

**Towards corporate transparency: The link between inclusion in a SRI
Index and investor relations practices**

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Abstract

Purpose: The purpose of this study was to determine whether companies recognized for the quality of their sustainability reporting are also adopting investor relations (IR) best practices for their IR webpages. Quality communications to all stakeholder groups may then speak to organisational transparency and integrated corporate communication management (CCM).

Design/methodology/approach: An ordinary least squares regression model was developed to test the hypothesis that companies with quality sustainability reporting also adopts best practices in online IR. Sustainability reporting quality was signalled by inclusion of the company in a Socially Responsible Investment (SRI) index. IR quality was proxied by disclosure scores compiled from content analyses of investor relations webpages.

Findings: This study find that inclusion in the SRI Index was positively and significantly associated with online IR quality, whilst controlling for other variables associated with voluntary disclosure behaviour.

Originality/value: This study contributes to the literature on corporate transparency by operationalising reporting 'transparency' in that it considers the combined communications output to both financial and non-financial stakeholder groupings. A 2 x 2 conceptual framework for corporate disclosures is proposed that reconciles legitimacy theory and voluntary disclosure theory as motivations. It also contributes to the paucity of research on the links between public relations and investor relations in corporate communications by demonstrating a joint contribution to transparency.

Practical Implications: For retail and institutional investors in SRI Index companies, cost of information discovery is reduced as they can use the investor relations webpages as comprehensive source.

Key words: transparency, corporate communication management, sustainability reporting, investor relations, stakeholders, SRI Index, legitimacy, South Africa

Paper type: Research paper

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Introduction

Corporate stakeholders and users of corporate communications are relying on companies to be transparent. Organizational transparency is an increasingly significant area of study (Schnackenberg & Tomlinson, 2016; Albu & Flyverbom, 2016). In their review of the literature, Schnackenberg and Tomlinson (2016) remark that there seems to be a lack of ‘theoretically grounded consensus on the transparency construct’ across domains of research, how it relates to building trust and how organisations manages transparency. They propose the following definition: “Transparency is the perceived quality of intentionally shared information from a sender” (Schnackenberg & Tomlinson, 2016). Along the same line, Albu and Flyverbom (2016) suggest that future research investigates which forms of reporting are ‘conducive to transparency and CSR’ as well as how transparency are ‘operationalised’. Holland *et al.* (2017) argue that ‘an organization’s strategic decision to be transparent can be communicated to the public at tactical level via decisions regarding message design’. This paper aims to assess companies’ transparency intention based on whether there is a link between two types of ‘messages’; communications aimed at investors (financial stakeholders) and communications aimed at non-financial stakeholders.

According to Cornelissen (2008), corporate communications encompass the coordination of all internal and external communications to various stakeholders groups. One of the ways in which stakeholders could be classified is financial and non-financial stakeholders. Investors, banks and creditors are primarily interested in financial and strategic information that helps them assess share value, managers’ performance, or credit risk (Jensen & Meckling, 1976; Healy & Palepu, 1993, 2001; Sengupta, 1998; Laskin, 2011; Hoffmann & Fieseler, 2012; Bourveau & Schoenfeld, 2017). Communities, employees and environmental groups on the other hand, are mainly interested in information regarding companies’ activities and its effects on their lives, continued employment and the environment. Increasingly, sustainability information are also found to be value-relevant to shareholders and analysts (de Klerk & de Villiers, 2012; Elliott *et al.*, 2014; Cahan *et al.*, 2015; de Klerk *et al.*, 2015; Qiu *et al.*, 2016) as it affects the long-term survival and profitability of the company (Whelan and Fink, 2016). However, despite its demonstrated value-relevance, a review of sustainability reporting research conclude that investors are not the primary intended audience of environmental reports prepared by management (Guidry & Patten, 2012). Similarly, in recent analysis of strategy disclosures in integrated reports of financial sector companies in South Africa, it

was found that social and environmental strategy disclosures are still secondary to financial strategy disclosures (Van Zijl *et al.*, 2017). It seems then that management still consider two different audiences when they decide on message design and quality.

Considering the different audiences and different messages, Mohamad *et al.* (2019) conclude that corporate communication management (CCM) broadly consists of corporate advertising, public affairs, public relations, media relations, employee communications and investor relations (IR). The UK Investor Relations Society (IR Society) (n.d.) defines IR as:

“...the communication of information and insight between a company and the investment community. This process enables a full appreciation of the company’s business activities, strategy and prospects and allows the market to make an informed judgement about the fair value and appropriate ownership of a company.”

Communicating with investors and other funders are usually the responsibility of the finance department in conjunction with the IR department or IR consultants (Bank of New York Mellon, 2016; Hoffmann & Fieseler, 2012; Mohamad *et al.*, 2019). In contrast, sustainability¹ reporting is normally prepared by the public relations (PR) department or corporate affairs (Doan & McKie, 2017; Mohamad *et al.*, 2019). In their review of investor relations research in business and communications literature, Doan and McKie (2017) lament the lack of integration in research on investor relations and public relations functions. Less than five per cent of studies were conducted in developing countries and Doan and McKie (2017) call for studies on IR outside of the US, UK and other developed markets. Mohamad *et al.* (2019) too call for further research that broadens the scope of CCM in relation to external stakeholders such as investors, as well as in other domains beyond Malaysia.

