THE DETERMINANTS OF CSR DISCLOSURE OF FIRMS LISTED ON THE JSE: A FOCUS ON FIRMS MEETING THE SRI INDEX CRITERIA

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Abstract

This paper tests the relationship between the firms' corporate social responsibility (CSR) disclosures, the extent of media exposure it enjoys and its size, profitability and leverage. The study is confined to firms who meet the Johannesburg Stock Exchange (JSE) criteria for inclusion in its Social Responsibility Index (SRI) and as such the focus is on those firms who are perceived to display best practice with regard to social responsibility. The objective of the study is to determine which factors act as drivers for CSR disclosure. The study uncovered statistically significant positive relationships between CSR disclosures and industry environmental impact as well as media exposure. Legitimacy theory was found to best explain the drivers of CSR disclosure among listed companies in South Africa.

Keywords: Corporate Social Responsibility (CSR), Social Responsibility Index (SRI)

JEL Code: G19

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1 Introduction

The focus on corporate social responsibility (CSR) is a grown in intensity over the past few years. While there is no universally applicable definition of CSR, corporate social responsibility can be broadly defined as voluntary interaction with stakeholders through the inclusion of environmental and social issues in business decisions (Reverte, 2009).

There are varying objectives and approaches to CSR implementation in companies that often depend on numerous firm and industry specific factors. Most internal CSR disclosure, in both content and extent, is voluntary and at each individual company's discretion (Gray, Kouhy & Lavers, 1995). CSR disclosure to external stakeholders such as investors, creditors, regulatory authorities and the media can either be mandated by regulation (statutory) or voluntary (Tagesson, 2009; Arshad &Vakhidulla, 2011). This paper's focus will predominantly be on voluntary disclosure practices, as this allows the discretionary drivers of trends in content and extent of disclosure to be studied.

In South Africa, between 1994 and 1999, the amount of corporate social disclosure by companies and the number of companies that are participating in this voluntary disclosure grew by a tremendous amount (De Villiers, 2000). Extensive research on the relationship between media, firm and industry factors and the extent of social and environmental disclosure has been undertaken in a number of developed countries (Hackston & Milne, 1996; Tagesson, 2008; Reverte, 2009; Arshad & Vakhidulla, 2011) and in developing countries (Ali & Rizwan, 2013; Sufian, 2012; Uwuigbe & Egbide, 2012). To the knowledge of the authors, no study that focuses on the explanatory variables considered in this paper has been conducted in the South African context before.

Comparison of CSR disclosure practices between companies in South Africa and companies in developed economies was conducted by Dawkins & Ngunjiri (2008). The study compared the corporate social responsibility reporting of the top 100 listed companies on the Johannesburg Stock Exchange (JSE) to those in the Fortune Global 100. Dawkins & Ngunjiri (2008) found that companies in the JSE 100 had more consistently higher frequency and level of disclosure in environment, human relations, diversity and community dimensions of corporate social responsibility than the Fortune Global 100 companies (Dawkins & Ngunjiri, 2008). This insight proves to be interesting as most literature has found that the frequency, level and quality of CSR disclosure practices is higher in more developed nations than developing ones (Ali & Rizwan, 2013), suggesting that further research into the determinants of CSR disclosure in South Africa, in comparison to those in other developing nations and the developed world, is necessary.

The Code of Corporate Governance of South Africa of 2009 (King III) emphasises the importance of integrated reporting and sets some guidelines on the

aspects of sustainability reporting that companies should include in their integrated reports (SAICA, 2013). This code is largely adhered to by listed companies in South Africa, although it is not mandatory. The code does not set out a scoring framework for social and environmental sustainability reporting that can be used to measure, benchmark and evaluate the extent of CSR disclosure, hence the need for the definition of a disclosure rating system in this paper.

The absence of a statutory framework for CSR disclosure systems globally has resulted in the establishment of a number of non-governmental organisations that create guidelines used by companies to inform and benchmark their disclosures (Reverte, 2009; Arshad & Vakhidulla, 2011). In addition to the guidance provided by King III, the disclosure rating system used in this study was created from the framework contained in the Global Reporting Initiative Sustainability Reporting Guidelines and the International Organization for Standardization (ISO 14001) (Clarkson, Li, Richardson & Vasvari, 2008; Sutantoputra, 2008, Reverte, 2009).

Global Reporting Initiative (GRI) reporting framework provides guidelines that firms can use to benchmark their economic, environmental and social performance, and the way in which it is reported. The framework can be applied to any firm, in any industry and geography, and in any reporting period. The GRI framework focuses on key performance indicators related to governance strategy, environmental management and on the social elements of business practices, with emphasis on internal and external assurance and certification (Global Reporting Initiative, 2011). The latest set of guidelines, the G4 guidelines, were published in May 2013 (Global Reporting Initiative, 2013). The focus of this paper is on the 2013 financial year; due to the varying financial year-end dates that companies have, the preceding set of guidelines, the G3 guidelines, were used instead.

International Organization for Standardization (ISO) is an independent organization that creates and publishes international standards spanning over most industries and countries around the world (ISO, 2014). These standards are the basis for ISO certifications of business practices performed by independent certifiers. In particular, ISO14001:2004 is a set of standards on environmental management systems that can be implemented and used to assess a wide range of sectors' environmental procedures and protocols (ISO, 2014). ISO14001:2004 was used as one of the measures in the environmental disclosure rating system implemented in this paper.

