis the specific aspect of the sentence content was used, and where sentences contained mixed discussion, those that were predominantly related to one category were extracted, and added to the accumulation of the relevant classification. Although efforts were undertaken to ensure coding reliability, when coding with content analysis research, the issue of categorical boundaries remains an issue. This also applies to this study. The content analysis was undertaken predominantly by one researcher, although where any

assistance was used, this analysis was reviewed by the researcher for purposes of consistency.

Quantification of information was considered more informative. However, the quantitative disclosure measures were not assigned weights to indicate the importance of any individual category, although weights were used in the studies of (Gamble *et al.*, 1995; Hughes *et al.*, 2001).

Based on the broad categories of the Global Reporting Initiative and those 'quality and quantity' elements adopted by Raar (2002) the variables and their associated description are outlined in Table 1. The definitions for the 'quality and quantity' of information are outlined in Table 3.

The industry groups were classified according to those outlined below in Table 2. The use of environmentally risky or sensitive industries is consistent with Deegan and Gordon (1996) and Patten, (1991:1992).

#### **4. RESULTS AND DISCUSSION.**

The total for the five years were categorised as follows. The predominance of the financial services and retail industries highlight the higher percentage of these firms listed in the sample extracted from the annual Top 500. Furthermore the results (Refer Table 4) support that the majority of environmental and social information in annual reports was identified in the 'retail' sector the consumer and financial services industries, and not forthcoming from the 'service and communication' firms.

It was expected that the industry groups that included firms operating in the chemical, mining, property, energy and agricultural areas, and also those in transporting engineering and utilities would provide more environmental and social information in the annual reports. While the 'high risk' group appears to be providing more environmental and social information in their annual reports, of interest is the similar number of firms working in the consumer focused industry (e.g. the building materials, alcohol and tobacco, whitegoods, healthcare, food and other household goods and tourism industries), that are including environmental and social issues in their annual report. Moreover, the results underscore the suggestion that for these firms the legitimacy of their operations is manifested in the intrinsic values of their consumers as well as their shareholders.

As the same firms were used over the five year period, it was recognised that their revenue may not remain stable over the timeframe. As evident in Table 5 the predominant revenue for these firms was 0 – 999, which was the grouping applicable to the first year of the study.

In order to ascertain the connection between the industry group, the reporting year, firm size, and the longer term environmental performance or sustainable issues, a binary logistic regression was performed. The dichotomous dependent variable was "Sustainable Development (Included 1= "YES": 0="NO")" was regressed against the independent variables relating to industry group, firm size and the year of reporting.

#### 4.1 *Logistic regression*

The SPSS 'guess' in the Block O Classification Table was that 90.7% of firms would not include sustainability issues in their annual reports. When compared to the Block 1 Classification Table the set of predictor variables used in the logistic regression model did not change this percentage, indicating that the model correctly identifies that 90.7% of firms did not include sustainability issues in their annual report information.

A 'goodness of fit' for the model is found in the (a) the Omnibus Test of Model Coefficients which resulted in a Chi-square of 34.793 with 9 degrees of freedom and a level of significance at .000 (<.005), and (b) a more reliable Hosmer and Lemeshow test, which in this instance provided a Chi-square of 6.180 with 8 degrees of freedom and a level of significance of .627 (>.05) thus adding further support to the model predictors.

In a binary logistic regression the variance is explained by the Cox & Snell R Square and the Nagelkerke R Square, which indicates that between .037 and .079 per cent of variability is explained by the model. The Wald test level (refer Table 6) of significance indicates the variables which contribute to the models predicability with less than <.05 relate to (a) firm size (.039); (b) the firms listed years 1998, 1999 and 2001; (c) those firms in the 'risky' industry group (.007); the 'services and communications' group (.013), and in the 'consumer' group (.003). The odds ratio (refer Exp (B) however suggests a differing aspect. The odds of a firm reporting on sustainability issues decreases by a factor .014 in 1998, .294 in 1999, and .397 in 2001. Alternatively, the odds are that

sustainability issues will increase in the consumer group firms by a factor of 2.955 and in the services industries by a factor of 2.595 (Pallant, 2005).

Table 6 indicates the a dissection of the categories outlined in Table 1 for each of the years. A total of 481 firms included environmental issues in their annual report, 454 did not. The 481 firms were then grouped into the following classifications: specifically, information relating to key indicators, the firm's profile, policies, external relations, management performance, and occupational health and safety issues, product performance and sustainability issues. Table 6 displays the total in each of the categories. Voluntary information reported appears to be focused on the Key Indicators, Profile, Policies, Management performance and Occupational Health and Safety issues.