The current study therefore attempts to ‘operationalise’ corporate transparency by linking the perceived quality of communications aimed at two distinct stakeholder groups, based on information that was intentionally shared via the company’s sustainability reporting and its corporate IR webpages. The two streams of disclosure behaviour is analysed from the perspective of legitimacy theory and voluntary disclosure theory. Quality in sustainability communications alone

¹ Sustainability reporting in this article includes corporate social responsibility (CSR) reporting and environmental, social and governance (ESG) reporting.

may suggest legitimising strategies whilst quality in IR practices alone may suggest an overly financial focus of the company. It is proposed that companies that succeed at superior message quality to both audiences are engaging in genuine attempts at corporate transparency. Furthermore, in terms of CCM, it aims to find linkages between the 'message' outputs of the investor relations department and the public relations department. Lastly, in response to Mohamad *et al.* (2019) as well as Doan and McKie (2017), it explores CCM in South Africa, a Sub-Saharan developing country, but with a very well developed financial sector and securities exchange (WEF, 2012). The linkage between the two types of corporate communications were tested with a cross-sectional ordinary least squares regression. This study contributes to the literature on corporate transparency by operationalising reporting 'transparency' in that it considers the combined communications output to both financial and non-financial stakeholder groupings. It considers whether sustainability reporting is purely a legitimising strategy or attempt to improve corporate transparency in the broadest sense. It also alleviates the scarcity of research on the links between public relations and investor relations in corporate communications by demonstrating a joint contribution to transparency.

Theory, Literature Review and Hypothesis Development

1.1. Legitimacy theory vs Voluntary Disclosure theory

The two streams of messaging will be considered from separate theoretical perspectives as the intentions and audiences differ. Firstly, sustainability reporting can be considered from both a pull and a push perspective. Climate change, carbon emissions, bio-diversity, human trafficking, good corporate governance and income inequality have become important issues to people all over the world. Communities, employees and even activist shareholders have come to hold companies accountable for the impact of companies' activities on the environment, local communities, employees, etc. (Eccles *et al.*, 2011; Lund-Thomsen *et al.*, 2016; Uysal, 2014). Sustainability reports and integrated reports addresses the information needs of these non-financial stakeholders (*pull perspective*) by reporting on the utilisation and effects of the companies' actions on human, social and relational, and natural capitals (IIRC, 2013). From the *push perspective*, there are many theories why companies engage in sustainability practices and reporting, the most well-known being legitimacy theory. Dowling and Pfeffer (1975) propose that in order for companies to continue to exist (i.e. being legitimate), it has to enter into a contract with society where the company performs certain *actions* in order to win the approval of society for the company's continued existence and main business activities. The next step is then to report or *communicate* to stakeholders about such actions. Suchman (1995) argues that in disclosing information relating to their corporate social responsibilities, companies are trying to demonstrate that their actions are 'desirable, proper or

appropriate within some socially constructed system of norms, values, beliefs, and definitions'. DiMaggio and Powell (1983) propose that one of the reasons that organisations would mimic the practices (such as sustainability reporting) of other successful organisations is if their own goals are ambiguous or disputed and they are therefore 'highly dependent upon appearances for legitimacy'. Deegan (2019) concludes that legitimacy theory in the context of sustainability reporting:

...adopts a central assumption that the maintenance of successful organisational operations requires managers to ensure that their organisation appears to be operating in conformance with community expectations, and therefore is attributed the status of being "legitimate"

Voluntary disclosures to financial stakeholders can similarly be considered from both a push and pull perspective. Voluntary disclosure theory is premised on the assumption that managers are better informed than outsiders are. Information asymmetry in capital markets arises because shareholders (principals) appoint managers (agents) to manage the day-to-day activities of the company. From a *push perspective*, managers then engage in voluntary disclosures to signal their trustworthiness and quality to the providers of the capital with a view to having their employment contracts renewed or for monetary incentives (Jensen & Meckling, 1973; Spence, 1973). Pushing information also reduces the risk of adverse selection (Akerlof, 1970) by uninformed market participants that contributes to suboptimal pricing of the companies' shares. The *pull* for additional voluntary disclosures arises because investors require financial and other non-financial information over and above the audited annual financial statements in order to make their investment decisions (AICPA, 1994; Beattie, Pratt & ICAS, 2002). Information about long-term competitive strategies, customer satisfaction, patents, competitors and industry is important to investors (Bailey *et al.*, 2014; Cascino *et al.*, 2016). These types of information can be classified as information about the financial, manufactured and intellectual capitals (IIRC, 2013). Communicating these voluntary disclosures increasingly became the responsibility of companies' investor relations (IR) departments (Marston, 2004; Laskin, 2006; Bechan, 2011).