The aim of this study is to establish the relationship between firms' corporate social responsibility disclosure practices and firm and industry specific factors and media exposure. The next section discusses the theoretical framework the paper is based on and the review of previous literature on CSR disclosure determinants. Section three discusses the research method and data used in the study, after which analysis of the research findings in section 4 precedes the discussion and conclusion in section 5.

2 Theoretical framework and literature review

There exists widespread literature around the determinants of corporate social reporting, including, among the main theoretical perspectives existing in support of corporate social responsibility disclosure, the stakeholder theory, agency theory and the legitimacy theory (Reverte, 2009). Other theoretical perspectives on the determinants of CSR disclosure exist, for example institutional theory and political economy theory (Ali and Rizwan, 2013; Gray et al, 1995). This paper will focus on the former three perspectives mentioned. This will enable comparison to Hackston and Milne (1996) which focused on disclosure practices among listed companies in New Zealand, Reverte (2009) which studied CSR disclosure determinants in listed firms in Spain and Arshad & Vakhidulla (2011) where the determinants of CSR disclosure were studied among companies in Sweden. This study focuses on the same explanatory variables used in the aforementioned papers.

The stakeholder theory is founded on the premise that each business has different stakeholders upon whose approval the continued existence of the business is reliant (Sweeney & Coughlan, 2008; Gray et al, 1995). The theory suggests that management has an obligation and responsibility to ensure business success, and thus undergoes activities to gain this approval from stakeholders (Sweeney & Coughlan, 2008; Gray et al, 1995). While Friedman (1962) (contained in Arshad & Vakhidulla, 2011) defined the stakeholder as the principal shareholder, in modern times stakeholder theory has now expanded this definition to include any groups who have a vested interest in the business, have some power to influence the business's decisions and who are affected, directly and indirectly, by the activities of the business (Arshad & Vakhidulla, 2011).

From the stakeholder theory perspective, social disclosure forms part of communication between the managerial body and the stakeholders of a business. Management can decide how much and when to disclose their CSR practices based on the needs of and impact on stakeholders, in their bid to gain stakeholder approval (Arshad & Vakhidulla, 2011; Gray et al., 1995). Gray, Owen & Maunders (1987) identify one of the limitations of the stakeholder theory to be the inadmissibility of social elements and regulation-mandated disclosure practices. A further limitation of the theory is in not accounting for the information asymmetry between managers and stakeholders which leaves information that is disclosed by managers vulnerable to manipulation (Gray, Owen & Maunders, 1987).

Arshad & Vakhidulla (2011) propose that the stakeholder theory supports a positive relationship between firm size and disclosure, as a larger firm has more stakeholders and thus more of an effect on the community. In this case, increased disclosure is necessary to satisfy regulation and the informational needs of the various stakeholders. A positive relationship between industry impact and disclosure is proposed by Arshad & Vakhidulla (2011) as well, as

companies in more environmentally/socially sensitive industries are exposed to more pressure from stakeholders and thus have greater expectation on them for increased exposure. The relationship between disclosure and profitability from the point of view of the stakeholder theory is inconclusive due to conflicting results of past studies (Belkaoui & Karpik, 1989).

The economic agency theory, also referred to as the positive accounting theory, views the firm as a series of connections of contracts between economic agents functioning astutely in an efficient market (Comier, Magnan & Van Velthoven, 2011). This theory focuses on the use of information to make decisions around entering into economically beneficial relationships with other economic agents.

Comier, Magnan & Van Velthoven (2011) state that under economic agency theory, CSR disclosure can be used for determining managerial compensation contracts, debt obligation agreements and implicit political costs. Belkaoui & Karpik (1989) found this theory to be a useful and attractive way to justify CSR disclosure by managers who choose reporting procedures that allow them to defer reporting negative social performance from current to future periods. According to the agency theory agency considerations in disclosure of social and environmental information arise as managers will only disclose information if the benefits of doing so exceed the costs. Agency costs are incurred when managers withhold information, release incorrect information or only disclose that information that makes them appear to have performed better than they did, to the detriment of the shareholders (Arshad & Vakhidulla, 2011).

Limitations of the agency theory include the assumption that all relevant economic agents function in informationally efficient markets and are motivated by monetary intentions, which does not hold true in reality (Comier, Magnan and Van Velthoven, 2011; Reverte, 2009). The agency theory suggests a positive relationship between the size of a firm and the extent of social disclosure. This finding follows the rationale that as a firm grows, it develops interconnections between a structured network of resource providers who demand long run economic and social efficiency. This increases the number of agents with interests in the firm's social and environmental practices, and thus increases the importance of the firm's disclosure (Richardson & Welker, 2001; Hackston & Milne, 1996).

Hackston and Milne (1996) echo the views of Patten (1991) that a positive relationship between industry impact and disclosure is explained by the agency theory. More sensitive industries tend to have more political and regulatory activity and attention, thus increased disclosure is used to ward off unwanted pressure from these groups. There continues to be mixed results around the relationship between profitability and disclosure under the agency theory (Hackston & Milne, 1996; Reverte, 2009; Belkaoui & Karpik, 1989). Many studies however conclude that agency theory does not have much to offer by way of explaining the determinants of CSR disclosure practices (Arshad & Vakhidulla, 2011).