If management concern is reporting to enhance the image of the firm (Neu *et al.*, 1998), then it is suggested that the categories of profile, and policies would be their preferable reporting options. In the area of 'environmental performance' the reporting focus was primarily directed to management's performance and key indicators, with a lower amount of information relating the performance of the product. Sustainable outcomes the provided the lowest level of information.

However, as a large number of the firms were involved in financial services or consumer related industries, their product and sustainability outcomes may not be viewed as an area for stakeholder concerns. Management in these industries may not consider it as imperative to draw attention to these elements, as would the management of firms operating in the 'high risk' or 'industrial' groups.

Hence another binary regression analysis was conducted to determine the relationship between the dichotomous categories of content reported, using 'sustainability' as the dependent variable. Again the model (estimated and actual) was that 90.7% that the dependent variable 'sustainability issues' would not be reported. The Chi-Square was 172.9 with 7 degrees of freedom and 0.00 level of significance ( $<.05$ ),. The Cox & Snell R Square and the Nagelkerke R Square indicated that the model explained between 16.9 and 3.66 per cent of the variability.

The Wald test (see Table 8) identified three main variables that were connected with the inclusion of sustainability issues in the annual report. With a value of  $<.05$  for the following variables; (a) policies (.001), and the performance of both the product (.010) and management performance (.002) were significant. Therefore, in this model, the factors contributing significantly to the inclusion of 'sustainable' issues in the annual report were policies, product performance and management performance (Pallant, 2005).

However, the odds ratio, (refer Exp (B) in Table 8), for these variables suggest the more information the firm includes about its policies, product performance and management performance, the less it will include sustainability issues in the annual report. Specifically the odds of a firm reporting sustainability issues decreases by a factor of .156 for policies, .489 for product performance and .314 for management performance. The values suggest that the report odds ratio for these variables is within the 95% confidence level: Product performance = Lower

.283 – Upper .846; Management performance =Lower .150 - Upper .687’;  
Policies = Lower .140 - Upper .456 (Pallant, 2005)<sup>2</sup>.

In order to further support the above result, a forward Wald binary regression was also conducted. While the above model remained sound, the Hosmer and Lemeshow test reduced to .024 (<.05), and the results also identified the variable ‘profile’. The results are provided in Table 9 and demonstrate that firm’s profile (.027), as well as management performance (.002), policies (.000), and product performance (.007) influence the inclusion of sustainable issues in the annual report. The correlation matrix supported the inverse relationship between management performance, product performance and profile with sustainable issues - the more of these factors included in the annual report information the less the firm will also report sustainable issues. However, there appeared a positive relationship between the firm’s policies and the inclusion of sustainable issues.

Given the focus on the reporting of environmental and social performance, the results above did not associate sustainability issues with the variable, ‘key performance indicators’. It was expected that this firm’s may relate the short term measures of key performance with sustainability – the longer term aspects. Therefore, to further explore further, the variable ‘key performance indicators’ was regressed against the other classifications outlined in Table 1, including that of ‘sustainability’.

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<sup>2</sup> The results for these variables were further supported in a nominal regression analysis<sup>2</sup>.

A forward Wald binary regression resulted in the Block O results indicated 63.3% would be explained by the model, however it explained 86.7%. The Omnibus test of the Model Co-efficients a chi-square of 636.798 and 7 degrees of freedom the level of significance was 0.00 ( $<.05$ ). The Cox & Snell R Square and the Nagelkerke R Square provided a 49% - 67% range of variance. However, the Hosmer and Lemeshow Test was ( $<.05$ ) which did not support the model's 'goodness of fit'.

However, the variables, profile (.000), policies (.001) management performance (.000) and Occupational Health and Safety (.000) were significant ( $<.05$ ), (see Table 10). All Exp (B) results for these variables suggest an inverse relationship. That is, the more information firm's report on these variables, the more less likely they are to include key performance indicators. Specifically, the firms reporting the variable profile (.147); policies (.406); management performance (.274); and occupational health and safety (.158).

