Kent
Business
School

Working Paper Series

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Robert Jupe

Kent Business School

KBS
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Working Paper No. 91

July 2005

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Robert Jupe

Robert Jupe is a Lecturer in Accounting at Kent Business School, University of Kent

Correspondence to:

Mr Robert Jupe
Kent Business School
The University
Canterbury
Kent
CT2 7PE
UK

Email: R.E.Jupe@kent.ac.uk

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Abstract

Much of the prior research on environmental reporting has focused on analysing disclosures in corporate annual reports within a framework of legitimacy theory. Legitimacy theory is based on the notion that in order to continue to operate successfully, companies must act within the bounds of what society deems to be socially acceptable behaviour. Companies can use voluntary environmental disclosures as part of a legitimation strategy. This paper focuses on the disclosures in separate corporate environmental reports prepared by the largest 200 UK companies. A cross-sectional analysis of environmental disclosures is employed to test the predictive power of legitimacy theory. The results indicate some support for legitimacy theory as an explanatory factor for the disclosures in corporate environmental reports.

Keywords Annual reports, Environmental reports, Disclosure, Legitimacy theory

DISCLOSURES IN CORPORATE ENVIRONMENTAL REPORTS: A TEST OF LEGITIMACY THEORY

Introduction

The majority of corporate social reporting (CSR) disclosures in Britain and many other western countries are currently voluntary. These disclosures have been the focus of substantial research since the 1970s, which has explored a number of themes including the significant increase in the amount of CSR material being voluntarily disclosed. One particular research theme has been the increase in the amount of environmental information being disclosed by companies (Guthrie and Parker, 1990; Harte and Owen, 1991; Gray *et al.*, 1995a; Deegan & Gordon 1996; KPMG, 1997; Frost & Wilmshurst 1998; KPMG, 1999; Campbell, 2004).

The majority of the research into environmental disclosures has focused on the annual report on the grounds that it is produced on a regular basis, is used by many stakeholders as their sole source of information (Deegan and Rankin, 1997), and is widely distributed (Unerman, 2000). This focus on annual reports may, however, lead to an incomplete picture of corporate disclosure practices being obtained (Roberts, 1991; Unerman, 2000). This is because of the growing tendency for large companies to publish separate reports such as environmental and corporate social responsibility disclosure reports. Studies of environmental reporting have noted that the rate of publishing such separate reports has increased in many countries surveyed apart from the US (KPMG, 1999; Holland and Boon Foo, 2003). This paper's primary focus is on O'Donovan's proposal that "the most obvious area for continued research" resides with the increased production of separate corporate environmental reports (1999, p. 88). It encompasses Gray *et al.*'s suggestion that CSR research should include "identifying innovations" (1995b, p. 88).

As CSR disclosures are largely of a voluntary nature, it is logical to suggest, as O'Donovan (1999, p.64) argued, that such disclosures "would only be included if management deemed that were of some benefit to the organisation". Research has made considerable efforts to "understand the motivations for reporting", and one motivation may be "the desire to legitimise certain aspects of an organisation's activities" (Deegan, 2002, p. 302). Thus corporate environmental reports are examined within the framework of legitimacy theory, in an attempt to answer two research questions. First, whether legitimacy motives are predominant in the production of separate corporate environmental reports (O'Donovan, 1999, pp. 88-89; Milne and Patten, 2002, p. 395). Second, whether the increased production of these reports relates to "symbolism" or "substance" (O'Donovan, 2002, p. 364).

The remainder of this paper is structured as follows. A discussion of legitimacy theory and its relevance to environmental disclosures occurs next. The third section then explains and justifies the development of the study's hypotheses. The next section discusses the paper's research method, examining the content analysis employed, the classification of the survey data and sample selection. The fifth section discusses the results of the study, and identifies their limitations. The paper concludes with a discussion of the scope for further research and the importance of the findings.