1.2. Socially Responsible Investment Indices

Companies' sustainability disclosures and policies are in many instances reviewed by independent consultant firms that provide ratings and rankings, such as Kinder Lydenburg and Domini (KLD) (Perrault & Quinn, 2018), RobecoSAM (Stolowy & Paugam, 2018) and even auditing firms (Ackers, 2017). These firms' ratings are then used to constitute sustainability indices such as the Dow Jones

Sustainability Index, the MSCI Global SRI Indexes, FTSE4Good Index and S&P 500 Environmental & Socially Responsible Index. In South Africa, the Johannesburg Stock Exchange (JSE) launched its Socially Responsible Investment (SRI) Index in May 2004. In determining the constituents of the SRI Index, companies' published policies and strategies, management, performance and reporting on a range of sustainability issues were assessed by EIRIS and the University of Stellenbosch Business School (JSE, 2011b). During the first phase, typically commencing between May and July of each year, all *publicly available information* regarding the company is reviewed to compile a profile indicating how such information compares to the assessment criteria. In stage two, the company will be invited to respond to the profile by commenting on, supplementing or clarifying information contained in the profile within three weeks from receiving the preliminary profile. The annual reconstitution of the SRI Index takes place in November of each year, based on information obtained during the preceding months (JSE, 2011c). The number of companies that have passed the minimum criteria for inclusion in the index grew from 51 in 2004 to 82 in 2014 (JSE, 2015)². The customary number of companies listed on the JSE's main board is around 300. Based on the growth in the number of constituents, it is fair to conclude that South African listed companies are taking their sustainability reporting seriously.

1.3. Investor relations

The Organisation for Economic Co-operation and Development (OECD) (2015) advises that boards clearly establish functions and responsibilities in respect of disclosure and communication. For large listed companies, the appointment of an investment relations officer who report directly to the board is considered good practice (OECD, 2015). The IR function therefore plays an important part in disseminating voluntary (as well as the usual mandatory) disclosure 'signals' to the capital market. Complying with IR best practices also benefits companies financially. Increasing IR quality reduces the dispersion of analyst earnings forecasts and bid-ask spread, increases the analyst following, increases investment by institutional investors, and improves trading volume and book-to-price ratios (Chang *et al.*, 2008; Bushee and Miller, 2012; Chang *et al.*, 2014 and Agarwal *et al.*, 2016).

² From 12 October 2015, the JSE's SRI Index was replaced by the FTSE/JSE Responsible Investment (RI) Index Series. Companies' ESG and sustainability disclosures are now evaluated in terms of the FTSE Russell ESG Ratings methodology. In June 2018, the RI Index had 76 constituents (JSE, 2018).

Companies are increasingly making use of their websites for investor relations activities that accommodates individual or private investors as well as institutional and professional investors and analysts. Examples of these communications are the availability of their analyst presentation booklets, allowing the public to dial in to conference calls with analysts when results are released, and presenting interactive and hyperlinked company reports. ACCA (2013) reports that the company's website was deemed 'essential' or 'high' as source of non-financial information for more than 80 per cent of analysts and investors surveyed. Investors in low disclosure markets (China, emerging markets and Europe pre-IFRS) are very sensitive to voluntary disclosures in annual reports and on companies' websites (Souissi & Khlif, 2012). Quality of investor communication is therefore not only about what information is communicated, but also about whether the technology and channel used for the communications add to the credibility and usability of the information for a variety of users of corporate financial and non-financial information.

In contrast to sustainability reports, *voluntary* disclosures aimed at financial stakeholders are not audited or reviewed by independent third parties. In this regard, best practices were developed by professional bodies such as the National Investor Relations Institute (NIRI), based in the US, or the Investor Relations Society (IR Society) in the UK. Compliance with these IR best practices is voluntary and it is argued here, that IR quality could therefore be an indication of management's commitment to transparency.

1.4. Hypothesis

A 2 x 2 conceptual framework for the information disclosures aimed towards the two audiences and their theoretical drivers is presented in Figure 1. Quadrant 1 is represented by companies with poor CCM, which exert very little effort at providing additional information to any of its stakeholders over and above that prescribed by law or regulation. They are indifferent to pressures from outside. For Quadrant 2 companies, inclusion in the JSE's SRI Index, after rigorous assessment of their sustainability practices and reports, are indicative of being more accountable towards non-financial stakeholders than companies not included in the SRI Index. They have a predominantly legitimising strategy. On the other hand, companies in Quadrant 3 that adhere to best practices for IR webpages, use voluntary disclosures to reduce information asymmetry for their financial stakeholders, i.e. shareholders and debt providers. This paper hypothesises the existence of a fourth group of companies that attempt to be accountable to all stakeholders and practice corporate transparency by delivering quality messages (signals) suited to each stakeholder grouping. Such a group would be

characterised by inclusion in the JSE's SRI Index *and* by scoring high in compliance with best practices for IR webpages (Quadrant 4). For these companies, inclusion in a SRI index is therefore not only an indication that the company is socially and environmentally responsible, but it may also point towards the company's CCM strategy to be transparent and accountable to all stakeholders.