Combining the results of all these analyses, it appears that the more information included in the annual reporting on the firm's profile, (which are basically public image issues, and information on compliance and regulatory issues); its policies; and management performance, the less the firm's are likely to include information on their key performance indicators and sustainable issues. Firm size and industry group influence the inclusion in the annual report of sustainability issues. More specifically, firms in the 'risky', 'consumer' and services and communications industries will be less likely to report sustainability issues.

## **5. QUANTITY OF INFORMATION DISCLOSED OVER THE PERIOD.**

Given the propensity of community concern for social issues, corporate responsibility and the environment, it was considered that, for those firms using the Annual Report as their communication tool to stakeholders, the quantity of information disclosed in each of these variables classifications would increase over the five year period of the study.<sup>3</sup>

Assumptions in a trend analysis are similar to ANOVA insomuch as the independent variable forms an increasing continuum, and the adjacent levels are proportional (Coakes and Steed, 2003). For the variables (see Table 11, column 1) with a level of significance for the Levene Statistic of  $>.05$ , the assumptions have not been violated. However, for the variables displayed at the end of the column, i.e. 'product performance' and 'sustainability' the results indicate a violation of the assumptions.

The results in Table 11 also indicate a significant  $F$  value for the variables 'Key Indicators,' and 'Management Performance'. This suggests (a) that the quantity of information increased significantly over the five year period, and (b) that for these two variables this increase was consistent, as the linear term was also significant ( $p.<.05$ ). While the information relating to policies increased over time, it was apparently not significant although the increase did appear to be consistent.

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<sup>3</sup> However, it is recognised that many firms have transferred their information on these issues to their websites or a standalone hardcopy with a triple bottom line approach.

## **6. FORM USED TO DISCLOSURE INFORMATION CONTENT**

Seventy-three percent of the firms preferred to report their information in descriptive format, with 16 percent combining their discussion with non-monetary measurement (see Table 12). A Friedman nonparametric test established a significant difference in the measurement of individual variables, specifically 7 degrees of freedom, and a Sig. level of .000 (which is <.0005) (Pallant, 2005). Of interest, for those firms reporting sustainability issues, over the five year period, none used a monetary measurement. In general the results suggest a lack of comparability for users of information, even for the same firms over time.

## **7. LIMITATIONS OF THE STUDY.**

The results of this study can be evaluated with caution as the demarcation between the categories, is not distinct. As mentioned previously, it also recognised that many firms report social and environmental information stand alone reports, or on their websites. Future research efforts may be directed to standalone reports and/or websites, in order to determine if these support the findings in this study. Future research topics can be specifically linked to the relationship between categories as an aid for future disclosure paths intended for either voluntary or mandatory reporting frameworks. A weighting can be applied to aid the perceived importance of these areas.

## **8. SUMMARY OF RESULTS.**

The results indicate a predictor equation for the inclusion of the dependent variable ‘sustainability issues’ in Annual Reports:

The provision of information on 'sustainability issues'  $it = (f)$  (Policies, Management Performance, product performance, firm size, industry group)<sub>it</sub>

The predictor equation for the dependent variable,

The provision of information on 'Key indicators'  $it = (f)$  (Policies, Profile, Management performance, and Occupational health and safety issues)<sub>it</sub>.

However, the predominant issue arising from the results is the diversity in reporting content and measurement. In terms of communication signals to ethical investors, or indeed other 'concerned publics' the results for this five year time period suggest a considerable adjustment and great deal of work is still required to aid understanding and comparability. There appears evidence that the reactive approach to reporting is undergoing change.

Given the literature concentrates on the inclusion of information relating to environmental and social performance, and the need for 'ecological footprints', these five-year results also indicate comparable and understandable information on key performance indicators and longer term sustainability issues is an area for future research. As these voluntary reporting efforts do not appear to have made inroads into the linking social goals with longer term performance, this aspect may warrant further research in light of any potential mandatory reporting requirement based on the seventies literature of Bowman and Haire, (1975). Furthermore, the findings of this study suggest that:

1. the annual report is not the medium to provide reliable information on issues related to sustainability,

2. minimal attempts have been made to link financial measurement with environmental or social performance,
3. the reporting of longer term ecological outcomes, is in an embryonic stage.
4. the 'story' in being communicated is related to firms' attempts to provide insights into the social and environmental compliance efforts of management, and their efforts to use resources more effectively and efficiently. Intergenerational equity and ecological outcomes do not appear to be the major focus. Whether this is due to the lack of internal information systems, the inability to measure, or simply the time boundaries are outside the realm of management horizons, is not apparent.