Legitimacy theory and corporate disclosures

A number of theories to explain CSR disclosures have been developed by researchers. It has been argued that "the more interesting and insightful perspectives are those drawn from social and political theory – most particularly: stakeholder theory; the legitimacy theory perspectives; and the perspectives that emerge from political economy" (Gray *et al.*, 1995a, p. 52). There is considerable overlap between these theories, as "insights provided by legitimacy theory (and stakeholder theory)" build upon those emanating from political economy theory, which "explicitly recognises the power conflicts that exist within society and the various struggles that occur between groups within society" (Deegan, 2002, p. 292). Political economy theory and legitimacy theory are predicated on the idea that organisations are part of economic and social systems, and so must be studied within the framework of these systems. Thus these theories provide "an apposite way of thinking about social disclosure", as "CSR is generally predicated on a recognition that the economic (as represented by the financial) is only one element of organizational life" which needs to be supplemented by or interwoven with recognition of the social and political (Gray *et al.*, 1995a, p. 52).

Legitimacy theory embraces the idea of a social contract between organisations and society. If society feels that an organisation has breached its side of the social contract, then the survival of the organisation will be threatened. Thus legitimacy is considered to be a resource which an organisation is dependent upon for survival (Dowling and Pfeffer, 1975). An organisation has legitimacy, as Lindblom (1994, p. 2) argued, when "an entity's value system is congruent with the value system of the larger social system of which the entity is a part". If society feels that an entity has breached its side of the social contract, then the entity's legitimacy is under threat.

Events such as the Alaskan oil spill in Valdez in 1989, for example, may have a detrimental impact on society's perception of both an organisation and the industry to which it belongs (Patten, 1992). Building on Dowling and Pfeffer (1975), Lindblom (1994) identified four elements of a legitimation strategy. In order to seek or maintain legitimation, an organisation can try to:

- Educate and inform its "relevant publics" about actual changes in the organisation's performance and activities;
- Change the perceptions of the "relevant publics", but not change its actual behaviour;
- Manipulate perception by deflecting attention from the issue of concern to other related symbols through an appeal to, for example, emotive symbols; and,
- Change external expectations of its performance.

A company facing a threat to its legitimacy after causing pollution, for example, can use CSR disclosures in annual reports to try to focus attention on its increased expenditure on pollution control equipment. Alternatively, it could discuss its aim to reduce pollution in future, or it could divert attention from the issue by focusing on its support for community projects and its devotion to recycling activities.

A number of CSR studies have employed the framework of legitimacy theory in order to examine possible motivations for corporate social and environmental disclosures. An early study based, on disclosures by BHP Ltd over the period 1885-1985, found that legitimacy theory was generally not "adequate as a means of explaining BHP's social disclosures during the period studied", but argued that a relationship between legitimacy theory and disclosure was "marginally supported for environmental issues" (Guthrie and Parker, 1989, p. 351). Many later papers have linked CSR disclosures to legitimacy theory, but have found varying degrees of explanatory power in the theory. Patten (1992, p. 475), for example, argued that the increased environmental disclosures of petroleum companies after the Alaskan oil spill "can be interpreted as evidence in support of legitimacy theory". Walden and Schwartz (1997) found that increases in environmental disclosures were not simply limited to the oil industry after such incidents, and concluded that companies report disclosures in response to public policy pressure following such events. Gray *et al.* (1995a, p. 65) found that legitimacy theory had "some insights to offer concerning the trends in environmental, health and safety, energy and customer disclosure". Guthrie and Parker's BHP study was updated for the years 1983-1997 by Deegan *et al.*, who discovered support for "legitimation motives for a company's social disclosures" (2002, p. 333).

Brown and Deegan (1998) and O'Donovan (1999) both argued that some companies provide social disclosures in annual reports in response to the perceived concerns of society. Wilmshurst and Frost's study provided "limited support for the applicability of legitimacy theory as an explanation for the decision to disclose environmental information" (2000, p. 22). Research by Milne and Patten (2002), O'Donovan (2002) and Campbell (2004) was all generally supportive of a legitimacy-based explanation of environmental disclosures.