Figure 1 about here.

The hypothesis for the existence of companies in quadrant 4 is therefore:

H₁ = There is a positive association between the inclusion of a company in the JSE's SRI Index and the quality of the company's website IR practices.

1.5. Control variables

Prior literature indicate that certain company characteristics are associated with voluntary disclosure quality and these are included as control variables in the model. Bollen *et al.* (2006), Bonson and Escobar (2006), Boubaker *et al.* (2012), Samaha *et al.* (2012), Uyar (2012), Hui and Matsunaga (2015) as well as Nel *et al.* (2017) found a significantly positive association between disclosure quality and size, whether measured as market capitalisation, total assets or sales. It is assumed that larger companies have more slack resources to spend on communications and other non-core activities. A minority of studies could not find any association with the size of the company. Abdelsalam *et al.* (2007) reported that size (total assets) was only significantly positively associated with the dependent variable for 'credibility' disclosures, but not for the presentation, content or total disclosure score. Desoky (2009) and Nurunnabi and Hossain (2012) could not confirm that size was a significant determinant of disclosure. Despite the minority findings, it is proposed that in South Africa, larger companies will have more resources available to invest in better online communications on their websites. It is expected that the coefficient for the size control variable (market capitalisation) will be positive.

The effect of industry on internet disclosures and communications quality were found to be insignificant (Abdelsalam *et al.*, 2007; Desoky, 2009; Uyar, 2012; Samaha *et al.*, (2012) and Nurunnabi & Hussain, 2012). In contrast, Satta *et al.* (2015) had a significant positive coefficient for medium-sized manufacturing companies. Maubane *et al.* (2014) concluded that mining and

materials sector companies reported more information on average regarding the environment and society, but less in respect of governance. Hence, no prediction is made for industry effect on online IR communications in South Africa.

Profitability, usually measured as return on assets or return on equity is also popular as control measure as it is assumed that profitable companies would disclose more to signal their good management of the company (Hui & Matsunaga, 2015; Satta *et al.*, 2015). Abdelsalam *et al.* (2007), Desoky (2009), Uyar (2012), Samaha *et al.*, (2012), Nurunnabi and Hossain (2012), Mendes-Da-Silva and Onusic (2014) as well as Nel *et al.* (2017) found no significant relationship between online disclosure quality and company profitability. It might be that profitability is also correlated to size or industry, which might reduce the power of this control variable. Despite the findings of non-significance, profitability, measured as return on average assets is included as a control variable for the current model and it is expected to be positively associated with the online IR disclosure score.

Another control variable is financial risk, measured as the debt-to-equity ratio or the leverage ratio. It is assumed that companies with higher financial risk will be pressured by their bondholders for more disclosure in order to justify their creditworthiness. As higher debt levels increases the company's risk profile and leads to higher cost of debt, this can be mitigated by increased disclosures (Sengupta, 1998). Samaha *et al.* (2012), and Mendes-Da-Silva and Onusic (2014) find positive, but non-significant relationships with disclosure. The finding from Hui and Matsunaga (2015) of a significant negative association is surprising. Their explanation is that leverage increases financial risk and that leads to management disclosing less voluntary information. Satta *et al.* (2015) also found a significant negative association with debt. Greater bank debt is associated with greater bank monitoring. Voluntary disclosure is reduced because banks are superior monitors (Satta *et al.*, 2015). Notwithstanding the contradictory findings, this study assumes that companies with higher debt levels should have better voluntary disclosure practices.

Although voluntary disclosures are not currently audited, prior studies (Bonson & Escobar, 2006; Boubaker *et al.*, 2012; Nurunnabi & Hossain, 2012; Satta *et al.*, 2015; Nel *et al.*, 2017) have found significant positive associations between having a Big Four audit firm (Deloitte, Ernst & Young, KPMG and PricewaterhouseCoopers) and online disclosure quality. Samaha *et al.*, (2012) found a positive,

but insignificant coefficient for auditor type. Having a Big Four audit firm is therefore an indicator of general disclosure quality. This study also assumes a positive coefficient for this control variable.

Research methodology

This paper takes a positivist approach and hence the Hypothesis was tested with an ordinary least squares (OLS) regression model.

1.6. Sample selection

As this is a South African study, the sample were selected from companies listed on the JSE's main board. The sample selection and data collected formed part of a larger study that had multiple objectives (not reported in this paper). The sample were compiled in three steps: firstly, all the companies that were listed from 2002 to 2012; secondly, the top 100 companies by market capitalisation; and thirdly, all the companies from the consumer goods and services industry. Pure investment holding companies were excluded, as well as nine companies in the real estate sector that had unusually high debt ratios. The final sample came to 196 JSE-listed companies of various sizes and from six industries.