However, the importance of the industry type, and the requirement of industry guidelines and strategic stance (e.g. Responsible Care Program in the chemical industry) and the best practice industry and environmental management standards may focus on the inclusion of environmental and social issues in the firm's policy, plans and procedures. However, while the associated reporting requirements may be called for in the industry requirements, firm's may only report internally, and not to external stakeholders.

The call is for more effective and specific reporting guidelines with opportunities to measure environmental issues outside the short term time horizons. This raises issues and concerns on the ability of the internal information system to assist, and indeed provide any connection with the financial information.

**Table 1.**

<b>Categories And Code</b>	<b>Description and Decision Rules</b>
<i>IndustryGroup (industry)</i>	These are detailed Table 2.
<i>Revenue (transize)</i>	\$0-999M, 1,000-1999, 2000-2999 and 3000 and over.
<i>Environmental issues in annual report (Eninar)</i>	Any discussion included in the Annual Report warranted a “Yes” response.
<i>Key indicators (keyind)</i>	Inputs, impacts, emissions associated with the firms activities and operations, including energy, waste materials, water, solid waste, hazardous waste, fuel, air, or efficiency benchmarks relating to individual divisions, segments or products.
<i>Profile (Profile)</i>	Primarily ‘public image’ related issues. Environmental issues included that related to: - the firm structure, industry group and products/ services provided.
<i>Policies (policies)</i>	Mission Statements, Corporate values, specific processes and management systems external certification or recognition, auditing, training.
<i>External Relations (extrel)</i>	Stakeholder requirements, stakeholder communication, consultation and information issues, relationships with community.
<i>Management performance (manperf)</i>	Related to compliance issues Includes penalties and awards, compliance with corporations legislation, international declarations, treaties, national, local Remediation costs, environmental liabilities, oil spills, accidents, emissions. Awards, recognition etc.
<i>Occupational health And safety(occhans)</i>	Specific issues including goals, objectives, health and safety issues, and performance, including plans, objectives, goals and performance.
<i>Product peformance (prodper)</i>	Specifically isolated to product stewardship initiatives, recycling, and other issues relating to the performance of the firm’s products/services.
<i>Sustainability (sustain)</i>	The longer-term perspective in relation to social goals and performance; issues relating to the ‘sustainability footprint’.

*(Adapted from Raar 2002)*

**Table 2.**

**Industry Group Coding**

<b>Industry Group</b>	<b>Category number</b>
<b>Risky/sensitive industries in terms of environmental impact:</b> Diversified resources, mining, energy, chemicals, property/construction, metals, agriculture/agribusiness.	1
<b>Consumer focused:</b> Food and Householder including: whitegoods, alcohol and tobacco, building materials, retail, tourism, leisure and sport, healthcare.	2
<b>Industrials:</b> Transport and logistics Engineering, Infrastructure and utilities, miscellaneous.	3
<b>Services and communication</b>	4
<b>Financial services</b>	5

*Adapted from Raar (2002).*

**Table 3.**

**Quality and quantity definitions**

<b>Disclosures “How much” and definitions</b>	<b>Disclosure “How measured”</b>	<b>“How measured” Definitions</b>
<b>1 = Sentence</b>	<b>1 = Monetary</b>	<b>Disclosure in terms of currency.</b>
<b>2 = Paragraph</b>	<b>2 = Non Monetary</b>	<b>Quantified in numeric terms of weight, volume, size, etc, but not currency.</b>
<b>3 = ½ A4 Page</b>	<b>3 = Qualitative only</b>	<b>Descriptive prose only</b>
<b>4 = 1 A4 Page</b>	<b>4 = Qualitative and Monetary</b>	<b>Descriptive prose and currency</b>
<b>5 = &gt; 1 A4 Page.</b>	<b>5 = Qualitative and Nonmonetary</b>	<b>Descriptive prose and numeric terms</b>
	<b>6 = Monetary and Nonmonetary</b>	<b>A combination of currency and numeric terms</b>
	<b>7 = Qualitative, Monetary and Nonmonetary</b>	<b>Descriptive prose, currency and numeric terms.</b>