The last of the theories is the legitimacy theory which is defined as an approach in which the firm is influenced by and in turn has influence in the society it operates in (Deegan, 2002). CSR disclosure is one of the tools that the firm uses to influence society. This theory explicitly considers that economics, politics and society cannot be separated, and thus firms are bound by their social contract to perform acts to satisfy the terms of this contract. Fulfilment of this social contract within the institutional and social framework the firm operates in gains the approval of society as a whole and ensures the firms survival and success (Deegan, 2002; Reverte, 2009; Brown & Deegan, 2012; Clarke & Gibson-Sweet, 1999).

Legitimacy theory posits that a firm uses social responsibility disclosure as a tool to legitimize the firm's existence and communicate to the rest of society that the firm undertakes desirable action within the constructed system of norms, values and beliefs (Reverte, 2009; Hooghiemstra, 2000; Brown & Deegan, 2012). CSR disclosure is a legitimizing strategy to influence public perception of the firm in order to maintain control of the its political and economic standing (Reverte, 2009; Deegan, 2002; Comier, Magnan and Van Velthoven, 2011).

Hackston and Milne (1996) propose that a positive size-disclosure relationship exists according to the legitimacy theory; larger companies that undertake more activities have a larger societal impact, warranting the need for increased voluntary disclosure by management. The positive relationship between industry sensitivity and disclosure according to the legitimacy theory can be explained by increased regulatory activity in more sensitive industries resulting in increased disclosure by firms to prevent the costs of non-disclosure (Arshad & Vakhidulla, 2011). As with the other two theories, there are conflicting reports about whether a relationship between CSR disclosure and profitability exists under the legitimacy theory. The legitimacy theory states that increased media coverage of a firm's CSR results in increased disclosure; in return, increased disclosure is a response to increased public attention. The firm will disclose its social and environmental measures in response in order to legitimize its operations and influence the perceptions of the public (Arshad & Vakhidulla, 2011).

The theories around disclosure determinants have informed the various variables researchers have focused on in past papers when determining the drivers of CSR disclosure in particular contexts. Ali & Rizwan (2013) found that there is a significant difference in the CSR disclosures of companies in developed and emerging markets, with developed countries producing a larger quantity of disclosure than in developing countries. This difference is linked to the main drivers of disclosure in the economic settings of these countries; with developed countries being driven by the need to control the corporate's reputation, marketing of the company's products and services, the need to reduce the cost of capital and a desire to gain competitive advantage (Ali & Rizwan, 2013; Dhaliwal, Li, Tsang & Yang, 2011; Richardson & Welker, 2001). Emerging markets disclosure

practices are largely motivated by the need to maintain corporate reputation, "enjoy tax benefits, gain employees commitment and reduce cost and company risk" (Ali & Rizwan, 2013).

Both developed and developing countries face similar hurdles that impact on which medium to use and how frequently they disclose their corporate social responsibility practices. Lack of legislation and government support, and deficient understanding of CSR and environmental needs on the parts of management and the users of company reports constitute some of the hurdles faced. Other challenges that impact disclosure decisions include the absence of a reporting framework, the costs of reporting and a lack of understanding of the benefits of CSR disclosure (Ali & Rizwan, 2013; Thompson & Zakaria, 2004).

There have been numerous studies conducted in developing countries around the determinants of corporate social and environmental disclosure habits and these have focused on an array of theoretical approaches as well as explanatory variables. Many studies focus on determining the relationship between disclosure and a variable such as financial performance (e.g. profitability) or industry sensitive and then control for other factors such as company size, leverage and media exposure (Ali & Rizwan, 2013).

Sufian (2012) found that market capitalization (a proxy for firm size) is a significant explanatory factor for CSR disclosure among listed companies in Bangladesh, while age, net profit and multinational affiliation have no statistically significant relationship with CSR disclosure. Saleh, Zilkifli & Muhamad (2009) uncovered a positive and significant relationship between disclosure and financial performance/profitability among companies in Malaysia, a result consistent with the findings in many developing nations (Ali & Rizwan, 2013; Sufian, 2012; Uwuigbe & Egbide, 2012). Company age, industry type and company size were found to be significant factors that drive corporate social disclosure among firms in Libya (Bayoud, Kavanagh & Slaughter, 2012).

In contrast, the evidence from developed nations contradicts some of the insights gained from the study of developing countries above. Common variables employed the study of CSR determinants among companies on developed nations include CSR ratings as the dependent variable and company size, media exposure, profitability, industry sensitivity, ownership concentration, leverage, and international listing as independent variables (Arshad &Vakhidulla, 2011; Hackston & Milne, 1996; Reverte, 2009). Not every variable was used in every study, but most were present, and the different disclosure rating systems were derived from different sources depending on the country and context. Arshad & Vakhidulla (2011) found that company size, sensitivity and media exposure have significant explanatory power, with stakeholder and legitimacy theories as the theories that correlate the most with the findings. Hackston & Milne (1996) drew similar conclusions, with additional findings leading to the conclusion that the size-disclosure relationship is stronger for more high profile industries than low profile industries, supporting the agency theory. Reverte (2009) uncovered the same findings among Spanish listed firms, with media exposure as the strongest explanatory factor, which was found to support the legitimacy theory in this context. The main discrepancy among developing and developed nations is the profitability – disclosure relationship, as no relationship between profitability and CSR disclosure was discovered in the studies discussed above (Arshad & Vakhidulla, 2011; Hackston & Milne 1996; Reverte, 2009).