1.7. Investor relations quality: Content analyses and measurement instrument

Although NIRI and the IR Society announce annual IR award winners, their rating instruments and complete datasets in respect of individual companies' disclosure scores are proprietary data. Therefore, research on IR quality normally entails hand-collecting data by executing content analysis using self-constructed checklists or IR professional society guidelines³. The study employed a dichotomous measurement instrument (checklist) compiled from best practice guidelines for web-based IR from Loranger and Nielsen (2009) as well as the IR Society (2011a, b, c). The unit of analysis was the website of each company. An IR disclosure score was calculated as a percentage out of a maximum of 244 and this is the dependent variable in the regression analysis. Content analysis of the websites were conducted from July to mid-September 2012.

1.8. Sustainability reporting quality

³ Refer Nel and Brummer (2016) for an overview of IR measurement instruments used by various researchers,.

The data that proxied for sustainability reporting quality was the inclusion or not of the companies in the JSE's SRI Index after the review of their sustainability reports. This follows the practice of previous studies that used KLD or RebecoSAM ratings or inclusion in sustainability indices as proxy for sustainability reporting quality (Barnea & Rubin, 2010; Jiraporn *et al.*, 2014; Lee *et al.*, 2013; Shahzad *et al.*, 2016; Yu & Zhao, 2015). The SRI Index data was obtained from the JSE's announcement containing the names of the 74 companies that formed the constituents of the SRI Index for 2011 (JSE, 2011a). Sixty-nine companies in the sample were included in the SRI Index.

1.9. Regression model and variables definitions

Following from the hypothesis development and prior literature, the final model is as follows:

$$\text{IR DS \%} = \alpha + \beta_1\text{SRI}_{2011} + \beta_2\text{LNCAP} + \beta_3\text{IND} + \beta_4\text{ROaA_Win} + \beta_5\text{DE_Pub_TR} + \beta_6\text{Big4Auditor} + \varepsilon$$

The operationalisation of all the variables and their definitions can be found in Table 1. Information about market capitalisation, industry sector, audit firm and accounting ratios for each company was obtained from the INETBFA⁴ database (containing data about JSE listed companies). SPSS 25 was utilised for various statistical analyses. Transformations were performed where data did not conform to normal distributions. Where necessary, non-parametric tests were conducted in addition to parametric tests. P-P and Q-Q plots were inspected for homoscedasticity and linearity. As the data is cross-sectional and all cases are independent, tests for autocorrelation were not conducted. These tests suggest no serious violations of the OLS assumptions.

Table 1 about here.

Results and discussions

1.10. Descriptive statistics

The descriptive statistics for the untransformed continuous data is presented in Panel A of Table 2 and the categorical data in Panel B. The average online IR disclosure score is 40.3 per cent for the 196 companies reported on in this article. Given that the checklist is based on professional best

⁴ INETBFA has been taken over by IRESS.

practice, the companies were not performing too well. The average market capitalisation is R34.0 billion (R'10⁹) on 28 September 2012 compared to the average of all normal equity listings of the JSE on that date of R18.1 billion (R'10⁹). The average should be larger as the selection of companies includes the Top 100 companies per market capitalisation. The mean for the companies' profitability is 8.5 per cent based on return on average assets. On average, the companies' debt comprises one and a half times their ordinary equity. Sixty-nine of the sample companies satisfied the JSE's criteria to be included in the SRI Index, representing just more than a third of the total sample. The average IR disclosure score for these companies is 50.4 per cent, compared to only 34.8 per cent for those companies with low sustainability reporting quality. A t-test confirms that the difference is significant ($t(194) = -9.348, p < .000$). For this sample, it seems that companies with superior sustainability reporting are also better at communicating with their financial stakeholders. The largest industry grouping is Industrial companies, which represents just under 25 per cent of the sample. The Basic Materials industry had the highest mean IR disclosures score, 43.6 per cent. Although the Basic Materials industry are normally associated with superior sustainability reporting as a result of legitimising strategies, this finding shows that these companies are also invested in good IR practices. In further analysis, a one-way ANOVA was conducted on the industry averages, which indicated that the differences between the six industry are not statistically significant ($F(5,190) = 1.615; p = .158$). A minority of 32 companies were audited by firms not classified as Big4. Their mean IR disclosure score is 28.7 per cent, compared to the 42.5 per cent of companies audited by a Big4 firm. A t-test confirmed that this difference was significant ($t(194) = -5.746; p < .000$). This is in line with the literature that finds voluntary disclosure quality associated with having a Big4 auditor.

Table 2 about here.