*Adapted from Raar (2002).*

**Table 4.**

**Industry Groupings for firms including environmental issues in their Annual**

	<b>Report</b>					
	<b>High Risk</b>	<b>Consumer Focus</b>	<b>Industrials</b>	<b>Service And comm</b>	<b>Financial services</b>	<b>Total</b>
<b>Yes</b>	<b>134</b>	<b>130</b>	<b>120</b>	<b>28</b>	<b>69</b>	<b>481</b>
<b>No</b>	<b>75</b>	<b>126</b>	<b>51</b>	<b>50</b>	<b>152</b>	<b>454</b>
<b>Total</b>	<b>209</b>	<b>256</b>	<b>171</b>	<b>78</b>	<b>221</b>	<b>935</b>

**Table 5.**

**Classification of Firms: Industry size**

<b>Revenue</b>	<b>No.</b>	<b>%</b>	<b>Environmental Issues in Annual Report.</b>
<b>0-999</b>	<b>795</b>	<b>85.0</b>	<b>400</b>
<b>1000-1999</b>	<b>49</b>	<b>5.2</b>	<b>31</b>
<b>2000-2999</b>	<b>78</b>	<b>8.3</b>	<b>43</b>
<b>3000&gt;</b>	<b>13</b>	<b>1.4</b>	<b>7</b>
<b>Total</b>	<b>935</b>	<b>100%</b>	<b>481</b>

**Table 6**

**Categories in annual reports per year.**

Year Report	Key Inds	Firm Profile	Firm Policies	Extern Relations	Man Perfo	OH&S	Prod. Perfo	Sustain
1998	50	53	53	53	43	55	16	8
1999	61	79	62	66	48	56	37	22
2000	51	53	52	55	44	57	16	11
2001	93	59	82	51	91	71	50	21
2002	<u>88</u>	<u>64</u>	<u>85</u>	<u>57</u>	<u>97</u>	<u>78</u>	<u>54</u>	<u>25</u>
(no. =481)	<b>343</b>	<b>308</b>	<b>334</b>	<b>282</b>	<b>323</b>	<b>317</b>	<b>173</b>	<b>87</b>

**Table 7.**

**Logistic Regression**

	B	SE	Wald	Sig	Exp (B)
Firm size	.312	.151	4.263	.039*	1.366
Year 1998	.		12.575	.014*	.014
Year 1999	-1.224	.424	8.337	.004*	.294
Year 2000	-.187	.317	.347	.566	.829
Year 2001	-.923	.381	5.861	.015*	.397
Year 2002	-.207	.320	.419	.518	.813
Risky Ind			14.180	.007*	
Consumer	1.083	.367	8.738	.003*	2.955
Industrials	.600	.369	2.641	.104	1.823
Services &	.954	.383	6.217	.013*	2.595
Communication					
Financial Services	-.770	.779	.976	.323	.463

\* significant at <.05)

**Table 8.**

**Logistic Regression model.  
(Dependent variable – “sustainability issues”)**

<b>Category</b>	<b>B</b>	<b>SE</b>	<b>Wald</b>	<b>Sig</b>	<b>Exp (B)</b>
<b>Key indicators</b>	<b>.220</b>	<b>.360</b>	<b>.372</b>	<b>.542</b>	<b>1.246</b>
<b>Profile</b>	<b>-.708</b>	<b>.431</b>	<b>2.700</b>	<b>.100</b>	<b>.492</b>
<b>External Relations</b>	<b>-.099</b>	<b>.349</b>	<b>.081</b>	<b>.776</b>	<b>.906</b>
<b>Management</b>	<b>-1.157</b>	<b>.376</b>	<b>9.453</b>	<b>.002*</b>	<b>.314</b>
<b>Performance</b>					
<b>OHS</b>	<b>-.259</b>	<b>.387</b>	<b>.448</b>	<b>.503</b>	<b>.772</b>
<b>Product perf.</b>	<b>-.715</b>	<b>.279</b>	<b>6.559</b>	<b>.010*</b>	<b>.489</b>
<b>Policies.</b>	<b>-1.858</b>	<b>.541</b>	<b>11.807</b>	<b>.001*</b>	<b>.489</b>
<b>Constant.</b>	<b>-.420</b>	<b>.196</b>	<b>4.609</b>	<b>.032</b>	<b>.657</b>

\*Significant at (<.05)

**Table 9.**

**Forward Wald Regression:  
Dependent variable - Sustainability issues**

Category	B	SE	Wald	Sig	Exp (B)
Profile	-0.784	.354	4.921	.027*	.456
Management	-1.173	.372	9.924	.002*	.309
Performance					
Product	-0.745	.276	7.275	.007*	.475
performance					
Policies.	-1.869	.526	12.705	.000*	.154
Constant	-0.426	.181	5.548	.019	.653