Research has been undertaken to understand the determinants of corporate social and environmental disclosure practices among firms within a South African context. DeVilliers & Van Staden (2006) proposed that legitimacy theory can explain the decreasing trend in environmental reporting of both general and specific information in Mining and Top 100 industrial companies listed on the JSE. While not concentrating on any specific company and industry factors, DeVilliers & Van Staden (2006) conclude that the legitimacy theory explains the observed decrease in CSR disclosure in South Africa. This presents a good hypothesis and departure point from which to test whether focusing on the specific explanatory factors of size, industry impact, leverage, profitability and media exposure will yield the same results.

3 Data and research method

3.1 Sample

It is imperative that the companies included in the study have existing environmental and social responsibility initiatives in place, in order for their disclosures to be studied. The study was conducted on a sample of 30 companies that are listed on the Johannesburg Stock Exchange (JSE) and formed part of the Socially Responsible Investment (SRI) Index in 2013. This constitutes 42% of the companies that met the criteria for inclusion into the SRI Index. All companies within the sample form part of the JSE/FTSE All Share Index (ALSI). Industries that are represented in the sample are basic materials, financials, industrials, technology, consumer services, healthcare and consumer goods. The industry distribution in the sample is representative of the distribution of sectors in the index as a whole. The Index constitutes companies that meet a set of stringent criteria related to triple bottom line reporting and good governance, specifically applying criteria related to environment, society and corporate governance sustainability (ESG) (Johannesburg Stock Exchange, 2013).

3.2 Data collection

Only information that was publically available on each company's website was admissible as disclosure that contributed to the company's rating. This included disclosures contained in integrated annual reports, stand-alone sustainability reports, codes of conduct and policies contained in company websites related to

sustainability practices, among others. Information from third party sites and the media was not admissible in the disclosure rating, unless explicitly contained in the company websites.

3.2.1 The dependent variable: disclosure rating

The disclosure rating system applied in this study was in the form of a checklist that assigned scores to different social and environment criteria, with governance considered only to the extent to which it impacts social and environmental practices. The environmental checklist (in Appendix A) was primarily that developed by Clarkson et al. (2008) in the study of the relationship between environmental performance and environmental disclosure among firms in the United States. This study applied two modifications to the original checklist, which were the removal of environmental performance indicators (EPIs) related to "toxic release inventory" and "other discharges, releases or spills" (Clarkson et al, 2008) as these only apply to certain industries and would thus give an unfair scoring advantage to those industries.

The social checklist (in Appendix B) predominately contains the social disclosure checklist created by Sutantoputra (2008) with the purpose of complementing the environmental disclosure checklist formulated by Clarkson et al (2008). In order to improve the relevance and applicability of the social disclosure system to the South African context, several additions were made in line with King III standard on reporting and the SRI index criteria. These additions were:

- The recognition of King III as an acceptable reporting guideline to adopt, in addition to the GRI framework and ISO standards;
- Policy on stakeholder communication;
- Social performance indicator (SPI) on discipline and grievance policy/procedure;
- Existence of policy on HIV/AIDS;
- Social performance indicator (SPI) on Black Economic Empowerment (BEE) / Broad-Based BEE.

The ratings are separated into hard disclosure items, which are objective measures that are observable through evidence and cannot be easily falsified (Clarkson et al, 2008) and soft disclosure measures which concern company visions, strategy and policies and are weighted less than the hard disclosure items (Clarkson et al, 2008; Sutantoputra, 2008).

Each element in the soft disclosure items, the governance structure and management systems, credibility, and discretionary environmental spending criteria (under hard disclosure items) carries a weight of one point each. Environmental performance indicators in part A3 have a weight of six points each, with a point awarded for each of the following:

- Data for that period is presented;
- Data is compared to performance by rivals/peers or industry average;
- There is a trend analysis of performance relative to previous periods;
- Performance is measured/presented relative to company targets;
- Data appears in both absolute and normalized form;
- Performance is presented at a disaggregate level (Clarkson et al, 2008).

A similar scoring system is followed in the social disclosure rating system, with the difference arising in the scoring of elements in part B3 of the hard disclosure items, where each social performance indicator has a weight of three points, with a point awarded for each of the following:

- Performance data is presented;
- Trend analysis of practices in previous period is presented;
- Presentation/mentioning of targets for future performance/improvement.

The environmental and social disclosure rating systems were credited out of 83 and 93 respectively, giving a total of 176 as the maximum score a firm could obtain in total. Both rating systems were created according to the GRI sustainability reporting framework (G3), and are thus consistent and complementary, and are applicable to the various industries present in the sample (Clarkson et al, 2008; Sutantoputra, 2008).

3.2.2 Independent variables

There were five independent variables considered in this paper.

3.2.2.1 Size

In previous studies, size has been measured using a variety of characteristics including number of employees (Tagesson, 2008; Gray et al, 1995) and total assets (Comier et al, 2005; Hackston & Milne, 1996). This study will use the natural log of market capitalization as was used in Reverte (2009) and Arshad & Vakhidulla (2011). Taking the natural logarithm of such huge numbers as the market capitalization will result in a narrower range. The market capitalizations are as at 31 December 2013 and sourced from the McGregor BFA database.

3.2.2.2 Profitability

While a variety of accounting based measures that could be used as a proxy for profitability exists, this study measures profitability using the return on assets (EBIT/total assets). Revert (2008) used the return on assets in the reporting period, while Hackston & Milne (1996) made use of a five year average return on assets ratio. This study measures profitability using the return on assets on 31 December 2013 for each firm, sourced from McGregor BFA database.