1.11. Correlations

The results of the parametric and non-parametric correlation tests are presented in Table 3. The hypotheses for five of the independent and control variables' coefficients were directional and one-tailed significance statistics are reported for those. Two-tailed significance statistics are reported for industry as it had a non-directional hypothesis. The discussion will focus on the Pearson correlations. Inclusion in the JSE's SRI Index is strongly correlated with the quality of the company's online investor relations practices ($r = .557, p < 0.01$). The positive direction of the correlation provides provisional support for the hypothesis that companies with strong sustainability reporting is also performing well in IR communications. Size, in terms of the natural logarithm of the companies' market capitalisation, was also strongly correlated ($r = .659$) with the online communications disclosure score and was significant at the 0.01 level. The sign of the correlation is positive, which is in agreement with the hypothesis and the prior literature. Inclusion in the SRI is also strongly correlated to the size indicator with $r = .614$ ($p < 0.01$). This supports the theory that larger companies have more resources available to spend on non-core activities, such as reporting and communicating with parties outside the company. As expected, having a Big4 Auditor has a moderately positive association with the quality of voluntary online IR disclosures and practices ($r = .381; p < 0.01$). The relationship is however weaker for Inclusion in SRI ($r = .268$), but still significant at the $p < 0.01$ level. Industry was only weakly correlated ($r = -.167; p < 0.05$) with the IR disclosure score and the SRI sustainability reporting indicator ($r = -.155; p < 0.05$). This finding conforms to previous literature that had inconclusive findings for industry's association with IR disclosure. The two accounting indicators (Return on Average Assets and Debt Equity ratio) only had weak correlations with the two types of communications. Larger companies are moderately correlated with having a Big 4 Audit firm ($r = .376; p < 0.01$) and being profitable ($r = .299; p < 0.01$). Industry are significantly positively correlated with debt levels ($r = .253; p < 0.01$).

Table 3 about here.

One of the assumptions for using OLS is that there should not be perfect collinearity. As discussed, some of the independent variables also correlate with each other, although all of the correlations are below 0.7. The Variance Inflation Factor (VIF) for each independent variable was well below five (and the Tolerance is greater than 0.2). Furthermore, the average VIF is 1.603, which is not substantially greater than one (Field, 2009). It seems multicollinearity does not undermine the validity of the results.

1.12. Multivariate regression

Results of the ordinary least squares regression are presented in Table 4. The overall regression model explains 48.1 per cent of the variance in the quality of online IR communication practices in South Africa, and it is statistically significant ($F(10,185) = 19.079$; $p < .001$). The Adjusted R^2 compares favourably with that of Abdelsalam *et al.* (2007) of 110 London companies (Adjusted $R^2 = 0.358$), Boubaker *et al.* (2012) of 529 companies in France (Adjusted $R^2 = 0.513$) and Nurunnabi and Hossainy (2012) of 83 companies in Bangladesh (Adjusted $R^2 = 0.368$). Significant results were found for only three of the independent variables: Inclusion in the SRI was significantly positive at the $p < 0.005$ level, size was significantly positive at the $p < 0.001$ level, whilst being audited by a Big4 audit firm was significantly positive at the $p < 0.01$ level. This confirms the initial findings of positive correlations between these three variables on web-based IR disclosure scores. No evidence is found to reject the hypothesis that there is a positive association between the inclusion in the JSE SRI Index and online IR communication practices ($p < .005$); hence, the hypothesis proposed in this paper is accepted.

Basic Materials was the reference industry in the model analysis and the other five industries' coefficients are all negative, indicating lower IR disclosure quality, albeit that the differences are not statistically significant. The two accounting measures (profitability and debt levels) were not significant in the model, consistent with some of the prior literature. All the coefficients' signs were positive, as predicted, except that of return on average assets, which was negative. However, the coefficient for return on average assets was very small (-0.041). It could be explained by management of underperforming companies engaging more with their investors in order to gain/retain trust. As the regression model contains continuous and dummy data it is helpful to refer to the standardised coefficients to determine relative impact on the dependent variable, online IR disclosure score. With a standardized coefficient of .493, the market size variable has more than double the effect on the dependent variable (IR DS %) than being included in the SRI Index (.208). Being audited by a Big4 audit firm is ranked third for effect on IR disclosure score. The other independent variables have very low standardized coefficients and hence very little impact on the IR disclosure score. This is also consistent with these variables being insignificant in the model ($p > 0.05$).

Table 4 about here.

The practical significance of companies being included in the JSE's SRI Index, is that their online IR disclosure score on average improves with 5.833 percentage points, an effective improvement of 14.5 per cent on the mean IR score of 40.3 per cent. Companies who have therefore satisfied the SRI Index' requirements for disclosures and policies surrounding environmental, social and governance criteria (including climate change) are therefore more likely to have better overall transparency in communicating, not only with non-financial stakeholders, but also with investors. The model seems to support a link between sustainability practices and reporting and information management by the company in general. SRI Index companies appears to be equally willing to be accountable to their financial stakeholders as to their non-financial stakeholders. The positive significant relationship between the sustainability proxy and the online IR disclosures may also be indicative of synergies between the PR department and the IR department in companies and speaks to efficient CCM. In the absence of IR scores being publicly available, investors in SRI Index companies may infer that these companies' IR communications are of a higher quality, which increase trust between investors and the board. Referring back to Figure 1, the hypothesis accepted after testing with the OLS regression, points to the existence of companies in Quadrant 4 that strives for corporate transparency towards all stakeholders.