Hypotheses development

Legitimacy theory is predicated on the notion that companies disclose information in order to legitimise their behaviour. Disclosures in annual reports of companies, as O'Donovan's interview-based research suggested, may focus on "image building and symbolism" in "an attempt to alter the perceptions the annual report user may have about the company's environmental actions or activities" (1999, p. 86). This approach is likely to embody the presentation of a favourable perspective on the company's environmental performance. Deegan and Gordon, for example, found "strong support" for the contention that firms "tend to be self-laudatory in their disclosure practices (1996, p. 190), and Deegan *et al.* noted the "disposition to provide mainly positive information" (2002, p. 333). These findings lead to the development of the first hypothesis.

> *H1*. Companies will devote more space in their environmental reports to favourable disclosures than to unfavourable disclosures.

If companies have been subject to prosecution or enforcement notices, then legitimacy theory suggests that there will be "a need to counter the negative news of their prosecution with positive news about their environmental initiatives…the legitimation endeavour taking the form of increased disclosure of positive, or 'good' environmental, news" (Deegan and Rankin, 1996, p. 59). Accordingly the second hypothesis is as follows.

> *H2*. Companies which have revealed prosecutions or enforcement notices for environmental offences in their environmental reports will produce longer reports than those companies which have not revealed such prosecutions or notices in their environmental reports.

Companies employing legitimation strategies are likely to view the production of separate environmental reports as complimentary to their inclusion of CSR disclosures in annual reports. The more detailed information in the separate reports can be summarised and cross-referenced in the annual reports, and so annual report disclosures are "unlikely to decrease, and may in fact increase" (O'Donovan, 2002, p. 352). Gibson and O'Donovan's (2000) study found that the environmental information disclosed in the annual accounts of Australian companies was increasing in the 1990s, even though some companies were preparing separate environmental reports from 1994 onwards. Holland and Boon Foo's analysis of UK and US environmental disclosures argued that, when companies produce separate environmental reports, "there is also a tendency to disclose environmental information" in annual reports (2003, p. 11). These findings, about the relationship between corporate annual reports and separate environmental reports, lead to the third hypothesis, which is as follows.

> *H3*. Companies which prepare separate environmental reports are likely to devote more space to environmental disclosures in their annual reports than those which do not.

Many studies have argued that companies which impact negatively on the environment are more likely to make environmental disclosures than are companies in more environmentally friendly industries (see, for example, Hackston and Milne, 1996; Adams *et al*., 1998). Deegan and Gordon (1996, pp. 194-195) devised a measure of environmental sensitivity based on the concerns of environmental groups about particular industries, arguing that the more environmentally damaging a firm's industry "the greater the incentive for the firm to disclose some form of positive environmental information". This leads to the fourth and fifth hypotheses.

H4. Companies operating in environmentally sensitive industries are more likely to produce an environmental report than companies in other industries.

H5. Companies operating in environmentally sensitive industries are more likely to produce either an environmental or a social report than companies in other industries.

Research method

Content analysis

In this paper, content analysis was used to collect data on environmental disclosures. Abbot and Monsen defined content analysis as a data-gathering technique consisting "of codifying qualitative information in anecdotal and literary form into categories in order to derive quantitative scales of varying levels of complexity" (1979, p. 504). A variety of methods have been used in CSR content analysis studies to quantify disclosures. These have included the number of words, sentences, pages, or proportion of pages used to denote different disclosure categories (Unerman, 2000, p. 668). A number of previous content analysis studies have employed a page count (Cowen *et al.*, 1987; Deegan and Rankin, 1996) or a page proportion count (Gray *et al.*, 1995b; Campbell, 2000; Unerman, 2000). In this study, a page proportion count was used both for the separate environmental reports and the annual reports, so that disclosures were captured on a consistent basis.