3.2.2.3 Leverage

Leverage is measured using the debt-to-equity ratio on 31 December 2013 as sourced from the McGregor BFA database, in line with similar the practice by Reverte (2009).

3.2.2.4 Industry environmental impact

Industry environmental impact is measured as a binary variable, with the value 1 being assigned to industries with high impact, and 0 assigned to low and medium impact industries. Environmental impact refers to a measure of the effect that an industry's activities has on the environment. It is calculated as a ratio of environmental damage arising from that industry's activities to the industry's economic significance, as classified by the Ethical Investment Research and Information Service (EIRIS) (Johannesburg Stock Exchange, 2013). The SRI Index classifies the environmental impact of the various industries in the index according to the EIRIS classification system mentioned above. EIRIS is a UK-based social enterprise that provides company Environment, Social and Governance (ESG) information to responsible investors (EIRIS, 2014).

3.2.2.5 Media exposure

Media exposure is measured by the number of articles that appeared in one of South Africa's most popular live business news websites, Business Day Live, in the period 1 January 2013 to 31 December 2013. The number of articles was sourced from the Business Day Live website using an advanced search tool on the site. The website caps the number of articles at 500 per company; thus the maximum score a firm can have for media exposure is 500.

3.3 Empirical models

Descriptive statistics were obtained for each of the independent variables in the process of explanatory analysis, as well as a study of the correlation between each independent variable and the dependent variable. A scatterplot matrix was also created of all the variables in order to observe any potential outliers, and study the effects of including or excluding these outliers on the results. This serves as a departure point that allows better understanding of the data and the relationships that exist between the variables.

In order to test the hypothesis developed, a linear regression was used to establish the magnitude and significance of the relationship between CSR disclosure (CSRD) and the explanatory variables measured as discussed above from the sampled companies. This regression was in the form of the econometric model below:

$$CSRD = \beta_0 + \beta_1.size + \beta_2.Profitability + \beta_3.leverage + \beta_4.industry\ impact + \beta_5.media\ exposure + \varepsilon \quad (1)$$

Where β_0 – the intercept/constant term;

ε – the unobserved error term, which contains all other variables not explicitly included in the model;

β_i – the slope coefficient related to each variable i, i.e. the ceteris paribus effect each variable has on the CSRD rating.

Three regressions were run using STATA, the first with only environmental disclosure rating as the dependent variable, the second with social disclosure rating as the dependent variable, and the last regressed the total disclosure rating on all the independent variables. The explanatory variables are the same in all three regressions.

4 Research findings

4.1 Descriptive statistics

Table 1 displays statistical description of the dependent variable split into the environmental disclosure and social disclosure ratings respectively, and the independent variables size, profitability, leverage and media exposure.

Table 1 shows that there is more variability in the environmental disclosure ratings than in the social disclosure ratings, with the mean social disclosure rating being considerably higher than the mean environmental rating. This is likely a function of the maximum obtainable score being higher for social than for environmental disclosure. The wide range in environmental disclosure scores suggests that social disclosure practices are more stringently applied and reported than environmental disclosure amongst the companies in the sample. This is further emphasised by social disclosure having a larger minimum value.

Table 1. Descriptive statistics for the dependent and independent variables

Variable	N	Mean	Std. Deviation	Min	Max
Dependent Variables					
Environ. Disclosure	30	42.3	10.452	22	61
Social Disclosure	30	60.5	9.508	42	77
Total disclosure	30	102.8	17.928	71	136
Independent Variables					
Size	30	24.259	1.588	21.089	27.758
Media exposure	30	200.367	186.175	2	500
Profitability	30	0.047	0.106	-0.208	0.306
Leverage	30	11.560	52.488	0.140	288.970

There is little variation in the size variable in Table 1, which can be attributed to the use of the natural logarithm narrowing the range. While the mean number of articles in Business Day Live is a

high 200, the standard deviation of 186.175 indicates wide variation in the media exposure variable, which can be expected to improve the unbiasedness of the slope coefficients derived from the linear regression to follow.

The leverage variable exhibits high volatility, with a standard deviation that is almost five times the mean, and a wide range between the minimum and maximum value. Analysis of the data and the scatterplot diagram in Appendix C reveal that this volatility is the result of an outlying value of 288.97. Every observation adds value to the study, particularly interesting values such as outliers, so it is important to assess the impact of the observation before deleting it. To assess whether the outlier should be drop from the study, the regressions were run on the data including and excluding the observation. Inclusion of the observation was found to have no impact on the statistical significance or correlation of the leverage variable, or any other variable in the regression, and thus the observation was not dropped.

In order to assess the degree of linear relationship that exists between the independent variables and the dependent variable respectively, a correlation matrix is presented in Table 2. The data shows no significant linear relationship between the dependent variable and most of the independent variables. Industry impact has the highest correlation and exhibits the strongest linear relationship with the disclosure rating, consistent with findings in previous studies (Arshad & Vakhidulla, 2011). The relatively low correlation amongst the independent variables themselves suggests that multicollinearity is not of significant concern in this data set.