\*Significant at (<.05)

Category	B	SE	Wald	Sig	Exp (B)
Profile	-1.914	.293	42.479	.000*	.147
Management	-1.295	.254	25.961	.000*	.274
Performance					
Product performance.	.534	.322	2.744	.098	1.706
External Relations	0.298	.307	.940	.332	.742
Sustainable	.551	.369	2.231	.135	1.734
Occ. Health & Safety.	-1.843	.253	53.005	.000*	.158
Policies.	-.902	.274	10.834	.001*	.406
Constant	2.362	.341	47.965	.000	10.615

**Table 10.**

**Forward Wald Regression:  
Dependent variable = Key Indicators.**

\*\*Significant at (<.05)

**Table 11.**

**Quantity of categorical information over five year period**

<b>Variable: Quantity of Information</b>	Levene Statistic P>.05	F	Significance P<.05	Linear term Significance p<.05
Key Indicators	.085**	4.13	.003*	.001*
Profile	.162**	.1231	.296	.548
Policies	.710**	.1603	.172	.030*
External relations	.138**	.222	.926	.433
Management performance	.369**	.521	.000*	.000*
Occupational Health & Safety	.142**	.151	.197	.029*
Product performance	.00			
Sustainability	.00			

\*Significant at (<.05)  
\*\*Significant at (>.01)

**Table 12**

**Form of Measurement.**

<b>Category</b>	<b>Code</b>	<b>% Responses</b>
Monetary	1	.3
Nonmonetary	2	1.0
Qualitative discussion only	3	72.8
Qualitative and monetary	4	6.7
qualitative and nonmonetary	5	16.1
Monetary and Nonmonetary	6	.8
Qualitative, monetary and nonmonetary	7	2.3
<b>Total responses for period</b>	<b>2159</b>	<b>100.0</b>

## References.

Adams, C. A. and G. Harte, 1998, The changing portrayal of the employment of women in British banks' and retail companies' corporate annual reports, *Accounting, Organizations and Society* 23(8), 781-812.

Alexander, G. J. and R. A. Buchholz, 1978, Corporate social responsibility and stock market performance, *Academy of Management Journal* 21, 79-486.

Al-Tuwaijri, S. A., Christensen, T. E. and K. E. Hughes, 2004, The relations among environmental disclosure, environmental performance, and economic performance: a simultaneous equations approach" *Accounting, Organizations and Society* 29, 447-471.

Australian Government Department of the Prime Minister and Cabinet, (2005) "Requirements for Annual Reports for Department, Executive Agency and FMA ACT Bodies. Approved by the Joint Committee of Public Accounts and Audit under subsections 63(2) and 70(2) of the *Public Service Act 1999* June. [www.dpmc.gov.au/guidelines/index.cfm](http://www.dpmc.gov.au/guidelines/index.cfm) accessed 3rd July, 2005.

Belkaou, A. and P. G. Karpik, 1989, Determinants of the corporate decision to disclose social information, *Accounting, Auditing & Accountability Journal* 2(1), 36-51.

Bowman, E. H. and M. Haire, 1975, A strategic posture toward corporate social responsibility, *California Management Review* 18, 49-58.

Bragdon, J. H. and J. Marlin, 1972, Is Pollution Profitable, *Risk Management* 19(4), 9-18.

Brown, N. and C. Deegan, 1998, The public disclosure of environmental performance information – a dual test of media agenda setting theory and legitimacy theory, *Accounting and Business Research*, 9(1), 21-41.

Carson, R., 1965, *Silent Spring* (Harmondsworth, Penguin).

Coakes S. J. and L. G. Steed, 2003, *SPSS Analysis without Anguish*, John Wiley & Sons, Australia Ltd.

Cochran, P. L. and R. A. Wood, 1984, Corporate social responsibility and financial performance, *Academy of Management Journal* 27, 42-56.

Cormier, D., Magnan, M. and B. Van Velthoven, 2005, Environmental disclosure Quality in Large German Companies: Economic Incentives, Public Pressures or Institutional Conditions, *European Accounting Review* 14(1), 3-39.

Deegan, C. and B. Gordon, 1996, A study of the environmental disclosure practices of Australian corporations, *Accounting and Business Research* 26(3), 187-99.