A page proportion count was selected for this study for several reasons. The use of a page proportion count, rather than a sentence or word count, was more manageable for quantifying the data in the separate environmental reports. This was particularly the case as many reports contained "non-narrative CSR disclosures (such as photographs or charts)", which would have been ignored by focusing on words or sentences (Unerman, 2000, p. 675). As previous studies have argued, a unit of measurement which cannot take account of photographs or charts omits potentially powerful and highly effective methods of communication (Beattie and Jones, 1992; 1994; Preston *et al.*, 1996, Unerman, 2000). Photographs are "sometimes a more powerful tool in CSR than narrative disclosures" for stakeholders without the time or inclination to read every word in a report (Unerman, 2000, p. 675). If disclosures were measured in terms of words or sentences then a photograph's disclosure would be limited to its caption, whereas "measuring volume as a proportion of a page enables both the photograph and its caption to be included in the analysis" (Unerman, 2000, p. 676). Furthermore a key assumption behind the use of this type of quantitative content analysis is that the volume of disclosure signifies the importance of a disclosure, and so attempts should be made to capture all disclosures (Krippendorf, 1980; Gray *et al.*, 1995b; Deegan and Rankin, 1996; Neu *et al.*, 1998; Unerman, 2000).

The page proportion count followed the procedures employed and justified by Gray *et al.* (1995b) and by Unerman (2000), and so a grid with 25 rows of equal height and four columns of equal width was laid across each relevant environmental disclosure. The page proportion was then calculated as the number of cells on the grid taken up by a disclosure.

Recording of data

The data on environmental disclosures for this paper were gathered both from separate corporate environmental reports and annual reports. The meaning of environmental disclosures in this context is those disclosures that relate to the impact company activities have on the physical or natural environment in which they operate (Wilmshurst and Frost, 2000, p. 16). Some previous studies (see, for example, Brown and Deegan, 1998) have taken an aggregated approach to classifying environmental disclosures. Others, however, have developed dassification schemes for analysing environmental disclosures. The scheme used for analysing environmental disclosures in this study was developed after a literature review, focusing on the schemes devised by Wiseman (1982), Patten (1992) and Deegan and Gordon (1996). Wiseman's scheme (1982, p. 62) identified 18 different items of information for classifying environmental disclosures, which Patten's scheme (1992, p. 473) condensed into seven key items. Deegan and Gordon produced the broadest classification scheme, containing 29 items (1996, p. 198). A broad classification of disclosure items was adopted, based on the approaches of Wiseman and Deegan and Gordon, in order to capture the range of items appearing in the reports. Certain items were excluded from the earlier schemes if they did not appear in any of the separate environmental reports. A few new items, for example case studies, appeared in the separate environmental reports and so were added to the list of items from the earlier classification schemes. Rolls-Royce's 2003 environment report, for example, included case studies on items such as cryogenic cleaning and landfill gas as illustrations of commitments to reductions in liquid waste and greenhouse gas emissions respectively.

The classification scheme finally adopted for the analysis of disclosures in separate environmental reports contains 25 items of information, which are shown in the next section in Table I. A piece of information was deemed to be a disclosure if it related to one or more of these items. The 25 items were divided into two main categories:

(1) Financial information, which related to environmental expenditure; and

(2) Other environmentally related information, which included items such as recycling, waste reduction, awards won, environmental targets and sustainability.

Each environmental report was analysed for the chosen items in the classification scheme, with an example of a disclosure item scoring one and non-disclosure represented by a zero. Thus the maximum score any item could attract was 29, if all of the separate environmental reports included the item. All pages in the environmental reports were subject to analysis, including photographs, as they were deemed to provide relevant information. The case studies provided by companies were, for example, often linked with photographs.

In addition to the content analysis, a page proportion count was also employed with each separate environmental report, in order to capture the amount of space devoted to favourable and unfavourable disclosures. The definitions applicable to the categories of “favourable” and “unfavourable” are similar to the “positive” and “negative” definitions employed by Deegan and Gordon (1996) and Brown and Deegan (1998). Favourable refers to information about corporate environmental activities which have a positive or beneficial impact on society, and includes items such as pollution control, and the recycling of materials. Unfavourable refers to information about corporate environmental activities which have a negative or deleterious impact on society, and includes such items as excessive pollution emissions and prosecutions (Deegan and Gordon, 1996, p.198; Brown and Deegan, 1998, p. 29).