Table 2. Correlation matrix

	Discl. rating	Size	Ind. impact	Media exp.	Profitability	Leverage
Discl. rating	1					
Size	0.157	1				
Industry impact	0.564	0.228	1			
Media exposure	0.224	0.295	0.135	1		
Profitability	-0.047	0.248	0.020	-0.565	1	
Leverage	-0.339	0.046	-0.214	-0.050	-0.004	1

4.2 Regression analysis

Three regressions were run. The regression was run with the environmental disclosure rating as the dependent variable, the second with social disclosure rating as the dependent variable and the final regression used the overall disclosure rating as the dependent variable. The independent variables in the three regressions were size, profitability, leverage, media exposure and industry impact. Table 3 presents the slope coefficients of each variable and their associated p-values (in brackets) for the different regressions, as well as a goodness-of-fit measure (R-squared).

The only variable that is statistically significant in all three regressions is industry impact; leverage and size have no statistically significant explanatory power in any of the three regressions. Similarly, profitability, which is potentially the most contentious of all the variables (Arshad & Vakhidulla, 2011; Reverte, 2008; Belkaoui & Karpik, 1989) shows no statistically significant explanatory power in any of the three regressions. The explanatory variables are a reasonably adequate fit for the first two models, while at 38.95% they explain marginally less of the variability in the overall disclosure rating. Social disclosure appears to be the most endogenous of the three dependent variables, with the most significant explanatory variables. This suggests that the drivers for environmental and social disclosures potentially differ from each other, and from the drivers of combined CSR disclosure overall.

5 Discussion and conclusions

5.1 Discussion

Findings in this study suggest that environmental impact of the industry is the most significant explanatory variable of firms' overall CSR disclosure practices, with firms in high impact industries obtaining a disclosure rating of 18 points higher, on average, than firms in medium and low impact industries. This finding is consistent with Reverte (2009), Hackston & Milne (1996) and Arshad & Vakhidulla, (2011), which also uncovered no significant relationship between profitability and disclosure. Media exposure's significance with respect to social disclosure is in line with conclusions in Reverte (2009). Unlike Reverte (2009), Hackston & Milne (1996) and Arshad & Vakhidulla, (2011) which found a positive size-disclosure relationship, this study does not show a positive size-disclosure relationship with respect to the environmental rating.

The overall significance of the industry impact variable is in line with the tenants of the stakeholder theory, as firms in high environmental impact industries tend to be the most regulated, and thus have to disclose more to their stakeholders, particularly regulation authorities. This relationship is also in line with the suppositions of the legitimacy theory, as companies in industries considered to have a substantial impact on the environment have more to prove as their effects are mostly easier to observe than those in other industries. This creates an incentive for the companies to emphasise their CSR initiatives through increased and better quality disclosure.

Table 3. Regression output

	Dependent Variable		
	Environmental Rating	**Social rating**	**Overall disclosure rating**
Constant	9.463	83.521	92.984
	(0.75)	(0.005)**	(0.083)*
Size	1.291	-1.357	-0.066
	(0.329)	(0.262)	(0.977)
Industry impact	11.528	5.848	17.376
	(0.002)**	(0.071)*	(0.007)**
Media exposure	-0.014	0.030	0.016
	(0.3)	(0.017)**	(0.468)
Profitability	-25.330	32.163	6.832
	(0.26)	(0.121)	(0.86)
Leverage	-0.030	-0.047	-0.077
	(0.365)	(0.122)	(0.186)
R-squared	41.41%	41.10%	38.95%

* Significant at the 10% level;
** Significant at the 5% level.

The legitimacy theory also explains why companies with more media exposure tend to have higher social disclosure ratings on average. Higher media exposure increases the transparency and accountability requirements of firms as their operations are frequently scrutinized by the media. Voluntary disclosure of their social responsibility practices creates the impression that the firm is fulfilling the requirements of the social contract entered into with society, thus gaining legitimacy and approval from society. The findings in this paper with respect to industry impact and media exposure as determinants of CSR disclosure support the conclusions made in DeVilliers & Van Staden (2006) that the legitimacy theory explains CSR disclosure practices in South Africa.

The CSR disclosure findings in this study correspond to findings in some developed economies, while opposing the trend that has been identified in developing nations. Developing economies consistently have found a positive profitability-disclosure relationship, and the size-disclosure relationship has often been found to be positive and significant (Saleh, Zilkifli & Muhamad (2009); Ali & Rizwan, (2013); Sufian, (2012); Uwuigbe & Egbide, (2012); Bayoud, Kavanagh & Slaughter, (2012)), none of which are significant among listed firms in South Africa. This suggests that the drivers for increased disclosure in South Africa may differ from those in other developing economies, and that South Africa should benchmark its CSR practices against companies in developed economies.

5.2 Conclusions

Industry impact, having the most statistically significant explanatory power suggests that companies in industries that have more of an environmental impact tend to disclose more of their environmental and social practices. These high impact industries are also the most regulated, and have the highest expectations of disclosure by stakeholders. This suggests that increased regulation of environmental and social practices across all industries could promote higher extent and quality of CSR disclosure among firms in South Africa.

The media exposure's effect on social disclosure emphasises that CSR disclosure practices in the South African context are driven by factors involving visibility and accountability to stakeholders, highlighting the legitimacy theory as the theory that best explains CSR disclosure practices.

These findings may be of significance to policy makers by informing the direction of future policy. In addition, investors who seek to direct their investments toward companies whose activities are deemed to be socially responsible may find an interest in these finding.

Further research can be undertaken to assess the differences in the type of disclosure among companies in high impact industries, low impact industries and medium impact industries. The research could be extended to investigate the trend in disclosure determinants among listed companies in high environmental impact industries over multiple periods through the use of a longitudinal study. The output of these studies may better inform policy makers and investors alike.