Deegan, C. and M. Rankin, 1996, Do Australian companies report environmental news objectively? An analysis of environmental disclosures by firms prosecuted successfully by the Environmental Protection authority, *Accounting, Auditing & Accountability Journal*, 9(2), 50-67.

Deegan, C. and M. Rankin, 1997, The materiality of environmental information to users of annual reports, *Accounting, Auditing & Accountability Journal* 10(4), 562-83.

Dierkes, M. and L. E. Preston, 1977, Corporate Social Accounting and Reporting for the Physical Environment: A Critical Review and Implementation Proposal, *Accounting, Organizations and Society* 2(1), 3-22.

Freedman, M. and B. Jaggi, 1982, Pollution disclosures, pollution performance and economic performance, *Omega* 10, 167-176.

Freedman, M. and B. Jaggi, 1986, An analysis of the impact of corporate pollution disclosures included in annual financial statements on investment decisions, *Advances in Public Interest Accounting* 1, 193-212.

Freedman, M. and B. Jaggi, 1992, An investigation of the long-run relationship between pollution performance and economic performance: the case of pulp and paper firms, *Critical Perspectives on Accounting* 3, 315-36.

Freedman, M. and C. Wasley, 1990, The association between environmental performance and environmental disclosure in annual reports and 10Ks, *Advances in Public Interest Accounting* 3, 183-193.

Frost, G., Jones, S., Loftus, J. and S. Van Der Laan, 2005, A Survey of sustainability Reporting Practices of Australian Reporting entities, *Australian Accounting Review* 15(1), 89-96.

Gamble, G. O., Hsu, K., Kite, D. and R. R. Radtke, 1995, Environmental disclosures in annual reports and 10Ks: an examination, *Accounting Horizons* 9, 34-54.

Gamble, G., Hsu, K., Jackson, C and C. Tollerson, 1996, Environmental disclosures in annual reports: an international perspective, *International Journal of Accounting* 31(3), 293-331.

Gibson, K. and G. O'Donovan, 2000, Environmental Disclosures in Australia: A Longitudinal study, presented at *RMIT seminar series*, May.

Gray, R. H. and R. W. Perks, 1982, How desirable is social accounting?" *Accountancy* April, 101-103.

Guthrie, J. and L. Parker, 1990, Corporate social disclosure practice: a comparative international analysis, *Advances in Public Interest Accounting* 3, 159-75.

Hackston D. and M. Milne, 1996, Some determinants of social and environmental disclosures in New Zealand companies, *Accounting, Auditing and Accountability Journal* 9(1), 77-108.

Harte, G. and D. Owen, 1991, Environmental disclosure in Annual Reports of British Companies: A Research Note, *Accounting, Auditing & Accountability Journal* 4(3), 51-61.

Hasseldine, J., Salama, A. I. and J. S. Toms, 2005, Quantity versus quality: the impact of environmental disclosures on the reputations of UK Plcs, *The British Accounting Review* 37, 231-248.

Hawken, P., 1994, *The Ecology of Commerce*. (HarperCollins Publishers, United States of America).

Hooghiemstra, R., 2000, Corporate communication and impression management – new perspectives why companies engage in corporate social reporting, *Journal of Business Ethics* 27, 55-68.

Hughes, S. B., Anderson, A. and S. Golden, 2001, Corporate environmental disclosures: are they useful in determining environmental performance? *Journal of Accounting and Public Policy* 3(20), 217-408.

Jaggi, B. and M. Freedman, 1992, An examination of the impact of pollution performance on economic and market performance pulp and paper firms, *Journal of Business Finance & Accounting* 19(5), 697-713.

Ingram, R. W., 1978, An investigation of the information content of (certain) social responsibility disclosures, *Journal of Accounting Research* 16(2) 270-285.

Ingram, R. W. and K.. B. Frazier, 1983, Environmental performance and corporate disclosure, *Journal of Accounting Research* 18 (4), 614-633.

Kent, P., Kwong, E. and B. Marshall, 1997, Social responsibility and environmental disclosures: evidence from Australian chemical companies, *Accountability and Performance*, 21-39.

Lamond, D., 1995, Dilemmas of measuring performance in a government trading enterprise: The State Bank of NSW, *Australian Journal of Public Administration* 54(2), 262-72, cited in Stanton, P. and J. Stanton, 2002, Corporate annual reports: research perspectives used, *Accounting, Auditing & Accountability Journal* 15(4), 478-500.