In the 200 annual reports a page proportion count of environmental disclosures was undertaken, in order to gather the data for testing the third hypothesis. Environmental disclosures were again interpreted broadly in order to capture the wide spectrum of disclosures across the annual reports. Thus they included the 25 items in the classification scheme used to analyse the separate environmental reports, but also cross-references to environmental reports and to environmental information on Web sites.

Sample selection

In order to obtain annual reports and separate environmental reports to test for legitimacy theory, the top 200 companies were selected from the Financial Times (FT) UK 500 for 2003 which ranked companies by market value. The largest 200 companies, rather than a random sample, were selected because of the size effects which have been found in previous social and environmental reporting research (Trotman and Bradley, 1981; Guthrie and Parker, 1990; Patten, 1992; Hackston and Milne, 1996; Adams *et al*., 1998). Previous research has demonstrated that there is a "positive association" between the amount of social responsibility information disclosed and the size of the company (Trotman and Bradley, 1981, p. 360). Arguably this occurs as "large firms are subject to more social and political pressure than small firms" and so will increase voluntary disclosures more than small firms (Patten, 1992, p. 474). Thus a sample of large companies is more likely to demonstrate "innovative" examples of CSR, such as separate environmental reports, than an equivalent sample of medium or small companies (Gray *et al.*, 1995b, p. 88).

The annual reports and separate CSR reports for 2003/04 were obtained from the top 200 companies in order to analyse their environmental disclosures on a cross-sectional basis. This resulted in a sample of 200 annual reports and 127 separate CSR reports. In accordance with the size-disclosure relationship, nearly two thirds of the separate CSR reports were obtained from the largest 100 companies. The separate CSR reports had a variety of titles, including "corporate social responsibility report", "health, safety and environmental report" and "sustainability report". All of these 127 separate CSR reports included some environmental disclosures. This paper's primary focus, however, is on the 29 reports, selected after an initial analysis, which focused on the environment. The key research questions of this study are to test for legitimacy theory as an explanatory factor for the disclosures in separate environmental reports, which are a relatively recent innovation in CSR, and to test whether the increased production of such reports relates to symbolism or substance. By producing a separate environmental report an organisation may signal that it considers such a report to be as important as the annual financial report (Holland, 1993). The 127 separate CSR reports were accordingly divided into 29 environmental reports and 98 social reports. The companies issuing separate social or environmental reports or no reports are classified according to industrial sectors, with the results summarised in the Appendix.

Drawing on previous industry classification schemes (Deegan and Gordon, 1996; Wilmshurst and Frost, 2000), this study divided the sample companies into environmentally sensitive industries and other sectors. The sectors selected as environmentally sensitive were the mining, chemicals, transport, oil/gas, forestry, power and construction industries. This division was made as companies in these sensitive industries may be regarded as more likely to prepare a separate environmental or social report than companies in other industries.

5. Results

Content analysis of disclosures in the environmental reports

Table I summarises the disclosures according to category and item in the sample of 29 separate environmental reports obtained from the largest 200 UK companies.

Take in Table I

Analysis of the reports revealed that the large majority of disclosures were of non-financial information, with only seven companies mentioning items of environmental expenditure. Three of the seven were utility (water) companies, which were concerned to show evidence of expenditure intended both to benefit the environment and to improve services for customers.

The other environmental related information varied widely in both content and presentation in the environmental reports. All reports mentioned that environmental targets were set by the company. The details of these targets were not always provided, however, and only 24 companies appeared to analyse environmental performance against targets. Performance target details and evaluations varied greatly, but there were a number of common themes in the reports. All reports mentioned the existence of a corporate environmental policy, for example, and 27 reports included case studies of good environmental practice, waste reduction efforts, and the promotion of energy efficiency. There were 25 reports which claimed that the company engaged with stakeholders, and 20 explained the environmental merits of their products or services. Companies were keen to stress external support for their environmental performance, with 22 companies emphasising awards won and/or inclusion in indices such as FTSE4Good and Business in the Environment. A sustainability policy was claimed by 22 companies, although the explanation and practice of "sustainability" varied considerably between companies. Overall, the large majority of disclosures were positive – that is "information which presents the company as operating in harmony with the environment" (Deegan and Rankin, 1996, p. 560). The negative disclosures, which presented the company "as operating to the detriment of the natural environment" (Deegan and Rankin, 1996, p. 560), were very limited in scope and related to prosecutions or enforcement notices for environmental incidents, or to failures to achieve performance targets.