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Appendix A. Environmental disclosure rating system

Table A.1. Hard disclosure items

Hard disclosure items (max score is 79)	Code	Score	Map to GRI
A1: Governance structure and management systems (max score is 6)			
Existence of a Department for pollution control and/or management positions for environmental Management	A1.1	0-1	3.1
Existence of an environmental and/or a public issues committee in the board	A1.2	0-1	3.1
Existence of terms and conditions applicable to suppliers and/or customers regarding environmental Practices	A1.3	0-1	3.16
Stakeholder involvement in setting corporate environmental policies	A1.4	0-1	1.1, 3.10
Implementation of ISO14001 at the plant and/or firm level	A1.5	0-1	3.14, 3.20
Executive compensation is linked to environmental performance	A1.6	0-1	3.5
A2: Credibility (max score is 10)			
Adoption of GRI sustainability reporting guidelines, provision of a CERES report or adoption of other recognised guidelines e.g. King lll	A2.1	0-1	3.14
Independent verification/assurance about environmental information disclosed in the EP report/web	A2.2	0-1	2.20, 2.21
Periodic independent verifications/ audits on environmental performance and/or systems	A2.3	0-1	3.19
Certification of environmental programs by independent agencies	A2.4	0-1	3.2
Product Certification with respect to environmental impact	A2.5	0-1	3.16
External environmental performance awards and/or inclusion in a sustainability index	A2.6	0-1	
Stakeholder involvement in the environmental disclosure process	A2.7	0-1	1.1, 3.10
Participation in voluntary environmental initiatives endorsed by EPA or Department of Energy	A2.8	0-1	3.15
Participation in industry specific associations/initiatives to improve environmental practices	A2.9	0-1	3.15
Participation in other environmental organizations/assoc. to improve. environmental practices (if not awarded under 8 or 9 above)	A2.10	0-1	3.15
A3: Environmental performance indicators (EPI) (max score is 60)*			
EPI on energy use and/or energy efficiency	A3.1	0-6	EN3,4,17
EPI on water use and/or water use efficiency	A3.2	0-6	EN5,17
EPI on greenhouse gas emissions and climate change	A3.3	0-6	EN8
EPI on other air emissions	A3.4	0-6	EN9,10
EPI on waste generation and/or management (recycling, re-use, reducing, treatment and disposal)	A3.7	0-6	EN11
EPI on land and resources use, biodiversity and conservation	A3.8	0-6	EN6,7
EPI on environmental impacts of products and services	A3.9	0-6	EN14
EPI on compliance performance (e.g., exceedances, reportable incidents)	A3.10	0-6	EN16
A4: Environmental spending (max score is 3)			
Summary of rand savings arising from environment initiatives to the company	A4.1	0-1	
Amount spent on technologies, R& D and/or innovations to enhance environmental performance and/or efficiency	A4.2	0-1	EN35
Amount spent on fines related to environmental issues	A4.3	0-1	EN16

Table A.2. Soft disclosure items

Soft disclosure items (max score is 16)	Code	Score	Map to GRI
A5: Vision and strategy claims (max score is 6)			
CEO statement on environmental performance in letter to shareholders and/or stakeholders	A5.1	0-1	1.1,1.2
A statement of corporate environmental policy, values and principles, environ. codes of conduct	A5.2	0-1	1.1,1.2,3.7
A statement about formal management systems regarding environmental risk and performance	A5.3	0-1	3.19
A statement that t he firm undertakes periodic reviews and evaluations of its environ. Performance	A5.4	0-1	3.19
A statement of measurable goals in terms of future environmental performance (if not awarded under A3)	A5.5	0-1	1.1,1.2
A statement about specific environmental innovations and/or new technologies	A5.6	0-1	1.1,1.2
(A6) Environmental profile (max score is 4)			
A statement about the firm's compliance (or lack thereof) with specific environmental standards	A6.1	0-1	GN8
An overview of environmental impact of the industry	A6.2	0-1	GN8
An overview of how the business operations and/or products and services impact the environment.	A6.3	0-1	GN8
An overview of corporate environmental performance relative to industry peers	A6.4	0-1	GN8
(A7) Environmental initiatives (max score is 6)			
A substantive description of employee training in environmental management and operations	A7.1	0-1	3.19
Existence of response plans in case of environmental accidents	A7.2	0-1	
Internal environmental awards	A7.3	0-1	
Internal environmental audits	A7.4	0-1	3.19,3.20
Internal certification of environmental programs	A7.5	0-1	3.19
Community involvement and/or donations related to environ. (if not awarded under A1.4 or A2.7)	A7.6	0-1	SO1,EC10