Mobus, J. L., (2005) Mandatory environmental disclosures in a legitimacy theory context, *Accounting, Auditing & Accountability Journal* 18(4), 492-517.

Neu, D., Warsame, H. and K. Pedwell, 1998, Management public impressions: environmental disclosures in annual reports, *Accounting, Organizations and Society* 23(3), 265-282.

- Orlitzky, M. Schmidt, F. L. and S. L. Rynes, 2003, Corporate social and financial performance: a meta-analysis, *Organization Studies* 24 (3), 403-441.
- Pallant J., 2005, *SPSS Survival Manual* (2<sup>nd</sup> Edition Allen & Unwin).
- Parke, I. R. and H. Eilbirt, 1975, Social responsibility: The underlying factors, *Business and Society Review* 1, 71-75.
- Patten, D. M., 1991, Exposure, legitimacy, and social disclosure, *Journal of Accounting and Public Policy* 10(Winter), 297-308.
- Patten, D. L., 1992, Intra-industry environmental disclosures in response to the Alaskan oil spill: a note on legitimacy theory, *Accounting, Organizations and Society* 17(5), 471-5.
- Patten, D. M., 2002, The relation between environmental performance and environmental disclosure: a research note, *Accounting, Organizations and Society* Nov, 763-773.
- Patten, D. M., 2005, The accuracy of financial report projections of future environmental capital expenditures: a research note, *Accounting, Organizations and Society* 30, 457-468.
- Pearce, D., Markandya, A. and E. Barbier, 1989, *Blueprint for a Green Economy*, (London, Earthscan).
- Perks, R. and R. H. Gray, 1979, Beware of social accounting, *Management Accounting (London)* 57(22), 22-24.
- Raar, J., 2002, Environmental initiatives: towards triple-bottom line reporting, *Corporate Communications: An International Journal*, 7(3), 186-183.
- Roberts, R. V., 1992, Determinants of corporate social responsibility disclosure: an application of stakeholder theory, *Accounting, Organizations and Society* 17(6), 595-612.
- Rockness, J., 1985, An assessment of the relationship between US corporate environmental performance and disclosure, *Journal of Business, Finance and Accounting* 12(Autumn), 339-54.
- Selley, D., (ed) 1991, Sustainable ethics – how Skills can Improve Ethical Decision-Making on the Environment, *CA Magazine* March, 71-74.
- Spicer, B. H., 1978a, Investors, Corporate social Performance and Information disclosure: An Empirical Study, *Accounting Review* LIII, 1(January), 94-111.
- Spicer, B. H., 1978b, Market risk, accounting data and companies' pollution control records, *Journal of Business, Finance and Accounting* 5, 67-83.

- Stanton, P. and J. Stanton, 1998, The Relationship Between Corporate Social Performance, and Organizational Size, Financial Performance, and Environmental Performance: An Empirical Examination, *Journal of Business Ethics* 17(2), 195-204.
- Stanton, P. and J. Stanton, 2002, Corporate annual reports: research perspectives used, *Accounting, Auditing & Accountability Journal* 15(4), 478-500.
- Tilt, C. A., 1994, The influence of external pressure groups on corporate social disclosure some empirical evidence, *Accounting, Auditing & Accountability Journal* 7(4), 47-72.
- Thomas, J., 1997, Discourse in the marketplace: the making and meaning of annual reports, *The Journal of Business Communication* 34(1), 47-66.
- Warsame, H., Neu, D and C. V. Simmons, 2002, Responding to 'discrediting' events: annual report disclosure responses to environmental fines," *Accounting and the Public Interest* 2, 22-40.
- Wiseman, J., 1982, "An evaluation of environmental disclosures made in corporate annual reports" *Accounting, Organizations and Society* 7, 53-63.
- United Nations World Commission on Environment and Development, 1987, *Our Common Future* (The Brundtland Report Oxford:OUP).
- Walden, W. D. and B. N. Schwartz, 1997, Environmental disclosures and public policy pressures, *Journal of Accounting and Public Policy* 16(Summer), 125-154.
- Welford, R., 1995, "*Environmental Strategy and Sustainable Development: The corporate challenge for the twenty-first century*" (Routledge London).
- Wood, D., 1991, Corporate social performance revisited, *Academy of Management Review* 16, 691-718.

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