As Milne and Patten argued (2002, p. 395), by "working backwards from a careful content analysis of corporate environmental reports" it may be possible to determine the motives of firms for their disclosure policy. The content analysis of the separate environmental reports was consistent with previous findings from analyses of annual reports (for example, Deegan and Rankin, 1996), which have revealed that companies focus on environmental information which is favourable to their corporate image. It was also consistent with previous work on environmental disclosures which found that the tone and focus of disclosures accorded with Lindblom's legitimation strategies, as increasingly companies "are being required to demonstrate a satisfactory performance within the environmental domain" and CSR is one of the mechanisms for satisfying that requirement (Gray *et al*., 1995a, p. 65). The majority of the separate environmental reports, for example, included references to sustainability, as companies now appear increasingly concerned to demonstrate a satisfactory performance in this area in order to legitimate their activities. This is in marked contrast to earlier studies which found very little reference to sustainability. Gray *et al.'s* longitudinal study, for example, found no references to it by the largest 100 UK companies in 1988 and only five references by 1991 (1995a, note 17, p. 71).

Hypothesis results

The first three hypotheses require testing for differences in sample means and so, as in previous studies (see, for example, Patten, 1992; Deegan and Rankin, 1996), parametric t-tests were employed.

The first hypothesis posits that companies are likely to devote more space in their environmental reports to favourable disclosures than to unfavourable ones. Table II provides the results of testing for this hypothesis using paired samples.

Take in Table II

The table reveals that there was a substantial difference between the favourable and unfavourable disclosures, with the mean of the differences being 23.3 pages. The difference is significant at the 0.0005 level, and the first hypothesis is supported.

Hypothesis 2 predicts that companies which have revealed prosecutions or enforcement notices for environmental offences will produce longer environmental reports than those companies which have not revealed such offences. The results of testing for this hypothesis are shown in Table III.

Take in Table III

Examination of the table shows that the mean page length of the environmental reports for those companies revealing prosecutions or enforcement notices (26.2) was greater than the mean page length for those companies not revealing such items (23.2). This difference is not significant at the 0.1 level, however, and so the second hypothesis is rejected. This lack of a significant difference in page lengths may be due to the fact that the preparation of the environmental report as a whole is part of a legitimation strategy and, as the result of the previous hypothesis test showed, there is already very significant emphasis on favourable disclosures in all environmental reports.

The third hypothesis predicts that companies preparing environmental reports will devote more space to environmental disclosures in their annual reports than companies which do not prepare such separate reports. Table IV reveals the results of testing for this hypothesis.

Take in Table IV

The results shown in the table indicate that the mean length of environmental disclosures in annual reports prepared by companies issuing environmental reports is more than double the mean length of disclosures by companies not issuing such reports. This difference is significant at the 0.0005 level, and the third hypothesis is supported. Companies appear to prepare separate environmental reports, which are complimentary to the inclusion of environmental disclosures in annual reports, as part of their legitimation strategies.

Hypothesis four predicts that companies in environmentally sensitive industries are more likely to prepare separate environmental reports than companies in other industries, while the fifth hypothesis posits that companies in environmentally sensitive industries are more likely to prepare separate social or environmental reports than companies in other industries. The results of testing for these hypotheses are shown in Tables V and VI.

Take in Table V and Table VI

Contingency tables, which permit tests of the degree of dependence, were prepared by summarising the sample data on separate environmental and social reports shown in the Appendix. As the data under study is nominal data, non-parametric Chi-square tests were then employed as in previous studies (see, for example, Ness and Mirza, 1991). These tests were used to determine whether there was any significance in the differences between the types of reporting and the types of company. Table V reveals the results of testing for the fourth hypothesis. The differences between the types of reporting and the types of company were significant, but only at the 0.01 level, and so there was marginal support for the fourth hypothesis. Table VI shows the results of testing for hypothesis five. The differences between the companies preparing separate social or environmental reports and those not preparing such reports are significant at the 0.005 level, and so hypothesis five is supported. Thus the results suggest that there is evidence that companies in environmentally sensitive industries are more likely to prepare separate social or environmental reports than companies in other industries.