Practical implications

From a practical perspective, IR practitioners could motivate increased expenditure on increasing the quality of sustainability programmes and the communication thereof as it increases the probability of being included in a SRI index, which has direct benefits such as increased institutional shareholding and stock liquidity. Furthermore, investors might interpret membership of a SRI Index as a signal about the quality of the company's IR practices as well, increasing the trust between investors and the board. For retail and institutional investors in SRI companies, cost of information discovery is reduced as they can use the investor relations webpages as comprehensive source, i.e. managers are equally motivated to provide quality IR communications.

Conclusions

The purpose of the study was to 'operationalise' corporate transparency by linking the perceived quality of communications aimed at two distinct stakeholder groups, based on information that was intentionally shared via the company's sustainability reporting and its corporate IR webpages. It attempted to find evidence of significant association between corporate communications aimed at the two communication clienteles by conducting an OLS regression. Empirical data from this study finds that inclusion in the JSE's SRI Index is significantly positively associated with higher IR quality. A framework is proposed where Quadrant 4 represents those companies that generate quality outputs from both message channels. These companies can then reasonably be considered being transparent or accountable to all stakeholders. The framework reconciles the two motivations for 'messages' communicated to the two different audiences, namely legitimacy theory and voluntary disclosure theory.

The most important theoretical contribution of the study is the development of the 2 x 2 conceptual framework of disclosure behaviour and theories supporting the two types of 'messages', which in concert leads to improved corporate transparency and accountability to all stakeholders. The current study extends the literature on corporate transparency and CCM by providing empirical evidence linking the outputs of the public relations department (non-financial stakeholders) and the IR department (financial stakeholders) in one study. This study furthermore provides evidence of stakeholder communications in a sub-Saharan developing country, thereby answering the call by Mohamad *et al.* (2019) as well as Doan and McKie (2017) for such research.

Limitations and further research

The study is subject to some limitations. The empirical analysis is based on a sample of 196 companies in a cross-sectional design. The data was hand-collected via content analysis in 2012. The findings can benefit from further analysis by repeating the content analysis for newer data and executing the regression analysis with a difference-in-differences approach or by replicating the study in a domain with more companies. The study was executed on companies in South Africa. The findings might not be applicable to other capital markets. Other researchers in developing countries could repeat the study in their domain in order to establish whether the findings of this study is limited to developing countries, or whether it applies to developed countries as well.

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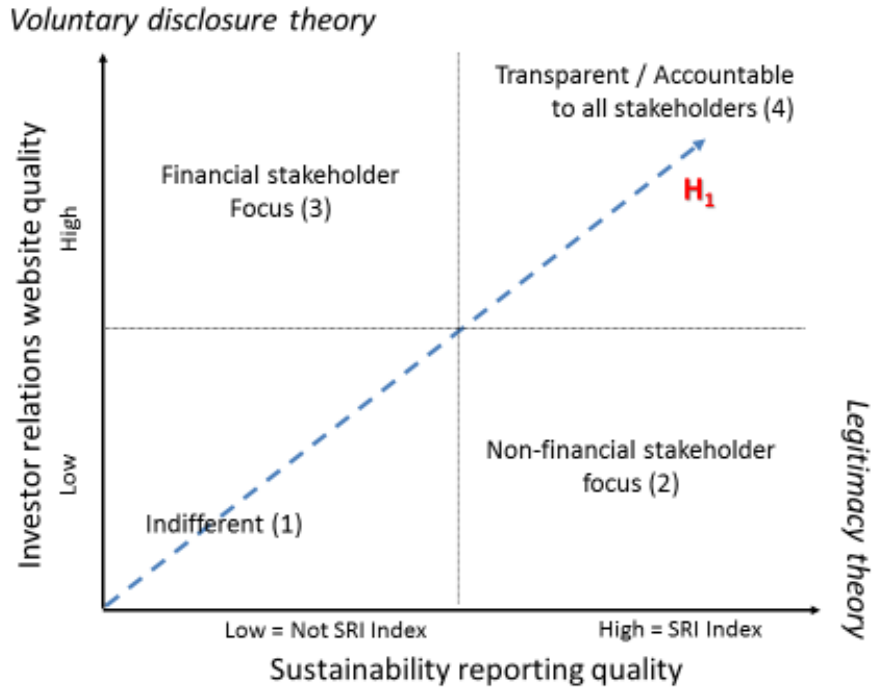


Figure 1 2 x 2 Conceptual framework for corporate disclosures based on audience type and theoretical motivation

Table 1 Dependent variable definition:

IR DS %	The disclosure score percentage for online IR was obtained from the content analysis.
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Independent variable definitions:

<u>Variable of interest:</u>	
SRI_2011	Coded '1' if the company was included in the November 2011 SRI Index of the JSE, otherwise, '0'. This is a lagged variable to counter possible reverse causality with the dependent variable IR DS %.
<u>Control variables:</u>	
<i>CAP:</i>	Market capitalisation on 28 Sept 2012 (last trading day) in R' 10 ⁹ .
<i>LNCAP:</i>	In order to obtain normality, <i>CAP</i> was transformed to its natural logarithm.
<i>IND:</i>	Dummy variables for six industries. Basic Materials was the reference category.
<i>ROaA</i>	Return on average total assets ratio for the latest financial year ending at least three months before 1 July 2012 as per standardised financial statements in the INETBFA database.
<i>ROaA_Win</i>	In order to achieve normality of the distribution, five outliers in the left tail and four outliers in the right tail were winsorized. This is less than five per cent of all cases, which is within the acceptable range for applying winsorization.
<i>DE</i>	Debt-to-equity ratio as published by the company for the latest financial year ending at least three months before 1 July 2012 from the INETBFA database. Nine companies in the real estate sector were excluded as they had unusually high debt-to-equity ratios (normal for their business model, but not comparable to other companies in the sample).
<i>DE_Pub_TR</i>	In order to achieve normality of the distribution the ratios were transformed to its natural logarithm.
<i>Big4Auditor</i>	Coded '1' if the auditors are Deloitte, Ernst & Young, KPMG or PricewaterhouseCoopers, otherwise '0'.

Table 2 Descriptive statistics

Panel A – continuous variables	N	Mean	Minimum	Maximum	SD
<i>Dependent variable</i>					
IR Disclosure Score %	196	40.3	4.1	66.4	13.5
<i>Independent variables</i>					
Market Cap (R billion)	196	34.0	.0	860.5	96.2
Return on average assets %	196	8.5	-98.4	80.2	16.1
Debt to Equity ratio	196	1.5	.0	12.3	2.3
Valid N (listwise)	196				

Panel B – categorical variables		Frequency	Per cent	Mean IR DS %
Included in SRI Index	Not included	127	64.8	34.8
	Included in SRI	69	35.2	50.4
	Total	196	100.0	
Industry	Basic Materials	42	21.4	43.6
	Consumer Goods	22	11.2	38.9
	Consumer Services	42	21.4	40.9
	Financials	31	15.8	42.5
	Industrials	47	24.0	37.3
	Technology	12	6.1	34.9
	Total	196	100.0	
	Total	196	100.0	
Big 4 Auditors	Other Auditors	32	16.3	28.7
	Big 4 Auditor	164	83.7	42.5
	Total	196	100.0	

Table 3 Correlation Matrix (N=196)

Pearson correlations below the diagonal and Spearman's rho correlations above the diagonal.

	IR DS %	Incl in SRI	Ln of Market Cap	Industry	Return on Average Assets	Ln of Debt Equity	Big 4 Auditors
IR DS %	1	.556**	.658**	-.159***	.150*	.119	.388**
Incl in SRI	.557**	1	.637**	-.140***	.111	.142*	.268**
Ln of Market Cap	.659**	.614**	1	-.170***	.266**	.077	.380**
Industry	-.167***	-.155***	-.199#	1	-.163***	.347#	-.151***
Return on Average Assets	.143*	.126*	.299**	-.104	1	-.172**	.121*
Ln of Debt Equity	.108	.154*	.070	.253#	-.168**	1	-.035
Big 4 Auditors	.381**	.268**	.376**	-.161***	.099	-.049	1

* Correlation is significant at the 0.05 level (1-tailed). ** Correlation is significant at the 0.01 level (1-tailed).

*** Correlation is significant at the 0.05 level (2-tailed). # Correlation is significant at the 0.01 level (2-tailed).

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Table 4 Results of OLS regression

Dependent Variable: IR Disclosure Score %						
		Unstandardized		Standardized		
		Coefficients		Coefficients		
Expected			Std.			
sign	Item	B	Error	Beta	t	Sig.
	(Constant)	-28.405	9.007		-3.154	.002
+	Inclusion in SRI	5.833	1.903	.208	3.065	.003
+	Ln of Market Cap	2.930	.443	.493	6.607	.000
?	Consumer Goods	-5.028	2.618	-.118	-1.921	.056
?	Consumer Services	-1.472	2.266	-.045	-.650	.517
?	Financials	-3.809	2.589	-.104	-1.471	.143
?	Industrials	-3.203	2.190	-.102	-1.463	.145
?	Technology	-.218	3.359	-.004	-.065	.948
+	Return on Average Assets	-.076	.076	-.063	-.997	.320
+	Ln of Debt Equity	.721	.649	.064	1.112	.267
+	Big 4 Auditors	5.757	2.067	.159	2.785	.006
	Adjusted R2					.481
	F value					19.079
	Sig.					.000

Author A