Appendix B. Social disclosure rating system

Table B.1. Hard disclosure items

Hard disclosure items (max score is 67)	Code	Score	Map to GRI
(B1) Governance structure and management systems (max score is 6)			
Existence of a department or management positions for addressing firm's social impacts	B1.1	0-1	3.1
Existence of an social and/or a public issues committee in the board	B1.2	0-1	3.1, 3.6
Existence of terms and conditions applicable to employees and customers regarding firms' social practices	B1.3	0-1	
Stakeholder involvement in setting corporate social policies	B1.4	0-1	1.1, 3.10
Implementation of ILO standards, UN declaration of human rights and UN Global Compact	B1.5	0-1	3.14, 3.20
Executive compensation is linked to social performance	B1.6	0-1	3.5
(B2) Credibility (max score is 11)			
Firm acknowledges the use of GRI sustainability reporting guidelines or King lll	B2.1	0-1	3.14
Independent verification/assurance about social information disclosed in the sustainability report	B2.2	0-1	
Periodic independent verifications/audits on social performance and/or systems	B2.3	0-1	3.19, 2.20,21
Certification of social (labour) programs by independent agencies	B2.4	0-1	3.2
Product certification with respect to product safety	B2.5	0-1	3.16
External labour performance awards	B2.6	0-1	
Stakeholder involvement in the Social disclosure process	B2.7	0-1	1.1, 3.10
SPI on stakeholder communication (newsletters, meetings etc*)*	B2.8	0-1	
Participation in voluntary social initiatives endorsed by ILO or Department of Labour	B2.9	0-1	3.15
Participation in industry specific associations/initiatives to improve labour management practices	B2.10	0-1	3.15
Participation in other labour organizations/assoc. to improve labour practices (if not awarded under 8 or 9 above)	B2.11	0-1	3.15
(B3) Social performance indicators (SPI) (max score is 60)*			
Labour practices and decent work			
SPI on employment information (type, numbers of employees by region/country, employment creation and average turnover)	B3.1	0-3	LA 1,2
SPI on labour/management relations (the presence of independent trade unions and companies' policies and procedures)	B3.2	0-3	LA 3,4
SPI on discipline and grievance procedure/policy	B3.3	0-3	
SPI on health and safety (policies on occupational accidents and diseases, standard injury, lost day, and absentee rates and number of work-related fatalities	B3.4	0-3	LA 5,6,7,8
Existence of policy on HIV/AIDS	B3.5	0-3	
SPI on training and education (Average hours per year per employee by category of employee, information on external skills development)	B3.6	0-3	LA 9
SPI on diversity and opportunity (description of equal opportunity policies, monitoring systems)	B3.8	0-3	LA 10,11
SPI on Black Economic Empowerment (policy, monitoring, targets, benchmarking etc)	B3.9	0-3	
Human rights			
SPI on strategy and management (description of firms policies related to the universal declaration and the fundamental human rights conventions of ILO	B3.10	0-3	HR 1,2,3
SPI on non-discrimination (policies/program/procedures preventing all forms of discriminations in firms' operations)	B3.11	0-3	HR 4
SPI on freedom of association and collective bargaining (firms' policies on acknowledging freedom of association and collective bargaining)	B3.12	0-3	HR 5

Table B.1. Hard disclosure items (continued)

Hard disclosure items (max score is 67)	Code	Score	Map to GRI
SPI on child labour (policies to exclude the use of child labour directly from firms' internal operations and indirectly from firms' suppliers)	B3.13	0-3	HR 6
SPI on forced and compulsory labour (policies addressing forced and compulsory labour)	B3.14	0-3	HR 7
Society			
SPI on community (policies to manage impacts on community in areas affected by firms' operations)	B3.15	0-3	SO 1
SPI on bribery and corruption (policies and mechanism for organisation and employees in addressing bribery and corruptions)	B3.16	0-3	SO 2
SPI on political contributions (policies, management system and compliance mechanism for managing political lobbying and contributions)	B3.17	0-3	SO 3
Product responsibility			
SPI on customer health and safety (policy protecting customer health and safety during the use of firms' product and services)	B3.18	0-3	PR 1
SPI on products and services (policy, management systems and compliance mechanism for product information and labelling)	B3.19	0-3	PR 2
SPI on respect for privacy (firms' policies, management systems, and compliance mechanism for consumer privacy)	B3.20	0-3	PR 3
(B4) Social spending (max score is 3)			
Summary of rand savings arising from social initiatives to the company	B4.1	0-1	
Amount spent on community, political contributions to enhance social performance	B4.2	0-1	SO 1,3
Amount spent on fines related to social litigation/issues	B4.3	0-1	SO 2, PR 1, HR 4,5,6,7

Table B.2. Soft disclosure items

Soft disclosure items (max score is 16)	Code	Score	Map to GRI
(B5) Vision and strategy claims (max score is 6)			
CEO statement on social performance in letter to shareholders and/or stakeholders	B5.1	0-1	
A statement of corporate social policy, values and principles, codes of conduct	B5.2	0-1	1.1, 1.2, 3.7
A statement about formal management systems regarding social risk and performance	B5.3	0-1	3.19
A statement that the firm undertakes periodic reviews and evaluations of its social performance	B5.4	0-1	3.19
A statement of measurable goals in terms of future social performance	B5.5	0-1	1.1
A statement about specific social innovations and improvements	B5.6	0-1	1.1
(B6) Social profile (max score is 4)			
A statement about the firm's compliance (or lack thereof) with specific social standards	B6.1	0-1	1.2
An overview of social impact of the industry	B6.2	0-1	1.2
An overview of how the business operations and/or products and services impact the society, employees and customers	B6.3	0-1	1.2, 3.17
An overview of corporate social performance relative to industry peers (0-1) 1.2	B6.4	0-1	1.2
(B7) Social initiatives (max score is 6)			
A substantive description of employee training in social management and operations	B7.1	0-1	3.19
Existence of response plans in case of social incidents	B7.2	0-1	
Internal social (labour, employees and customers) awards	B7.3	0-1	
Internal social (labour, employees and customers) audits	B7.4	0-1	3.2
Internal certification of employees programs	B7.5	0-1	3.19
Community involvement and/or donations related to society	B7.6	0-1	

Appendix C. Scatter diagram of variables