The results of the hypothesis tests suggest that there is support for the argument that environmental disclosures in annual and environmental reports are used as a means of legitimising company activities. Companies devote significantly greater space to favourable disclosures than to unfavourable disclosures in their environmental reports, and companies preparing such reports are likely to devote more space to environmental disclosures in their annual reports than companies which do not prepare such separate reports. Companies in environmentally sensitive industries are more likely to prepare a separate social or environmental report than companies in other industries. The preparation of a broad social report by companies in environmentally sensitive industries is consistent with a legitimation strategy, as it enables companies to focus on activities apart from those impacting on the environment.

The foregoing analysis is subject to certain limitations. First, it has focused, in line with much prior research, on legitimacy theory as an explanatory factor in the preparation of stand-alone social and environmental reports by companies. This does not rule out the possibility that other theories have explanatory power also. There is considerable overlap between relevant theories, as was discussed in the paper's second section, as the insights provided by legitimacy and stakeholder theories build upon those of political economy theory. Second, the capture of disclosures in the environmental and annual reports was influenced by the items classified as environmental disclosures. Third, the cross-sectional analysis examined only one year's disclosures and so may not be generalisable across other periods. However, the generally self-laudatory nature of the environmental disclosures was consistent with prior research into annual report disclosures (Deegan and Gordon, 1996; Deegan and Rankin, 1996) and so it appears that some generalisability is possible.

6. Conclusions and implications for research

This study provides broad support for legitimacy theory as an explanatory factor for the disclosures in the separate environmental reports prepared by companies. The results also indicate some support for legitimation motives in the preparation of environmental or social reports by companies in environmentally sensitive industries. The analysis failed to find a significant relationship between the level of disclosures in separate environmental reports and the inclusion of information relating to prosecutions or enforcement notices for environmental offences, but found that there was a very significant emphasis on favourable disclosures in all environmental reports.

The increased production of separate environmental reports has been cited as possible evidence for "a transformation in corporate thinking and action" (O'Donovan, 2002, p. 364). This study suggests that such a "transformation" has more to do with symbolism than substance, however, as the disclosures in separate environmental reports are more detailed than those in annual reports but still aim to present largely positive information on corporate behaviour. This finding is consistent with the results of prior research (Deegan and Gordon, 1996; Deegan and Rankin, 1996; O'Donovan, 2002). Further, the separate environmental reports are often referenced in the annual reports, along with references to environmental disclosures on Web sites, and the mean length of the disclosures in annual reports is significantly greater than the mean length of disclosures by companies not issuing such separate reports. Thus it does not seem to be the case that, as O' Donovan (1999, p. 88) argued, these reports "appear to be designed for different purposes and aimed at different users than the corporate annual report". The separate environmental reports may instead be seen as one part of the information set of voluntary disclosures made by companies in pursuit of legitimation strategies.

The analysis provided within this study suggests several directions for further research. One possibility is to test for legitimation strategies of companies by researching in detail the motives of company management in producing separate environmental or social reports, and the process which determines the content of the reports. Buhr used interviews to research the production of two environmental reports by Canadian companies facing a legitimacy crisis, and found that within their legitimation strategies there was "some genuine effort" to make changes in both performance and communication (2002, p. 34).

Another research opportunity would be to explore the extent to which the disclosures in separate environmental reports have an impact on a company's stakeholders. Research methods such as structured interviews could be used to assess the extent to which environmental disclosures on items such as sustainability policy can change the image of the company's environmental behaviour amongst stakeholders.

Table I Disclosures in corporate environmental reports

Categories and items	Number of companies disclosing: (n = 29)
Financial information	
Total environmental expenditure	3
Items of environmental expenditure	7
Other environmental related information	
Specific environmental policy	29
Environmental targets set	29
Case studies of good environmental practice	27
Promotion of energy efficiency	27
Environmental audit/impact assessment/management system	27
Waste reduction efforts	27
Staff training in environmental issues	25
Recycling efforts	25
Engagement with stakeholders	25
Reduction in greenhouse gases	25
Environmental office/committee/board set up	24
Environmental performance analysed against targets	24
Awards won/inclusion in environmental indices	22
Sustainability policy	22
Water conservation efforts	20
Environmental merits of products or services	20
Reduction in vehicle exhaust emissions	19
Discussion of environmental regulations or requirements	19
External audit or validation of environmental report	15
Support for community environmental projects	13
Report printed on recycled/environmentally friendly paper	13
Prosecutions/enforcement notices for environmental incidents	10
Environmental awards sponsored	1

Table II A comparative analysis of the favourable and unfavourable disclosures in environmental reports

Favourable/unfavourable disclosures *n* = 29		
Mean of differences in pages	23.3	
Standard error	14.27	
One-tailed paired *t*-test:	*t*-value 8.79	significant at 0.0005 level

Table III A comparative analysis of the disclosures in environmental reports of companies revealing prosecutions or enforcement notices for environmental offences versus those not revealing any

	Prosecutions/enforcement notices *n* = 10	No prosecutions/notices *n* = 19
Mean page length	26.2	23.2
Minimum length	20	2
Maximum length	48	69
Standard deviation	9.72	16.93
One-tailed *t*-test:	*t*-value 0.51	not significant at 0.1 level

Table IV A comparative analysis of the environmental disclosures in annual reports of companies which prepare environmental reports and those which do not

	Prepare environmental reports *n* = 29	Do not prepare *n* = 171
Mean number of pages	1.22	0.526
Minimum page proportion	0.05	0
Maximum number pages	4	3
Standard deviation	1.21	0.596
One-tailed *t*-test:	*t*-value 5.19	significant at 0.0005 level

Table V A comparative analysis of the production of environmental reports by companies in environmentally sensitive industries and companies in other industries

	Number of companies producing:			
Type of industry	Environmental report	Social report	No report	Totals
Environmentally sensitive	11	31	11	53
Other industries	18	67	62	147
Totals	29	98	73	200
?2 – test:	?2 –value: 8.13		significant at 0.01 level	

Table VI A comparative analysis of the production of environmental or social reports by companies in environmentally sensitive industries and companies in other industries

	Number of companies producing:		
Type of industry	Environmental or social report	No report	Totals
Environmentally sensitive	42	11	53
Other industries	85	62	147
Totals	127	73	200
?2 – test:	?2 –value: 8.95	significant at 0.005 level	

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Appendix. Distribution of corporate social and environmental reports by sector

FT sector	Number of companies producing: Environmental report	Social report	No report	Totals
Construction	4	9	4	17
General retailers	2	3	11	16
Media & entertainment	0	8	6	14
Support services	1	5	8	14
Transport	3	7	3	13
Speciality & other finance	1	3	8	12
Banks	1	9	1	11
Leisure	0	2	8	10
Real estate	5	2	2	9
Utilities (3 water; 4 power)	3	4	0	7
Mining	0	5	1	6
Oil & gas	1	4	1	6
Telecommunications	1	4	0	5
Pharmaceuticals & biotechnology	0	4	1	5
Beverages	0	4	1	5
Aerospace & defence	1	2	2	5
Life assurance	0	5	0	5
Chemicals	1	2	1	4
Food producers & processors	2	2	0	4
Food & drug retailers	1	3	0	4
Electricity	1	1	2	4
Software & computer services	0	1	3	4
Insurance	0	1	3	4
Health	0	2	1	3
Engineering & machinery	0	1	2	3
Tobacco	0	3	0	3
Venture capital	0	1	1	2
Automobiles & parts	0	0	2	2
Information	0	1	0	1
Personal care	1	0	0	1
Forestry	0	0	1	1
Totals	29	98	73	200

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